



STATE OF CONNECTICUT



DEPARTMENT OF PUBLIC SAFETY
OFFICE OF THE COMMISSIONER

John A. Danaher III
Commissioner

Lieutenant Edwin S. Henion
Chief of Staff

March 25, 2010

Chief Information Officer Diane S. Wallace
Department of Information Technology
101 East River Drive
East Hartford, CT 06108-3274

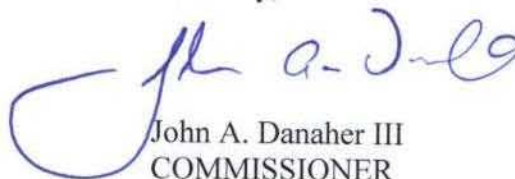
Dear CIO Wallace:

This letter confirms that the Connecticut Department of Public Safety, Office of Statewide Emergency Telecommunications is committing \$23,463,757 in matching funds to the construction of the Statewide High-Speed Data Network (the "Public Safety Data Network", or PSDN) as a part of Connecticut's BTOP application. These funds have not been committed as a match to any other program.

The source of the funding for the match is the Enhanced 9-1-1 Telecommunications Fund (the "Fund") managed by DPS on behalf of the state for the provision of 9-1-1 services, including high speed data services, as authorized by Conn. Gen. Stat. §28-24(b) and §28-30a(c).

All construction and operating costs for the DPS/PSDN are and will be paid from the Fund, and there is no request for additional future funding/appropriations in order to operate the projects in this proposal.

Sincerely,



John A. Danaher III
COMMISSIONER

Comprehensive Community Infrastructure Key Metrics Dashboard

Please refer to the CCI Grant Guidelines for instructions on completing this form.

Applicant Profile	
Applicant Name	Diane Wallace
Title	CIO, Connecticut Department of Information Technology
Easygrants ID	7356
Headquarters	101 East River Drive, East Hartford, CT
Size (2009 Data) of Applicant Entity	<ul style="list-style-type: none"> • Current Year Revenues: \$74,600,766 • Employees: 270
Technology Type	Fiber
Key Partners	Connecticut Department of Public Safety

Project Economics			
Budget Information		Project Financials	
Project Budget	117,318,786	Project Revenues (Yr 8)	\$19,236,806.00
Federal Contribution (%)	80%	Net Income and Margin (Yr 8)	(\$9,859,589.00)
Cash Match Amount (%)	20%	EBITDA and Margin (Yr 8)	(\$9,859,589.00)
In Kind Match Amount (%)		Rate of Return (w/o BTOP Funds)	
Middle Mile/Last Mile Budget Allocation		Rate of Return (w/ BTOP Funds)	
Middle Mile Percentage (%)	100%	Cost Efficiency	
Last Mile Percentage (%)		Cost per Mile (MM)	\$12,801.56
Rural Last Mile Percentage		Cost per Household (LM)	

Market Territory	
Geographic Area(s)	State of Connecticut
Middle Mile Network Composition	
Total Proposed Network Miles (MM only)	<ul style="list-style-type: none"> • Total Miles: 5544 • Backbone Miles: 4925 • Lateral Miles: 619
New Construction Network Miles (MM only)	<ul style="list-style-type: none"> • Total Miles: 5544 • Backbone Miles: 4925 • Lateral Miles: 619
Existing Applicant Network Miles Utilized (MM only)	<ul style="list-style-type: none"> • Total Miles: • Backbone Miles: • Lateral Miles:
Leased Network Miles Utilized (MM only)	<ul style="list-style-type: none"> • Total Miles: • Backbone Miles: • Lateral Miles:
Underserved/Unserved	<ul style="list-style-type: none"> • Percentage of Backbone Miles in Underserved/Unserved Areas: 57.4% • Percentage of Lateral Miles in Underserved/Unserved Areas: 57.4%
Existing Customer Base	
Existing Residential/Individual Customers within PFSA	

Comprehensive Community Infrastructure Key Metrics Dashboard

Existing Business Customers within PFSA	
Existing Community Anchor Institution Customers within PFSA	<ul style="list-style-type: none"> • Total CAI's: 342 • Community Colleges: 3 • Public Safety Entities: 0
Existing Third Party Service Provider Customers within PFSA	
Potential Customer Base	
Market Potential Households (within PFSA)	<ul style="list-style-type: none"> • Total HH's: • Located in Underserved/Unserved Areas:
Market Potential Businesses (within PFSA)	<ul style="list-style-type: none"> • Total Businesses: • Located in Underserved/Unserved Areas:
Market Potential Community Anchor Institutions (within PFSA)	<ul style="list-style-type: none"> • Total CAI's: 2037 • Located in Underserved/Unserved Areas: 1170 • Community Colleges: 12 • Public Safety Entities: 917
Market Potential Third Party Service Providers (within PFSA)	<ul style="list-style-type: none"> • Total Third Party Service Providers in PFSA: • Expressing Commitment or Letter of Interest:
Funded Network Coverage	
Households Connected to Network (via BTOP Funds by end of Year 3)	<ul style="list-style-type: none"> • Total Households Connected: • Located in Underserved/Unserved Areas:
Businesses Connected to Network (via BTOP Funds by end of Year 3)	<ul style="list-style-type: none"> • Total Businesses Connected: • Located in Underserved/Unserved Areas:
Community Anchor Institutions Directly Connected (via BTOP Funds by end of Year 3)	<ul style="list-style-type: none"> • Total Directly Connected CAI's: 667 • Located in Underserved/Unserved Areas: 389 • Community Colleges: 2 • Public Safety Entities: 547
Projected Subscribers by Year Five	<p><u>Directly Served by Applicant</u></p> <ul style="list-style-type: none"> • Community Anchor Institutions: 1009 • Households: • Businesses: • Third Party Service Providers: <p><u>Served by Proposed Network Via Third Party Service Provider</u></p> <ul style="list-style-type: none"> • Community Anchor Institutions: • Households: • Businesses:

Comprehensive Community Infrastructure Key Metrics Dashboard

Other	
Proposed MM Network Capacity	<ul style="list-style-type: none"> • Backbone: 10Gbps • Laterals: 1Gbps
Proposed LM Network Speed	<ul style="list-style-type: none"> • Highest offered speed tier: • Estimated Average speed for highest speed tier:
Total Points of Interconnection	<ul style="list-style-type: none"> • Total Pol's: 667 • Pol's in Underserved/Unserved Areas: 383 • Environmentally-controlled, non-passive Pols:
Jobs Created	<ul style="list-style-type: none"> • Direct Job-years: 1271 • Indirect Job-years: 813 • Induced Job-years: 457
Required Time for Project Completion (Number of Required Quarters to Fully Build-out and Test Network and Make Ready for Commercial Service)	10 Quarters



**CONNECTICUT PUBLIC
BROADCASTING NETWORK**

CPTV | Connecticut Public Television
WNPR | Connecticut Public Radio

1049 Asylum Avenue
Hartford, CT 06105-2411
860.278.5310

70 Audubon Street
New Haven, CT 06510-1218
203.776.9677

www.cpbn.org
www.cptv.org
www.wnpr.org

CPTV

WEDH | Hartford
WEDW | Stamford
WEDN | Norwich
WEDY | New Haven

WNPR

90.5FM | Hartford | New Haven
89.1FM | Norwich | New London
88.5FM | Stamford | Greenwich
91.3FM | Southampton, NY
99.5FM | Storrs

PRINT

Connecticut Magazine

PRODUCTION

MediaVision Productions, Inc.

August 7, 2009

Jerry Franklin
President & CEO

860.275.7220
Fax: 860.275.7500
jfranklin@cpbn.org

Ms. Sarah Edson
Connecticut Education Network
101 East River Drive
East Hartford, CT 06108-3274

Dear Ms. Edson:

I'm writing this letter to confirm my support of including Connecticut Public Broadcasting, Inc. (CPBI) in the statewide submission for funding to the Broadband Technology Opportunities Program.

As the only public media service in Connecticut, it is vital that we provide the highest quality and most reliable service to our statewide television and radio audiences. By upgrading our currently antiquated broadcast delivery system to a broadband interconnect system via fiber, CPBI will have fewer service interruptions and will be capable of offering more streams of programming.

We look forward to being a part of this statewide initiative to better serve the citizens of Connecticut.

Sincerely,

Jerry Franklin

JF:bmp

U.S. Department of Commerce
Broadband Technology Opportunities Program
Authentication and Certifications

1. I certify that I am the duly Authorized Organization Representative (AOR) of the applicant organization, and that I have been authorized to submit the attached application on its behalf.
2. I certify that I have examined this application, that all of the information and responses in this application, including certifications, and forms submitted, all of which are part of this grant application, are material representations of fact and true and correct to the best of my knowledge, that the entity(ies) that is requesting grant funding pursuant to this application and any subgrantees and subcontractors will comply with the terms, conditions, purposes, and federal requirements of the grant program; that no kickbacks were paid to anyone; and that a false, fictitious, or fraudulent statements or claims on this application are grounds for denial or termination of a grant award, and/or possible punishment by a fine or imprisonment as provided in 18 U.S.C. §1001 and civil violations of the False Claims Act.
3. I certify that the entity(ies) I represent have and will comply with all applicable federal, state, and local laws, rules, regulations, ordinances, codes, orders and programmatic rules and requirements relating to the project. I acknowledge that failure to do so may result in rejection or deobligation of the grant or loan award. I acknowledge that failure to comply with all federal and program rules could result in civil or criminal prosecution by the appropriate law enforcement authorities.
4. I certify that the entity(ies) I represent has and will comply with all applicable administrative and federal statutory, regulatory, and policy requirements set forth in the Department of Commerce Pre-Award Notification Requirements for Grants and Cooperative Agreements ("DOC Pre-Award Notification"), published in the Federal Register on February 11, 2008 (73 FR 7696), as amended; DOC Financial Assistance Standard Terms and Conditions (Mar. 8, 2009); the Department of Commerce American Recovery and Reinvestment Act Award Terms (Apr. 9, 2009); and any Special Award Terms and Conditions that are included by the Grants Officer in the award.
5. I certify that any funds awarded to the entity(ies) I represent as a result of this application will not result in any unjust enrichment of such entity(ies) or duplicate any funds such entity(ies) receive under federal universal service support programs administered by the Universal Service Administrative Corporation (USAC).
6. I certify that the entity(ies) I represent has secured access to pay the 20% of total project cost or has petitioned the Assistant Secretary of NTIA for a waiver of the matching requirement.

3/26/2010

Date



Authorized Organization Representative Signature

FRANK E. ARUTE

Print Name

FISCAL ADMIN MANAGER

Title

BTOP Comprehensive Community Infrastructure Pro Forma Financial Projections

Please complete the Income Statement, Balance Sheet, Cash Flows, and NPV-IRR Table worksheets. Key assumptions used to formulate these financial projections should be listed in the Key Assumptions worksheet. Please note that these are **project-specific** projections, in contrast to the historical financial information which is provided at the organizational level.

Please refer to the Comprehensive Community Infrastructure Grant Guidance for detailed instructions on the completing this attachment.

Applicants are required to provide this attachment as an Excel file, and not to convert it to a PDF when submitting a copy of their application on an appropriate electronic medium, such as a DVD, CD-ROM, or flash drive. Applicants may make adjustments to the format of the templates as necessary to provide the most effective presentation of the data for their specific project, but should not remove major headings (*e.g.* Revenues and Expenses on the Income Statement) or provide less detailed information than would be required to complete the provided templates.

CEN Income Statement

	Forecast Period							
	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8
Revenues								
Broadband Offerings								
Wholesale Data	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Retail Data	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Dark Fiber	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Collocation	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Other (list specific services)	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Other Network Driven Revenues								
Video Services	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Voice Services (local/toll/long distance)	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Other (list specific services)	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Universal Service Fund	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Installation Revenues	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Other Revenues	\$ 1,840,000	\$ 1,955,200	\$ 1,955,200	\$ 1,955,200	\$ 1,955,200	\$ 1,955,200	\$ 1,955,200	\$ 1,955,200
Total Revenues	\$ 1,840,000	\$ 1,955,200	\$ 1,955,200	\$ 1,955,200	\$ 1,955,200	\$ 1,955,200	\$ 1,955,200	\$ 1,955,200
Expenses								
Backhaul	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Network Maintenance/Monitoring	\$ 12,993,532	\$ 981,994	\$ 981,994	\$ 996,994	\$ 1,012,294	\$ 1,012,294	\$ 1,026,931	\$ 1,026,931
Utilities	\$ 21,810,470	\$ 12,424,620	\$ 5,354,620	\$ 5,354,620	\$ 5,354,620	\$ 5,354,620	\$ 5,354,620	\$ 5,354,620
Leasing	\$ 210,000	\$ 280,000	\$ 280,000	\$ 280,000	\$ 290,000	\$ 290,000	\$ 295,800	\$ 301,716
Sales/Marketing	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Customer Care	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Billing	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Corporate G&A	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Other Operating Expense	\$ 863,798	\$ 705,930	\$ 525,000	\$ 530,000	\$ 530,000	\$ 530,000	\$ 537,950	\$ 537,950
Total	\$ 35,877,800	\$ 14,392,544	\$ 7,141,614	\$ 7,161,614	\$ 7,186,914	\$ 7,186,914	\$ 7,215,301	\$ 7,221,217
EBITDA	\$ (34,037,800)	\$ (12,437,344)	\$ (5,186,414)	\$ (5,206,414)	\$ (5,231,714)	\$ (5,231,714)	\$ (5,260,101)	\$ (5,266,017)
Depreciation	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Amortization	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Earnings Before Interest and Taxes	\$ (34,037,800)	\$ (12,437,344)	\$ (5,186,414)	\$ (5,206,414)	\$ (5,231,714)	\$ (5,231,714)	\$ (5,260,101)	\$ (5,266,017)
Interest Expense	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Income Before Taxes	\$ (34,037,800)	\$ (12,437,344)	\$ (5,186,414)	\$ (5,206,414)	\$ (5,231,714)	\$ (5,231,714)	\$ (5,260,101)	\$ (5,266,017)
Property Tax	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Income Taxes	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Net Income	\$ (34,037,800)	\$ (12,437,344)	\$ (5,186,414)	\$ (5,206,414)	\$ (5,231,714)	\$ (5,231,714)	\$ (5,260,101)	\$ (5,266,017)

NPV/IRR Table

	Net Present Value	Internal Rate of Return
Without BTOP Funding		
With BTOP Funding		

Revenue Assumptions		
Factor	Specific Metric Used in Analysis	Rationale (Cite Basis)
Customers Passed		
Anchor Institutions - Segment A		
Anchor Institutions - Segment B		
Businesses		
Households		
Last Mile Providers		
Other		Only 6 sites will increase revenue
Take Rate (should likely vary across 8-Year Forecast)		
Anchor Institutions - Segment A		
Anchor Institutions - Segment B		
Businesses		
Households		
Last Mile Providers		
Direct Customer Connections		
Customer Segment A		
Customer Segment B		
Other		
Average Revenue per User (may vary across 8-year forecast)		
Anchor Institutions - Segment A		
Anchor Institutions - Segment B		
Businesses		
Households		
Last Mile Providers		
Other	Revenue based on set rate x (# of customers)	Increase from year 1 to year 2 is based on an increase in customers. There are no foreseeable increases past the completion of the current project plan.

Expense Assumptions		
Factor	Specific Metric Used in Analysis	Rationale (Cite Basis)
Network Expenses		
Backhaul		
Maintenance	Based on contract	

Utilities		
Leasing		
Depreciation		
Other		
Sales & Marketing		
Advertising		
Commissions		
Salaries		
Other		
Customer Care & Billing		
Systems		
Personnel		
Other		
General & Administrative		
Professional Services		
Insurance		
Non-Network Utilities		
Travel		
Supplies		
Miscellaneous		
Interest Expenses		
Debt Instrument A		
Debt Instrument B		
Taxes		
Federal Tax Rate		
Other Tax Rates		

BTOP Comprehensive Community Infrastructure Detailed Budget

Please complete the General Budget Overview and Detailed Project Costs worksheets.

Please refer to the Comprehensive Community Infrastructure Grant Guidance for detailed instructions on the completing this upload.

Applicants are required to provide this upload as an Excel file, and not to convert it to a PDF prior to upload. Applicants should not alter the layout of the provided templates, except to insert additional line-items as needed in the Detailed Project Costs worksheet.

Important Update - 3/19/2010: This template has been updated with the addition of a new column in the Detailed Project Costs worksheet. The new column, titled "Cash Match Percentage" allows Applicants to specify the percentage of the line item cost that will be provided by the cash match. This column is only relevant if "Cash Match" is selected in column C (the "Match" column). If "Cash Match" is selected in column C, Applicants should specify a percentage in the Cash Match Percentage field--100% means that the line item will be paid for entirely from the cash match, 0% means that it is paid for entirely from the federal request, any other amount will allocate the costs between the federal request and the cash match.

Note that it is not required for Applicants to use this updated template. Applicants that submit their detailed budget using the previously available template will not be penalized. In the previous version of this template, selecting "Cash Match" in column C indicates that 100% of the line item cost will be paid from the cash match.

General Budget Overview

Budget	Federal Funding Request	Matching Funds (Cash)	Matching Funds (In-Kind)	Budget TOTAL	Last Mile Allocation	Middle Mile Allocation	Allocated TOTAL
Network & Access Equipment (switching, routing, transport, access)	\$30,895,970	\$7,723,992		\$38,619,962		\$38,619,962.00	\$38,619,962
Outside Plant (cables, conduits, ducts, poles, towers, repeaters, etc.)	\$56,777,499	\$14,194,375		\$70,971,874		\$70,971,874.00	\$70,971,874
Buildings and Land – (new construction, improvements, renovations, lease)				\$0			\$0
Customer Premise Equipment (modems, set-top boxes, inside wiring, etc.)				\$0			\$0
Billing and Operational Support Systems (IT systems, software, etc.)				\$0			\$0
Operating Equipment (vehicles, office equipment, other)				\$0			\$0
Engineering/Professional Services (engineering design, project management, consulting, etc.)	\$6,181,560	\$1,545,390		\$7,726,950		\$7,726,950.00	\$7,726,950
Testing (network elements, IT system elements, user devices, test generators, lab furnishings, servers/computers, etc.)				\$0			\$0
Site Preparation				\$0			\$0
Other				\$0			\$0
TOTAL BROADBAND SYSTEM:	\$93,855,029	\$23,463,757	\$0	\$117,318,786	\$0	\$117,318,786	\$117,318,786
Cost Share Percentage:	80.00%	20.00%	0.00%				

DETAIL OF PROJECT COSTS

PLEASE COMPLETE THE TABLE BELOW FOR THE DIFFERENT CATEGORIES OF EQUIPMENT THAT WILL BE REQUIRED FOR COMPLETING THE PROJECT. EACH CATEGORY SHOULD BE BROKEN DOWN TO THE APPROPRIATE LEVEL FOR IDENTIFYING UNIT COST

		Match (Cash/In-kind)	Cash Match Percentage	Unit Cost	No. of Units	Total Cost	Last Mile Allocation	Middle Mile Allocation	Allocated Total	SF-424C Budget Category	Support of Reasonableness
NETWORK & ACCESS EQUIPMENT						\$38,619,962	\$0	\$38,619,962	\$38,619,962		
Switching	PSDN/NG911	Cash Match	20.00%	\$6,348.41	435	\$2,761,560		\$2,761,560.00	\$2,761,560	10. Equipment	State master contract with additional
	CEN	Cash Match	20.00%	\$25,321.19	101	\$2,557,440		\$2,557,440.00	\$2,557,440	10. Equipment	discounts to total approx 54% off list prices
	POP2	Cash Match	20.00%	\$65,270.50	2	\$130,541		\$130,541.00	\$130,541	10. Equipment	
Routing	PSDN/NG911	Cash Match	20.00%	\$28,373.14	112	\$3,177,792		\$3,177,792.00	\$3,177,792	10. Equipment	
	CEN	Cash Match	20.00%	\$102,965.16	101	\$10,399,481		\$10,399,481.00	\$10,399,481	10. Equipment	
	POP2	Cash Match	20.00%	\$60,717.50	2	\$121,435		\$121,435.00	\$121,435	10. Equipment	
Transport	PSDN/NG911	Cash Match	20.00%	\$156,781.19	112	\$17,559,493		\$17,559,493.00	\$17,559,493	10. Equipment	
	POP2	Cash Match	20.00%	\$30,960.00	2	\$61,920		\$61,920.00	\$61,920	10. Equipment	
Access						\$0			\$0		
						\$0			\$0		
						\$0			\$0		
						\$0			\$0		
Other	PSDN/NG911 (VSAT)	Cash Match	20.00%	\$16,520.54	112	\$1,850,300		\$1,850,300.00	\$1,850,300	10. Equipment	
						\$0			\$0		
						\$0			\$0		
OUTSIDE PLANT						\$70,971,874	\$0	\$70,971,874	\$70,971,874		
Cables	PSDN/NG911 Fiber	Cash Match	20.00%	\$9,636.62	4306	\$41,495,274		41495274	\$41,495,274	9. Construction	State master contract with additional
	CEN Fiber	Cash Match	20.00%	\$18,156.87	1238	\$22,478,200		22478200	\$22,478,200	9. Construction	vendor discounts for this project
Conduits						\$0			\$0		
						\$0			\$0		
						\$0			\$0		
						\$0			\$0		
Ducts						\$0			\$0		
						\$0			\$0		
						\$0			\$0		
						\$0			\$0		
Poles						\$0			\$0		
						\$0			\$0		
						\$0			\$0		
						\$0			\$0		
Towers						\$0			\$0		
						\$0			\$0		
						\$0			\$0		
						\$0			\$0		
Repeaters						\$0			\$0		
						\$0			\$0		
						\$0			\$0		
						\$0			\$0		
Other	PSDN/NG911 Site Lateral	Cash Match	20.00%	\$10,800.00	547	\$5,907,600		5907600	\$5,907,600	9. Construction	State master contract with additional
	CEN Site Lateral	Cash Match	20.00%	\$10,800.00	101	\$1,090,800		1090800	\$1,090,800	9. Construction	vendor discounts for this project
					\$0			\$0			

		Match (Cash/In-kind)	Cash Match Percentage	Unit Cost	No. of Units	Total Cost	Last Mile Allocation	Middle Mile Allocation	Allocated Total	SF-424C Budget Category	Support of Reasonableness
BUILDINGS											
New Construction						\$0	\$0	\$0	\$0		
						\$0			\$0		
						\$0			\$0		
Pre-Fab Huts						\$0			\$0		
						\$0			\$0		
						\$0			\$0		
Improvements &						\$0			\$0		
						\$0			\$0		
						\$0			\$0		
Other						\$0			\$0		
						\$0			\$0		
						\$0			\$0		
CUSTOMER PREMISE EQUIPMENT											
Modems						\$0	\$0	\$0	\$0		
						\$0			\$0		
						\$0			\$0		
Set Top Boxes						\$0			\$0		
						\$0			\$0		
						\$0			\$0		
Inside Writing						\$0			\$0		
						\$0			\$0		
						\$0			\$0		
Other						\$0			\$0		
						\$0			\$0		
						\$0			\$0		
BILLING SUPPORT AND OPERATIONS SUPPORT SYSTEMS											
Billing Support						\$0	\$0	\$0	\$0		
						\$0			\$0		
						\$0			\$0		
Customer Care						\$0			\$0		
						\$0			\$0		
						\$0			\$0		
Other Support						\$0			\$0		
						\$0			\$0		
						\$0			\$0		

		Match (Cash/In-kind)	Cash Match Percentage	Unit Cost	No. of Units	Total Cost	Last Mile Allocation	Middle Mile Allocation	Allocated Total	SF-424C Budget Category	Support of Reasonableness
OPERATING EQUIPMENT						\$0	\$0	\$0	\$0		
Vehicles						\$0			\$0		
						\$0			\$0		
						\$0			\$0		
Office Equipment /						\$0			\$0		
						\$0			\$0		
						\$0			\$0		
Other						\$0			\$0		
						\$0			\$0		
						\$0			\$0		
PROFESSIONAL SERVICES						\$7,726,950	\$0	\$7,726,950	\$7,726,950		
Engineering	PSDN/NG911 Design/Eng	Cash Match	20.00%	\$250.00	1840	\$460,000		\$460,000.00	\$460,000	11. Misc.	Hours based on approx 3.4 hrs per site
	CEN Design/Eng	Cash Match	20.00%	\$250.00	420	\$105,000		\$105,000.00	\$105,000	11. Misc.	Hours based on approx 3.4 hrs per site
						\$0			\$0		
Project	PSDN/NG911 PM	Cash Match	20.00%	\$125.00	7966	\$995,750		\$995,750.00	\$995,750	11. Misc.	Hours based on 2 Project Managers for
	CEN PM	Cash Match	20.00%	\$125.00	2100	\$262,500		\$262,500.00	\$262,500	11. Misc.	project duration of approx 2.5 years
						\$0			\$0		
Consulting						\$0			\$0		
						\$0			\$0		
						\$0			\$0		
Other	PSDN/NG911 Professional Svc	Cash Match	20.00%	\$200.00	28626	\$5,725,200		\$5,725,200.00	\$5,725,200	11. Misc.	Hours based on approx 44 hours per site
	CEN Professional Svc	Cash Match	20.00%	\$200.00	892.5	\$178,500		\$178,500.00	\$178,500	11. Misc.	for installation, turn-up, configuration, test
						\$0			\$0		and production acceptance
TESTING						\$0	\$0	\$0	\$0		
Network						\$0			\$0		
						\$0			\$0		
						\$0			\$0		
IT System						\$0			\$0		
						\$0			\$0		
						\$0			\$0		
User Devices						\$0			\$0		
						\$0			\$0		
						\$0			\$0		
Test Generators						\$0			\$0		
						\$0			\$0		
						\$0			\$0		
Lab						\$0			\$0		
						\$0			\$0		
						\$0			\$0		
Servers/Computer						\$0			\$0		
						\$0			\$0		
						\$0			\$0		

	Match (Cash/In-kind)	Cash Match Percentage	Unit Cost	No. of Units	Total Cost	Last Mile Allocation	Middle Mile Allocation	Allocated Total	SF-424C Budget Category	Support of Reasonableness
OTHER UPFRONT COSTS					\$0	\$0	\$0	\$0		
Site					\$0			\$0		
					\$0			\$0		
					\$0			\$0		
Other					\$0			\$0		
					\$0			\$0		
					\$0			\$0		
PROJECT TOTAL:					\$117,318,786	\$0	\$117,318,786	\$117,318,786		

SF-424C Cross-check Totals	
1. Admin and Legal	\$0
2. Land, structures	\$0
3. Relocation expenses	\$0
4. Other	\$0

Matching Contribution Cross-check Totals	
Federal Funding Request	\$93,855,029
Cash Match Contribution	\$23,463,757
In-kind Match Contribution	\$0

Approach to allocating Last Mile and Middle Mile costs:



STATE OF CONNECTICUT



DEPARTMENT OF PUBLIC SAFETY
OFFICE OF THE COMMISSIONER

John A. Danaher III
Commissioner

Lieutenant Edwin S. Henion
Chief of Staff

March 25, 2010

Chief Information Officer Diane S. Wallace
Department of Information Technology
101 East River Drive
East Hartford, CT 06108-3274

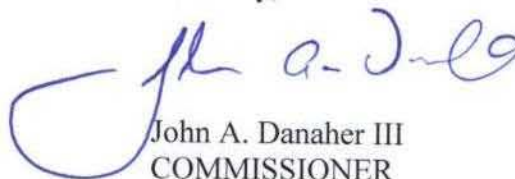
Dear CIO Wallace:

This letter confirms that the Connecticut Department of Public Safety, Office of Statewide Emergency Telecommunications is committing \$23,463,757 in matching funds to the construction of the Statewide High-Speed Data Network (the "Public Safety Data Network", or PSDN) as a part of Connecticut's BTOP application. These funds have not been committed as a match to any other program.

The source of the funding for the match is the Enhanced 9-1-1 Telecommunications Fund (the "Fund") managed by DPS on behalf of the state for the provision of 9-1-1 services, including high speed data services, as authorized by Conn. Gen. Stat. §28-24(b) and §28-30a(c).

All construction and operating costs for the DPS/PSDN are and will be paid from the Fund, and there is no request for additional future funding/appropriations in order to operate the projects in this proposal.

Sincerely,



John A. Danaher III
COMMISSIONER

BTOP Comprehensive Community Infrastructure Pro Forma Financial Projections

Please complete the Income Statement, Balance Sheet, Cash Flows, and NPV-IRR Table worksheets. Key assumptions used to formulate these financial projections should be listed in the Key Assumptions worksheet. Please note that these are **project-specific** projections, in contrast to the historical financial information which is provided at the organizational level.

Please refer to the Comprehensive Community Infrastructure Grant Guidance for detailed instructions on the completing this attachment.

Applicants are required to provide this attachment as an Excel file, and not to convert it to a PDF when submitting a copy of their application on an appropriate electronic medium, such as a DVD, CD-ROM, or flash drive. Applicants may make adjustments to the format of the templates as necessary to provide the most effective presentation of the data for their specific project, but should not remove major headings (*e.g.* Revenues and Expenses on the Income Statement) or provide less detailed information than would be required to complete the provided templates.

DPS Income Statement

	Forecast Period							
	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8
Revenues								
Broadband Offerings								
Wholesale Data	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Retail Data	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Dark Fiber	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Collocation	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Other (list specific services)	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Other Network Driven Revenues								
Video Services	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Voice Services (local/toll/long distance)	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Other (list specific services)	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Universal Service Fund	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Installation Revenues	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Other Revenues	\$ 24,796,790	\$ 23,509,450	\$ 22,333,978	\$ 21,217,279	\$ 20,156,415	\$ 19,148,594	\$ 18,191,165	\$ 17,281,606
Total Revenues	\$ 24,796,790	\$ 23,509,450	\$ 22,333,978	\$ 21,217,279	\$ 20,156,415	\$ 19,148,594	\$ 18,191,165	\$ 17,281,606
Expenses								
Backhaul	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Network Maintenance/Monitoring	\$ 36,992,268	\$ 20,751,230	\$ 21,103,557	\$ 21,103,557	\$ 21,103,557	\$ 16,328,807	\$ 17,684,310	\$ 13,280,212
Utilities	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Leasing	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Sales/Marketing	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Customer Care	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Billing	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Corporate G&A	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Other Operating Expense	\$ 8,279,327	\$ 7,092,877	\$ 7,280,041	\$ 7,393,715	\$ 7,513,045	\$ 7,638,950	\$ 7,771,539	\$ 7,911,197
Total	\$ 45,271,595	\$ 27,844,107	\$ 28,383,598	\$ 28,497,272	\$ 28,616,602	\$ 23,967,757	\$ 25,455,849	\$ 21,191,409
EBITDA	\$ (20,474,805)	\$ (4,334,657)	\$ (6,049,620)	\$ (7,279,993)	\$ (8,460,187)	\$ (4,819,163)	\$ (7,264,684)	\$ (3,909,802)
Depreciation	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Amortization	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Earnings Before Interest and Taxes	\$ (20,474,805)	\$ (4,334,657)	\$ (6,049,620)	\$ (7,279,993)	\$ (8,460,187)	\$ (4,819,163)	\$ (7,264,684)	\$ (3,909,802)
Interest Expense	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Income Before Taxes	\$ (20,474,805)	\$ (4,334,657)	\$ (6,049,620)	\$ (7,279,993)	\$ (8,460,187)	\$ (4,819,163)	\$ (7,264,684)	\$ (3,909,802)
Property Tax	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Income Taxes	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Net Income	\$ (20,474,805)	\$ (4,334,657)	\$ (6,049,620)	\$ (7,279,993)	\$ (8,460,187)	\$ (4,819,163)	\$ (7,264,684)	\$ (3,909,802)

NPV/IRR Table

	Net Present Value	Internal Rate of Return
Without BTOP Funding		
With BTOP Funding		

Revenue Assumptions

Factor	Specific Metric Used in Analysis	Rationale (Cite Basis)
Customers Passed		
Anchor Institutions - Segment A		
Anchor Institutions - Segment B		
Businesses		
Households		
Last Mile Providers		
Other		
Take Rate (should likely vary across 8-Year Forecast)		
Anchor Institutions - Segment A		
Anchor Institutions - Segment B		
Businesses		
Households		
Last Mile Providers		
Direct Customer Connections		
Customer Segment A		
Customer Segment B		
Other		
Average Revenue per User (may vary across 8-year forecast)		
Anchor Institutions - Segment A		
Anchor Institutions - Segment B		
Businesses		
Households		
Last Mile Providers		
Other		

Expense Assumptions

Factor	Specific Metric Used in Analysis	Rationale (Cite Basis)
Network Expenses		
Backhaul		
Maintenance	Based on contract	

Utilities		
Leasing		
Depreciation		
Other		
Sales & Marketing		
Advertising		
Commissions		
Salaries		
Other		
Customer Care & Billing		
Systems		
Personnel		
Other		
General & Administrative		
Professional Services		
Insurance		
Non-Network Utilities		
Travel		
Supplies		
Miscellaneous		
Interest Expenses		
Debt Instrument A		
Debt Instrument B		
Taxes		
Federal Tax Rate		
Other Tax Rates		

DPS - Income Statement	Historical	
	2008	2009
Revenues		
Network Services Revenues:		
Local Voice Service	\$ -	\$ -
Broadband Data	\$ -	\$ -
Video Services	\$ -	\$ -
Universal Service Fund	\$ -	\$ -
Toll Service/Long Distance Voice	\$ -	\$ -
Installation Revenues	\$ -	\$ -
Other Operating Revenues	\$ 19,251,755.73	\$ 21,894,956.94
Other Revenues	\$ -	\$ -
Uncollectible Revenues	\$ -	\$ -
Total Revenues	\$ 19,251,755.73	\$ 21,894,956.94
Expenses		
Backhaul	\$ -	\$ -
Network Maintenance/Monitoring	\$ 3,732,334.65	\$ 2,738,745.75
Utilities	\$ 36,710.32	\$ 77,650.82
Leasing	\$ -	\$ -
Sales/Marketing Customer Care	\$ -	\$ -
Billing	\$ -	\$ -
Corporate G&A	\$ -	\$ -
Other Operating Expense	\$ 12,770,408.76	\$ 11,304,972.07
Total	\$ 16,539,453.73	\$ 14,121,368.64
EBITDA	\$ 2,712,302.00	\$ 7,773,588.30
Depreciation	\$ -	\$ -
Amortization	\$ -	\$ -
Earnings Before Interest and Taxes	\$ 2,712,302.00	\$ 7,773,588.30
Interest Expense - New RUS Debt	\$ -	\$ -
Interest Expense - Existing RUS Debt	\$ -	\$ -
Interest Expense - Other	\$ -	\$ -
Income Before Taxes	\$ 2,712,302.00	\$ 7,773,588.30
Property Tax	\$ -	\$ -
Income Taxes	\$ -	\$ -
Net Income	\$ 2,712,302.00	\$ 7,773,588.30

CEN - Income Statement

	2008	2009
Revenues		
Network Services Revenues:		
Local Voice Service	\$ -	\$ -
Broadband Data	\$ -	\$ -
Video Services	\$ -	\$ -
Network Access Service Revenues	\$ -	\$ -
Universal Service Fund	\$ -	\$ -
Toll Service/Long Distance Voice	\$ -	\$ -
Installation Revenues	\$ -	\$ -
Other Operating Revenues	\$ 1,314,592.50	\$ 2,841,290.00
Other Revenues	\$ -	\$ -
Uncollectible Revenues	\$ -	\$ -
Total Revenues	\$ 1,314,592.50	\$ 2,841,290.00
Expenses		
Backhaul	\$ -	\$ -
Network Maintenance/Monitoring	\$ 1,043,510.14	\$ 724,539.36
Utilities	\$ 6,227,714.20	\$ 4,593,738.41
Leasing	\$ 251,573.51	\$ 410,996.78
Sales/Marketing Customer Care	\$ -	\$ -
Billing	\$ -	\$ -
Corporate G&A	\$ -	\$ -
Other Operating Expense	\$ 496,858.26	\$ 446,203.70
Total	\$ 8,019,656.11	\$ 6,175,478.25
EBITDA	\$ (6,705,063.61)	\$ (3,334,188.25)
Depreciation	\$ -	\$ -
Amortization	\$ -	\$ -
Earnings Before Interest and Taxes	\$ (6,705,063.61)	\$ (3,334,188.25)
Interest Expense - New RUS Debt	\$ -	\$ -
Interest Expense - Existing RUS Debt	\$ -	\$ -
Interest Expense - Other	\$ -	\$ -
Income Before Taxes	\$ (6,705,063.61)	\$ (3,334,188.25)
Property Tax	\$ -	\$ -
Income Taxes	\$ -	\$ -
Net Income	\$ (6,705,063.61)	\$ (3,334,188.25)

*Most funding for CEN comes from State of Connecticut General Funds and Bond Funds. These funds do not generate any revenue. The revenue shown comes from limited Universities and Libraries. The goal of the fund creating revenue is not to recover a profit, but to only recover the cost of providing services.

CEN - Balance Sheet		
	2008	2009
Assets		
<i>Current Assets</i>		
Cash	\$ 3,499,297.50	\$ 5,984,367.50
Marketable Securities		\$ -
Accounts Receivable	\$ -	\$ -
Notes Receivable	\$ -	\$ -
Inventory	\$ -	\$ -
Prepayments	\$ -	\$ -
Other Current Assets	\$ (2,852,210.35)	\$ (4,729,666.62)
Total Current Assets	\$ 647,087.15	\$ 1,254,700.88
<i>Non Current Assets</i>		
Long-Term Investments	\$ -	\$ -
Amortizable Asset	\$ -	\$ -
Plant in Service	\$ -	\$ -
Less: Accumulated Depreciation	\$ -	\$ -
Total Non-Current Assets	\$ -	\$ -
Total Assets	\$ 647,087.15	\$ 1,254,700.88
Liabilities and Owner's Equity		
Liabilities		
<i>Current Liabilities</i>		
Accounts Payable		\$ -
Notes Payable	\$ -	\$ -
Current Portion - Total RUS Debt	\$ -	\$ -
Current Portion - Other Debt	\$ -	\$ -
Other Current Liabilities	\$ -	\$ -
Total Current Liabilities	\$ -	\$ -
<i>Long-Term Liabilities</i>		
Existing RUS Debt	\$ -	\$ -
Proposed RUS Debt	\$ -	\$ -
Existing non - RUS Debt	\$ -	\$ -
Total Long-Term Liabilities	\$ -	\$ -
Total Liabilities	\$ -	\$ -
Owner's Equity		
Capital Stock	\$ -	\$ -
Additional Paid-in-Capital	\$ -	\$ -
Patronage Capital Credits	\$ -	\$ -
Retained Earnings	\$ (647,087.15)	\$ (1,254,700.88)
Total Equity	\$ (647,087.15)	\$ (1,254,700.88)
Total Liabilities and Owner's Equity	\$ -	\$ (1,254,700.88)

* Above Balance Sheet is only for the trustee ED-Net fund 12060-35264. This is the only CEN funding source that generates any revenue the remaining funds are either State of Connecticut General Funds or Bond Funds. The goal of the fund is not to recover a profit, but to only recover the cost of providing services. As a result, the Cash on Hand is normally minimal.

BTOP Comprehensive Community Infrastructure Pro Forma Financial Projections

Please complete the Income Statement, Balance Sheet, Cash Flows, and NPV-IRR Table worksheets. Key assumptions used to formulate these financial projections should be listed in the Key Assumptions worksheet. Please note that these are **project-specific** projections, in contrast to the historical financial information which is provided at the organizational level.

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NPV/IRR Table

	Net Present Value	Internal Rate of Return
Without BTOP Funding		
With BTOP Funding		

Revenue Assumptions

Factor	Specific Metric Used in Analysis	Rationale (Cite Basis)
Customers Passed		
Anchor Institutions - Segment A		
Anchor Institutions - Segment B		
Businesses		
Households		
Last Mile Providers		
Other		
Take Rate (should likely vary across 8-Year Forecast)		
Anchor Institutions - Segment A		
Anchor Institutions - Segment B		
Businesses		
Households		
Last Mile Providers		
Direct Customer Connections		
Customer Segment A		
Customer Segment B		
Other		
Average Revenue per User (may vary across 8-year forecast)		
Anchor Institutions - Segment A		
Anchor Institutions - Segment B		
Businesses		
Households		
Last Mile Providers		
Other		Revenue is not earned for this portion of the project.

Expense Assumptions

Factor	Specific Metric Used in Analysis	Rationale (Cite Basis)
Network Expenses		
Backhaul		
Maintenance		Annual expense based on contract.

Utilities		
Leasing		
Depreciation		
Other		
Sales & Marketing		
Advertising		
Commissions		
Salaries		
Other		
Customer Care & Billing		
Systems		
Personnel		
Other		
General & Administrative		
Professional Services		
Insurance		
Non-Network Utilities		
Travel		
Supplies		
Miscellaneous		
Interest Expenses		
Debt Instrument A		
Debt Instrument B		
Taxes		
Federal Tax Rate		
Other Tax Rates		

BTOP Comprehensive Community Infrastructure Subscriber Estimates Template

Please complete the complete the Subscriber Estimates worksheet.

All applicants should indicate their 8-year subscriber forecasts with a breakdown by type of subscriber (residential/individual, businesses, community anchor institutions, third party service providers) and service offerings. The names of the service offerings should match those provided in the Service Offering and Competitor Data attachment, enabling reviewers to easily cross-reference between the two documents. The Year 0 column should be used to denote any existing customers within the Proposed Funded Service Area. In addition, applicants that project that they will have third party service provider customers should include a line for parties "Served by Third Party Service Providers," showing an estimate of how many residential/individual, community anchor institution, and business customers will be served by those service providers, as demonstrated in the example below. At the bottom of the table, applicants should provide customer totals across all service offerings, with and without customers indirectly served through a third party service provider (if applicable). Applicants should also include a brief discussion of their methodology for deriving these estimates.

In contrast to several other attachment templates in this application, the data provided via this template will NOT be subject to automated processing. Applicants are permitted to modify the template layout in order to provide the most effective presentation of the date for their specific project, but such modifications are generally discouraged. Applicants should, in any case, ensure that they provide at least as much detail as the provided templates requires. To the extent that you modify these templates, please ensure that the print layouts are adjusted so that rows do not break across pages in a manner that will be difficult to understand. It is recommended that you provide these documents in PDF format when submitting a copy of your application on an appropriate electronic medium, such as a DVD, CD-ROM, or flash drive.

EXAMPLE

Name of Service Offering	Customer Type	Year 0	Cumulative/ Net Add	Year 1				Year 2			
				Qtr 1	Qtr 2	Qtr 3	Qtr 4	Qtr 1	Qtr 2	Qtr 3	Qtr 4
Mega-Metro E - 100 Mbps	Community Anchor Inst.	0	Cumulative	0	0	0	0	5	10	17	26
			Net Add	0	0	0	0	5	5	7	9
	Business	0	Cumulative	0	0	0	0	12	27	52	82
			Net Add	0	0	0	0	12	15	25	30
	Third Party Service Provider	0	Cumulative	0	0	0	0	1	2	4	6
			Net Add	0	0	0	0	1	1	2	2
Served by Third Party Service Providers	Indirect - Res./Ind.	0	Cumulative	0	0	0	0	1000	3000	5000	10000
			Net Add	0	0	0	0	1000	2000	2000	5000
	Indirect - Business	0	Cumulative	0	0	0	0	2	8	18	30
			Net Add	0	0	0	0	2	6	10	12
	Indirect - Com. Anchor Inst.	0	Cumulative	0	0	0	0	0	2	3	5
			Net Add	0	0	0	0	0	2	1	2

Broadband Subscriber Estimates

Name of Service Offering	Customer Type	Year 0	Cumulative/ Net Add	Year 1				Year 2				Year 3				Year 4	
				Qtr 1	Qtr 2	Qtr 3	Qtr 4	Qtr 1	Qtr 2	Qtr 3	Qtr 4	Qtr 1	Qtr 2	Qtr 3	Qtr 4	Qtr 1	Qtr 2
Anchor Institution	Community Anchor Inst.	342	Cumulative	390	462	621	749	781	844	928	947	969	1009				
			Net Add	48	72	159	119	41	63	84	19	22	40				
			Cumulative														
			Net Add														
			Cumulative														
			Net Add														
			Cumulative														
			Net Add														
Cumulative Totals (excluding Indirect)	Residential/Individual		Total														
	Business		Total														
	Community Anchor Inst.	342	Total	390	462	621	749	781	844	928	947	969	1009				
	Third Party Service Provider		Total														
Cumulative Totals (including Indirect)	Residential/Individual		Total														
	Business		Total														
	Community Anchor Inst.	342	Total	390	462	621	749	781	844	928	947	969	1009				

Table of Customer Types

Residential/Individual
Business
Community Anchor Inst.
Third Party Service Provider
Indirect - Res./Ind.
Indirect - Business
Indirect - Com. Anchor Inst.

Explanation of Methodology:

Subscriber numbers are taken from the Detailed Build-Out Timeline. While there are future Community Anchor Institutions that may be connected after completion of the project, these numbers are unknown at this time.

Name of Service Offering	Customer Type	Year 4		Year 5				Year 6				Year 7				Year 8		
		Qtr 3	Qtr 4	Qtr 1	Qtr 2	Qtr 3	Qtr 4	Qtr 1	Qtr 2	Qtr 3	Qtr 4	Qtr 1	Qtr 2	Qtr 3	Qtr 4	Qtr 1	Qtr 2	Qtr 3
Anchor Institution	Community Anchor Inst.																	
Cumulative Totals (excluding Indirect)	Residential/Individual Business																	
	Community Anchor Inst.																	
	Third Party Service Provider																	
Cumulative Totals (including Indirect)	Residential/Individual Business																	
	Community Anchor Inst.																	

Table of Customer Types

Residential/Individual Business
Community Anchor Inst.
Third Party Service Provider
Indirect - Res./Ind.
Indirect - Business
Indirect - Com. Anchor Inst.

Name of Service Offering	Customer Type	Qtr 4
		Anchor Institution
Cumulative Totals (excluding Indirect)	Residential/Individual	
	Business	
	Community Anchor Inst.	
Cumulative Totals (including Indirect)	Third Party Service Provider	
	Residential/Individual	
	Business	
	Community Anchor Inst.	

Table of Customer Types

Residential/Individual
Business
Community Anchor Inst.
Third Party Service Provider
Indirect - Res./Ind.
Indirect - Business
Indirect - Com. Anchor Inst.



BTOP Application Attachment Instructions

Management Team and Organization Chart

Provide the resumes of the senior management team and project team members significant to the project's success. Please identify their years of experience and relevant expertise with projects of similar size, scope, and complexity. Please identify specific prior (or current) projects, dates, and outcomes that showcase the management team's track record as relevant to executing the project. In addition, provide an organizational chart that details the structure of your organization, including any parent, subsidiary, affiliate, or partner organizations.

It is recommended that you provide these documents in PDF format when submitting a copy of your application on an appropriate electronic medium, such as a DVD, CD-ROM, or flash drive.

BTOP Round 2
Supporting BOM

Project	Category	Product Number	Product Description	Qty	List Price	LIST EXT	CT Price @	CT Price EXT	Discount
CPSSDN - Phase 1		Xponders							
CPSSDN - Phase 1	Optical Transport	15454-10GE-XPE=	4x10GE Enhanced Crossponder	28	\$ 39,500	\$ 1,106,000	\$ 18,960.00	\$ 530,880.00	52.00%
CPSSDN - Phase 1	Optical Transport	15454-GE-XPE=	20 GBE ENHANCED CROSSPONDER	104	\$ 39,500	\$ 4,108,000	\$ 18,960.00	\$ 1,971,840.00	52.00%
CPSSDN - Phase 1	Optical Transport	ONS-XC-10G-SR-MM=	XFP - 10GE/10G FC - 850 SR - MM LC	70	\$ 2,000	\$ 140,000	\$ 960.00	\$ 67,200.00	52.00%
CPSSDN - Phase 1	Optical Transport	ONS-XC-10G-60.6=	XFP - OC-192/STM64/10GE, 1560.61, 100 GHz, LC	264	\$ 18,000	\$ 4,752,000	\$ 8,640.00	\$ 2,280,960.00	52.00%
CPSSDN - Phase 1	Optical Transport	ONS-SE-ZE-EL=	SFP - 10/100/1000 Ethernet BaseT Multi-rate Copper RJ45	312	\$ 440	\$ 137,280	\$ 211.20	\$ 65,894.40	52.00%
CPSSDN - Phase 1	Optical Transport	Sub-Total				\$ 10,243,280		\$ 4,916,774.40	
CPSSDN - Phase 1		ROADM							
CPSSDN - Phase 1	Optical Transport	15454-40-SMR 1-C=	40Chs Single Module ROADM with integrated Optical PRE Amplifier	192	\$ 34,000	\$ 6,528,000	\$ 16,320.00	\$ 3,133,440.00	52.00%
CPSSDN - Phase 1	Optical Transport	15454-40-SMR 2-C=	40Chs Single Module ROADM with integrated Optical PRE, Boost Amplifier	30	\$ 69,000	\$ 2,070,000	\$ 33,120.00	\$ 993,600.00	52.00%
CPSSDN - Phase 1	Optical Transport	15454-PP-4-SMR=	2RU 4-Degree SM ROADM Mesh Patch Panel	7	\$ 8,000	\$ 56,000	\$ 3,840.00	\$ 26,880.00	52.00%
CPSSDN - Phase 1	Optical Transport	15216-MD-40-ODD=	ONS 15216 40ch Mux Demux Patch Panel Odd	52	\$ 20,000	\$ 1,040,000	\$ 9,600.00	\$ 499,200.00	52.00%
CPSSDN - Phase 1	Optical Transport	15216-FL-SA=	FlexLayer 4 Slot Shelf Assembly	85	\$ 1,467	\$ 124,695	\$ 704.16	\$ 59,853.60	52.00%
CPSSDN - Phase 1	Optical Transport	15216-FLB-2-60.6=	ITU-100 GHz 2-Ch, FlexMod-1560.61, 1559.79	170	\$ 2,567	\$ 436,390	\$ 1,232.16	\$ 209,467.20	52.00%
CPSSDN - Phase 1	Optical Transport	Sub-Total				\$ 10,255,085		\$ 4,922,440.80	
CPSSDN - Phase 1		Chassis and OSC							
CPSSDN - Phase 1	Optical Transport	15454-M6-SA=	M6 Chassis, 6 RU ANSI	109	\$ 1,950	\$ 212,550	\$ 936.00	\$ 102,024.00	52.00%
CPSSDN - Phase 1	Optical Transport	15454-M6-FTA=	Shelf Controlled Cooling Fan Tray, ANSI, HPCFM, I-Temp	111	\$ 450	\$ 49,950	\$ 216.00	\$ 23,976.00	52.00%
CPSSDN - Phase 1	Optical Transport	15454-M6-AC=	AC Power Supply	222	\$ 750	\$ 166,500	\$ 360.00	\$ 79,920.00	52.00%
CPSSDN - Phase 1	Optical Transport	15454-M6-LCD=	LCD/Memory Unit	111	\$ 150	\$ 16,650	\$ 72.00	\$ 7,992.00	52.00%
CPSSDN - Phase 1	Optical Transport	15454-M6-ECU=	6 service slot MSTP chassis external cable connections	111	\$ 300	\$ 33,300	\$ 144.00	\$ 15,984.00	52.00%
CPSSDN - Phase 1	Optical Transport	15454-M6-BRKT19=	no deflectors	111	\$ 200	\$ 22,200	\$ 96.00	\$ 10,656.00	52.00%
CPSSDN - Phase 1	Optical Transport	15454-M-TNC-K9=	Transport Node Controller	222	\$ 15,000	\$ 3,330,000	\$ 7,200.00	\$ 1,598,400.00	52.00%
CPSSDN - Phase 1	Optical Transport	ONS-SC-OSC-ULH=	SFP - OC3/STM 1/FE Optical Service Channel SFPs ULH	222	\$ 3,000	\$ 666,000	\$ 1,440.00	\$ 319,680.00	52.00%
CPSSDN - Phase 1	Optical Transport	Sub-Total				\$ 4,497,150		\$ 2,158,632.00	
CPSSDN - Phase 1		Misc							
CPSSDN - Phase 1	Optical Transport	15454-R9.0.0SWK9=	Rel. 9.0.0 Feature Pkg., CD, Right To Use License	137	\$ 1,995	\$ 273,315	\$ 957.60	\$ 131,191.20	52.00%
CPSSDN - Phase 1	Optical Transport	15454-MPO-MPO-2=	Multi-fiber patchcord - MPO to MPO - 2m	7	\$ 750	\$ 5,250	\$ 360.00	\$ 2,520.00	52.00%
CPSSDN - Phase 1	Optical Transport	15454-MPO-MPO-6=	Multi-fiber patchcord - MPO to MPO - 6m	7	\$ 750	\$ 5,250	\$ 360.00	\$ 2,520.00	52.00%
CPSSDN - Phase 1	Optical Transport	15454-MPO-MPO-8=	Multi-fiber patchcord - MPO to MPO - 8m	14	\$ 750	\$ 10,500	\$ 360.00	\$ 5,040.00	52.00%
CPSSDN - Phase 1	Optical Transport	15454-LC-LC-2=	Fiber patchcord - LC to LC - 2m	1128	\$ 90	\$ 101,520	\$ 43.20	\$ 48,729.60	52.00%
CPSSDN - Phase 1	Optical Transport	15216-ATT-LC-15=	Bulk Attenuator - LC Connector - 15dB	11	\$ 12	\$ 132	\$ 5.76	\$ 63.36	52.00%
CPSSDN - Phase 1	Optical Transport	15216-ATT-LC-10=	Bulk Attenuator - LC Connector - 10dB	26	\$ 1	\$ 26	\$ 0.48	\$ 12.48	52.00%
CPSSDN - Phase 1	Optical Transport	15216-ATT-LC-12=	Bulk Attenuator - LC Connector - 12dB	9	\$ 10	\$ 90	\$ 4.80	\$ 43.20	52.00%
CPSSDN - Phase 1	Optical Transport	CTM-9.0-NE200-K9	CTM R9.0 - 200 NE Max, 20 Client Max, SW CDs, Docs	1	\$ 34,550	\$ 34,550	\$ 16,584.00	\$ 16,584.00	52.00%
CPSSDN - Phase 1	Optical Transport	CTM-9.0-AUTH	CTM R9.0 - External Authentication License	1	\$ 10,000	\$ 10,000	\$ 4,800.00	\$ 4,800.00	52.00%
CPSSDN - Phase 1	Optical Transport	Sub-Total				\$ 440,633		\$ 211,503.84	
CPSSDN - Phase 1		DCU							
CPSSDN - Phase 1	Optical Transport	15216-DCU-SA=	Mechanical shelf (housing 2 DCM)	169	\$ 560	\$ 94,640	\$ 268.80	\$ 45,427.20	52.00%
CPSSDN - Phase 1	Optical Transport	15216-DCU-100=	DCF of -100 ps/nm	226	\$ 3,100	\$ 700,600	\$ 1,488.00	\$ 336,288.00	52.00%
CPSSDN - Phase 1	Optical Transport	15216-DCU-350=	DCF of -350 ps/nm and 4dB loss	28	\$ 4,900	\$ 137,200	\$ 2,352.00	\$ 65,856.00	52.00%
CPSSDN - Phase 1	Optical Transport	15216-DCU-450=	DCF of - 450 ps/nm	5	\$ 5,600	\$ 28,000	\$ 2,688.00	\$ 13,440.00	52.00%
CPSSDN - Phase 1	Optical Transport	15216-DCU-550=	DCF of - 550 ps/nm	9	\$ 6,300	\$ 56,700	\$ 3,024.00	\$ 27,216.00	52.00%
CPSSDN - Phase 1	Optical Transport	Sub-Total				\$ 1,017,140		\$ 488,227.20	
						List		CT Price	

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Project	Category	Product Number	Product Description	Qty	List Price	LIST EXT	CT Price @	CT Price EXT	Discount
CPSSDN - Phase 1	Optical Transport					Total = \$ 26,453,288		\$ 12,697,578.24	
CPSSDN - Phase 2	Optical Transport	15454-10GE-XPE=	4x10GE Enhanced Crossponder (includes 1 spare)	29	39,500.00	1,145,500.00	\$ 18,960.00	\$ 549,840.00	52.00%
CPSSDN - Phase 2	Optical Transport	15454-GE-XPE=	20 GBE ENHANCED CROSSPONDER (includes 1 spare)	105	39,500.00	4,147,500.00	\$ 18,960.00	\$ 1,990,800.00	52.00%
CPSSDN - Phase 2	Optical Transport	15216-FLB-2-60.6=	ITU-100 GHz 2-Ch, FlexMod-1560.61, 1559.79	170	2,567.00	436,390.00	\$ 1,232.16	\$ 209,467.20	52.00%
CPSSDN - Phase 2	Optical Transport	ONS-XC-10G-SR-MM=	XFP - 10GE/10G FC - 850 SR - MM LC (includes 1 spare)	71	2,000.00	142,000.00	\$ 960.00	\$ 68,160.00	52.00%
CPSSDN - Phase 2	Optical Transport	ONS-XC-10G-59.7=	XFP - OC-192/STM64/10GE, 1559.79, 100 GHz, LC (includes 2 spares)	210	18,000.00	3,780,000.00	\$ 8,640.00	\$ 1,814,400.00	52.00%
CPSSDN - Phase 2	Optical Transport	ONS-SE-G2F-LX=	SFP - GE/1G-FC/2G-FC/HDTV - 1310nm - SM - LC	480	995.00	477,600.00	\$ 477.60	\$ 229,248.00	52.00%
CPSSDN - Phase 2	Optical Transport	Sub Total						\$ 4,861,915.20	
CPSSDN - Phase 2	Switching	WS-C3750G-24PS-E	Catalyst 3750 24 10/100/1000T PoE + 4 SFP + IPS Image	450	\$ 11,790.00	5,305,500.00	\$ 5,659.20	\$ 2,546,640.00	52.00%
CPSSDN - Phase 2	Switching	GLC-LH-SM	GE SFP, LC connector LX/LH transceiver	450	\$ 995.00	447,750.00	\$ 477.60	\$ 214,920.00	52.00%
CPSSDN - Phase 2	Switching	CAB-STACK-50CM	Cisco StackWise 50CM Stacking Cable	450	included	included	included	included	included
CPSSDN - Phase 2	Switching	CAB-16AWG-AC	AC Power cord, 16AWG	450	included	included	included	included	included
CPSSDN - Phase 2	Switching	Sub Total						\$ 2,761,560.00	
CPSSDN - Phase 1	Other	VSAT Equipment	I-direct VSAT Site Equipment	111	\$ 33,338.74	\$ 3,700,600.14	\$ 16,669.37	\$ 1,850,300.07	
		Sub Total						\$ 1,850,300.07	
CEN	Switching	ME-C6524GT-8S	Cisco ME6524 Switch - 24 10/100/1000 + 8GE SFP, Fan tray	120	\$ 17,000.00	2,040,000.00	\$ 8,160.00	\$ 979,200.00	52.00%
CEN	Switching	MEM-XCEF720-1GB	Catalyst 6500 1GB DDR, xCEF720 (67xx interface, DFC3BXL)	120	\$ 9,600.00	1,152,000.00	\$ 4,608.00	\$ 552,960.00	52.00%
CEN	Switching	MEM-MSFC3-1GB	1GB Mem for Sup720, Sup720-3B and MSFC2A	120	\$ 4,800.00	576,000.00	\$ 2,304.00	\$ 276,480.00	52.00%
CEN	Switching	PWR-400W-AC	400W AC PS for Cisco ME6524 Switches	240	\$ 1,500.00	360,000.00	\$ 720.00	\$ 172,800.00	52.00%
CEN	Switching	CAB-AC-125V/13A	Power Cord for North America, 125VAC/13A	240	included	included	included	included	included
CEN	Switching	S523AIK9L-12233SXI	Cisco ME 6524 IOS ADVANCED IP SERVICES SSH LAN ONLY	120	\$ 10,000.00	1,200,000.00	\$ 4,800.00	\$ 576,000.00	52.00%
CEN	Switching	MEM-C6K-CPTFL512M	Catalyst 6500 Sup720/Sup32 Compact Flash Mem 512MB	120	included	included	included	included	included
CEN	Switching		TOTAL FOR "SWITCHING" CATEGORY					\$ 2,567,440.00	
CEN	Routing	CISCO7609-S	Cisco 7609-S Chassis including fans	33	included	included	included	included	included
CEN	Routing	7609S-RSP720CXLP	Cisco 7609S Chassis, 9-slot, RSP720-3CXLP	33	\$ 53,500.00	1,765,500.00	\$ 25,680.00	\$ 847,440.00	52.00%
CEN	Routing	RSP720-3CXLP-GE	Cisco 7600 Route Switch Processor 720Gbps fabric, PFC3CXLP, GE	33	included	included	included	included	included
CEN	Routing	MEM-RSP720-CF512M	C7600 RSP720 Compact Flash memory	33	\$ 995.00	32,835.00	\$ 477.60	\$ 15,760.80	52.00%
CEN	Routing	S764AEK9-12233SRD	Cisco 7600-RSP720 IOS ADVANCED ENTERPRISE SERVICES SSH	33	\$ 15,000.00	495,000.00	\$ 7,200.00	\$ 237,600.00	52.00%
CEN	Routing								
CEN	Routing	3000W-AC	3000W AC Power Supply (select cable)	33	included	included	included	included	included
CEN	Routing	WS-CAC-3000W	Catalyst 6500 3000W AC power supply	33	included	included	included	included	included
CEN	Routing	WS-CAC-3000W	Catalyst 6500 3000W AC power supply	33	\$ 3,000.00	99,000.00	\$ 1,440.00	\$ 47,520.00	52.00%
CEN	Routing	CAB-AC-C6K-TWLK	Power Cord, 250Vac 16A, twist lock NEMA L6-20 plug, US	66	included	included	included	included	included
CEN	Routing								
CEN	Routing	7600-ES+4TG3CXLP	7600 ES+ Line Card, 4x10GE XFP with DFC 3CXLP	37	\$ 155,000.00	5,735,000.00	\$ 74,400.00	\$ 2,752,800.00	52.00%
CEN	Routing	76-ES+ADVIP-40G	ES+ 40G Adv License, with MVPN, IPv6, 6vPE, L3 IP/MPLS VPN	37	\$ 75,000.00	2,775,000.00	\$ 36,000.00	\$ 1,332,000.00	52.00%
CEN	Routing								
CEN	Routing	XFP-10GER-192IR+	Cisco Multirate 10GBASE-ER and OC-192/STM-64 IR-2 XFP Module	66	\$ 10,000.00	660,000.00	\$ 4,800.00	\$ 316,800.00	52.00%
CEN	Routing	XFP-10GLR-OC192SR	Multirate XFP module for 10GBASE-LR and OC192 SR-1	40	\$ 4,000.00	160,000.00	\$ 1,920.00	\$ 76,800.00	52.00%
CEN	Routing	XFP-10GZR-OC192LR	10GBASE-ZR and OC192 LR2 XFP Module	49	\$ 16,000.00	784,000.00	\$ 7,680.00	\$ 376,320.00	52.00%
CEN	Routing								

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Project	Category	Product Number	Product Description	Qty	List Price	LIST EXT	CT Price @	CT Price EXT	Discount
CEN	Routing	7600-ES+40G3CX	7600 ES+ Line Card, 40xGE SFP with DFC 3CX	37	\$ 115,000.00	4,255,000.00	\$ 55,200.00	\$ 2,042,400.00	52.00%
CEN	Routing	76-ES+ADVIP-40G	ES+ 40G Adv License, with MVPN, IPv6, 6vPE, L3 IP/MPLS VPN	37	\$ 75,000.00	2,775,000.00	\$ 36,000.00	\$ 1,332,000.00	52.00%
CEN	Routing								
CEN	Routing	SFP-GE-L	1000BASE-LXLH SFP (DOM)	300	\$ 1,100.00	330,000.00	\$ 528.00	\$ 158,400.00	52.00%
CEN	Routing	SFP-GE-Z	1000BASE-ZX Gigabit Ethernet SFP (DOM)	160	\$ 3,995.00	599,250.00	\$ 1,917.60	\$ 287,640.00	52.00%
CEN	Routing								
CEN	Routing	WS-X6748-GE-TX	Cat6500 48-port 10/100/1000 GE Mod: fabric enabled, RJ-45	40	\$ 15,000.00	600,000.00	\$ 7,200.00	\$ 288,000.00	52.00%
CEN	Routing	WS-F6700-DFC3CX	Catalyst 6500 Dist Fwd Card- 3CX, for WS-X67xx	40	\$ 15,000.00	600,000.00	\$ 7,200.00	\$ 288,000.00	52.00%
CEN	Routing	MEM-XCEF720-1GB	Catalyst 6500 1GB DDR, xCEF720 (67xx interface, DFC3BXL)	40	included	included	included	included	included
CEN	Routing		TOTAL FOR "ROUTING" CATEGORY					\$ 10,399,480.80	
DOIT - POP2	Optical Transport	UCONN End of the Fiber							
DOIT - POP2	Optical Transport	DWDM-X2-38.98=	DWDM X2 1538.98 nm X2 (100 GHz ITU grid)	1	\$ 20,000.00	\$ 20,000.00	\$ 9,600.00	\$ 9,600.00	52.00%
DOIT - POP2	Optical Transport	DWDM-X2-39.77=	DWDM X2 1539.77 nm X2 (100 GHz ITU grid)	1	\$ 20,000.00	\$ 20,000.00	\$ 9,600.00	\$ 9,600.00	52.00%
DOIT - POP2	Optical Transport	CWDM-CHASSIS-2=	2 Slot Chassis for CWDM Mux Plug in Modules	1	\$ 500.00	\$ 500.00	\$ 240.00	\$ 240.00	52.00%
DOIT - POP2	Optical Transport	EWDM-MUX8=	8-channels EWDM MUX/DEMUX Module	1	\$ 12,000.00	\$ 12,000.00	\$ 5,760.00	\$ 5,760.00	52.00%
DOIT - POP2	Optical Transport	EWDM-OA=	EWDM Optical Amplifier	1	\$ 12,000.00	\$ 12,000.00	\$ 5,760.00	\$ 5,760.00	52.00%
DOIT - POP2	Optical Transport								
DOIT - POP2	Optical Transport	DOIT End of the Fiber							
DOIT - POP2	Optical Transport	DWDM-X2-38.98=	DWDM X2 1538.98 nm X2 (100 GHz ITU grid)	1	\$ 20,000.00	\$ 20,000.00	\$ 9,600.00	\$ 9,600.00	52.00%
DOIT - POP2	Optical Transport	DWDM-X2-39.77=	DWDM X2 1539.77 nm X2 (100 GHz ITU grid)	1	\$ 20,000.00	\$ 20,000.00	\$ 9,600.00	\$ 9,600.00	52.00%
DOIT - POP2	Optical Transport	CWDM-CHASSIS-2=	2 Slot Chassis for CWDM Mux Plug in Modules	1	\$ 500.00	\$ 500.00	\$ 240.00	\$ 240.00	52.00%
DOIT - POP2	Optical Transport	EWDM-MUX8=	8-channels EWDM MUX/DEMUX Module	1	\$ 12,000.00	\$ 12,000.00	\$ 5,760.00	\$ 5,760.00	52.00%
DOIT - POP2	Optical Transport	EWDM-OA=	EWDM Optical Amplifier	1	\$ 12,000.00	\$ 12,000.00	\$ 5,760.00	\$ 5,760.00	52.00%
DOIT - POP2	Optical Transport		TOTAL FOR OPTICAL TRANSPORT CATEGORY					\$ 61,920.00	
DOIT - POP2	Switching	WS-C6506-E	Catalyst 6500 Enhanced 6-slot chassis, 12RU, no PS, no Fan Tray	1	\$ 5,500.00	\$ 5,500.00	\$ 2,640.00	\$ 2,640.00	52.00%
DOIT - POP2	Switching	SV33AEK9-12233SXH	Cisco CAT6000-VSS720 IOS ADVANCED ENTERPRISE SERVICES SSH	1	\$ 15,000.00	\$ 15,000.00	\$ 7,200.00	\$ 7,200.00	52.00%
DOIT - POP2	Switching	VS-S720-10G-3C	Cat 6500 Supervisor 720 with 2 ports 10GbE and MSFC3 PFC3C	1	\$ 38,000.00	\$ 38,000.00	\$ 18,240.00	\$ 18,240.00	52.00%
DOIT - POP2	Switching	CF-ADAPTER-SP	SP adapter with compact flash for SUP720	1	included	included	included	included	included
DOIT - POP2	Switching	VS-S720-10G-3C	Cat 6500 Supervisor 720 with 2 ports 10GbE and MSFC3 PFC3C	1	\$ 38,000.00	\$ 38,000.00	\$ 18,240.00	\$ 18,240.00	52.00%
DOIT - POP2	Switching	CF-ADAPTER-SP	SP adapter with compact flash for SUP720	1	included	included	included	included	included
DOIT - POP2	Switching	WS-X6748-GE-TX	Cat6500 48-port 10/100/1000 GE Mod: fabric enabled, RJ-45	1	\$ 15,000.00	\$ 15,000.00	\$ 7,200.00	\$ 7,200.00	52.00%
DOIT - POP2	Switching	WS-F6700-DFC3C	Catalyst 6500 Dist Fwd Card for WS-X67xx modules	1	\$ 7,500.00	\$ 7,500.00	\$ 3,600.00	\$ 3,600.00	52.00%
DOIT - POP2	Switching	SPA-IPSEC-SSC400-1	Cisco 6500/7600 IPSec VPN Bundle1: 1 IPSec VPN SPA + SSC-400	2	\$ 39,995.00	\$ 79,990.00	\$ 19,197.60	\$ 38,395.20	52.00%
DOIT - POP2	Switching	WS-X6748-GE-TX	Cat6500 48-port 10/100/1000 GE Mod: fabric enabled, RJ-45	1	\$ 15,000.00	\$ 15,000.00	\$ 7,200.00	\$ 7,200.00	52.00%
DOIT - POP2	Switching	WS-F6700-DFC3C	Catalyst 6500 Dist Fwd Card for WS-X67xx modules	1	\$ 7,500.00	\$ 7,500.00	\$ 3,600.00	\$ 3,600.00	52.00%
DOIT - POP2	Switching	WS-C6506-E-FAN	Catalyst 6500-E Chassis Fan Tray	1	\$ 495.00	\$ 495.00	\$ 237.60	\$ 237.60	52.00%
DOIT - POP2	Switching	WS-CAC-6000W	Cat6500 6000W AC Power Supply	2	\$ 5,000.00	\$ 10,000.00	\$ 2,400.00	\$ 4,800.00	52.00%
DOIT - POP2	Switching	CAB-7513AC	AC POWER CORD NORTH AMERICA (110V)	4	included	included	included	included	included
DOIT - POP2	Switching	VS-F6K-MSFC3	Catalyst 6500 Multilayer Switch Feature Card (MSFC) III	1	included	included	included	included	included
DOIT - POP2	Switching	VS-F6K-PFC3C	Catalyst 6500 Sup 720-10G Policy Feature Card 3C	1	included	included	included	included	included
DOIT - POP2	Switching	VS-S720-10G	Catalyst 6500 Supervisor 720 with 2 10GbE ports	1	included	included	included	included	included
DOIT - POP2	Switching	MEM-C6K-CPTFL1GB	Catalyst 6500 Compact Flash Memory 1GB	1	included	included	included	included	included
DOIT - POP2	Switching	BF-S720-64MB-RP	Bootflash for SUP720-64MB-RP	1	included	included	included	included	included
DOIT - POP2	Switching	VS-F6K-MSFC3	Catalyst 6500 Multilayer Switch Feature Card (MSFC) III	1	included	included	included	included	included

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Project	Category	Product Number	Product Description	Qty	List Price	LIST EXT	CT Price @	CT Price EXT	Discount
DOIT - POP2	Switching	VS-F6K-PFC3C	Catalyst 6500 Sup 720-10G Policy Feature Card 3C	1	included	included	included	included	included
DOIT - POP2	Switching	VS-S720-10G	Catalyst 6500 Supervisor 720 with 2 10GbE ports	1	included	included	included	included	included
DOIT - POP2	Switching	MEM-C6K-CPTFL1GB	Catalyst 6500 Compact Flash Memory 1GB	1	included	included	included	included	included
DOIT - POP2	Switching	BF-S720-64MB-RP	Bootflash for SUP720-64MB-RP	1	included	included	included	included	included
DOIT - POP2	Switching	MEM-XCEF720-512M	Cat 6500 512MB DDR, xCEF720 (67xx interface, DFC3A/DFC3B)	1	included	included	included	included	included
DOIT - POP2	Switching	7600-SSC-400	Cisco 7600/6500 Services SPA Carrier Card (6 Gbps)	1	included	included	included	included	included
DOIT - POP2	Switching	SPA-IPSEC-2G	Cisco 7600 / Catalyst 6500 IPsec VPN SPA - DES/3DES/AES	1	included	included	included	included	included
DOIT - POP2	Switching	IOS-CVPN-CLIENT-K9	VPN Software Client for IOS Security Bundles	1	included	included	included	included	included
DOIT - POP2	Switching	MEM-XCEF720-512M	Cat 6500 512MB DDR, xCEF720 (67xx interface, DFC3A/DFC3B)	1	included	included	included	included	included
DOIT - POP2	Switching	GLC-LH-SM	GE SFP, LC connector LH transceiver	2	\$ 995.00	\$ 1,990.00	\$ 477.60	\$ 955.20	52.00%
DOIT - POP2	Switching	WS-C3560E-24TD-E	Catalyst 3560E 24 10/100/1000+2*10GE(X2),265W,IPS s/w	1	\$ 9,990.00	9,990.00	\$ 4,795.20	\$ 4,795.20	52.00%
DOIT - POP2	Switching	S3560EVT-12235SE	CAT 3560E IOS UNIVERSAL W/O CRYPTO WITH WEB BASED DEV MGR	1	included	included	included	included	included
DOIT - POP2	Switching	CAB-AC	AC Power Cord (North America), C13, NEMA 5-15P, 2.1m	1	included	included	included	included	included
DOIT - POP2	Switching	CVR-X2-SFP-2	Two (2) Cisco TwinGig Converter Modules	1	included	included	included	included	included
DOIT - POP2	Switching	CVR-X2-SFP	Cisco TwinGig Converter Module	2	included	included	included	included	included
DOIT - POP2	Switching	GSS-4492R-K9	Global Site Selector	1	\$ 19,995.00	19,995.00	\$ 9,597.60	\$ 9,597.60	52.00%
DOIT - POP2	Switching	SF-GSS-V3.1-K9	GSS 3.1 Base Software	1	included	included	included	included	included
DOIT - POP2	Switching	CAB-AC	Power Cord,110V	1	included	included	included	included	included
DOIT - POP2	Switching	SF-GSS-DDOSLIC	GSS DDOS Software License	1	\$ 8,000.00	8,000.00	\$ 3,840.00	\$ 3,840.00	52.00%
DOIT - POP2	Switching		TOTAL FOR "SWITCHING" CATEGORY				\$ 130,540.80		
DOIT - POP2									
DOIT - POP2	Routing	ASR1002-5G-SEC/K9	ASR1002 VPN+FW Bundle w/ ESP-5G AESK9,License,4GB DRAM	3	\$ 60,000.00	180,000.00	\$ 28,800.00	\$ 86,400.00	52.00%
DOIT - POP2	Routing	SPA-3XOC3-ATM-V2	3 port OC-3c/STM-1 ATM Shared Port Adapter	3	\$ 21,000.00	63,000.00	\$ 10,080.00	\$ 30,240.00	52.00%
DOIT - POP2	Routing	SFP-OC3-IR1	OC3/STM1 SFP, Single-mode fiber, Intermediate Reach	6	\$ 800.00	4,800.00	\$ 384.00	\$ 2,304.00	52.00%
DOIT - POP2	Routing	ASR1002-PWR-AC	Cisco ASR1002 AC Power Supply	6	included	included	included	included	included
DOIT - POP2	Routing	CAB-AC-RA	Power Cord,110V, Right Angle	6	included	included	included	included	included
DOIT - POP2	Routing	MEMUSB-1024FT	1GB USB Flash Token	3	\$ 850.00	2,550.00	\$ 408.00	\$ 1,224.00	52.00%
DOIT - POP2	Routing	SFP-GE-T	1000BASE-T SFP (NEBS 3 ESD)	6	\$ 440.00	2,640.00	\$ 211.20	\$ 1,267.20	52.00%
DOIT - POP2	Routing	ASR1000-SPA	SPA for ASR1000; No Physical Part; For Tracking Only	3	included	included	included	included	included
DOIT - POP2	Routing	ASR1000-ESP5	ASR1K Embedded Services Processor,5Gbps,Crypto,ASR1002 only	3	included	included	included	included	included
DOIT - POP2	Routing	FLASR1-FW-RTU	Firewall Right-To-Use Feature Lic for ASR1000 Series	3	included	included	included	included	included
DOIT - POP2	Routing	FLASR1-IPSEC-RTU	Encryption Right-To-Use Feature Lic for ASR1000 Series	3	included	included	included	included	included
DOIT - POP2	Routing	SASR1R1-AESK9-23SR	Cisco ASR 1000 Series RP1 ADVANCED ENTERPRISE SERVICES	3	included	included	included	included	included
DOIT - POP2	Routing		TOTAL FOR "ROUTING" CATEGORY				\$ 121,435.20		
CPSSDN - NG911	Routing	ASR-9010-AC	ASR-9010 AC Chassis	3	\$ 12,100.00	36,300.00	\$ 5,808.00	\$ 17,424.00	52.00%
CPSSDN - NG911	Routing	ASR-9010-FAN	ASR-9010 Fan Tray	6	\$ 3,850.00	23,100.00	\$ 1,848.00	\$ 11,088.00	52.00%
CPSSDN - NG911	Routing	A9K-3KW-AC	3kW AC Power Module	9	\$ 2,800.00	25,200.00	\$ 1,344.00	\$ 12,096.00	52.00%
CPSSDN - NG911	Routing	CAB-AC-C6K-TWLK	Power Cord, 250Vac 16A, twist lock NEMA L6-20 plug, US	9	included	included	included	included	included
CPSSDN - NG911	Routing	A9K-RSP-4G	ASR9K Fabric, Controller 4G memory	3	\$ 32,000.00	96,000.00	\$ 15,360.00	\$ 46,080.00	52.00%
CPSSDN - NG911	Routing	A9K-K9-03.07	Cisco IOS XR IP/MPLS Core Software 3DES	3	\$ 15,000.00	45,000.00	\$ 7,200.00	\$ 21,600.00	52.00%
CPSSDN - NG911	Routing	A9K-4T-E	4-Port 10GE Extended Line Card, Requires XFPs	3	\$ 125,000.00	375,000.00	\$ 60,000.00	\$ 180,000.00	52.00%
CPSSDN - NG911	Routing	A9K-AIP-LIC-E	L3 Services Extended Line Card License, For use with -E Line	3	\$ 75,000.00	225,000.00	\$ 36,000.00	\$ 108,000.00	52.00%
CPSSDN - NG911	Routing	XFP-10GER-192IR+	Cisco Multirate 10GBASE-ER and OC-192/STM-64 IR-2 XFP Module	12	\$ 10,000.00	120,000.00	\$ 4,800.00	\$ 57,600.00	52.00%
CPSSDN - NG911	Routing	A9K-40GE-E	40-Port GE Extended Line Card, Requires SFPs	3	\$ 115,000.00	345,000.00	\$ 55,200.00	\$ 165,600.00	52.00%
CPSSDN - NG911	Routing	A9K-AIP-LIC-E	L3 Services Extended Line Card License, For use with -E Line	3	\$ 75,000.00	225,000.00	\$ 36,000.00	\$ 108,000.00	52.00%
CPSSDN - NG911	Routing	SFP-GE-L	1000BASE-LX/LH SFP (DOM)	120	\$ 1,100.00	132,000.00	\$ 528.00	\$ 63,360.00	52.00%
CPSSDN - NG911	Routing	ASR-9010-4P-KIT	ASR-9010 4 Post Mounting Kit	3	included	included	included	included	included

BTOP Round 2
Supporting BOM

Project	Category	Product Number	Product Description	Qty	List Price	LIST EXT	CT Price @	CT Price EXT	Discount
CPSSDN - NG911	Routing	A9K-LC-FILR	A9K Line Card Slot Filler	15	included	included	included	included	included
CPSSDN - NG911	Routing	ASR1002	ASR 1002 with 5Gbps Processor, Chassis,4 built-in GE, Dual P/S,4GB DRAM	112	\$ 18,000.00	2,016,000.00	\$ 8,640.00	\$ 967,680.00	52.00%
CPSSDN - NG911	Routing	SASR1R1-AESK9-24SR	Cisco ASR 1000 Series RP1 ADVANCED ENTERPRISE SERVICES	112	\$ 10,000.00	1,120,000.00	\$ 4,800.00	\$ 537,600.00	52.00%
CPSSDN - NG911	Routing	ASR1002-PWR-AC	Cisco ASR1002 AC Power Supply	224	included	included	included	included	included
CPSSDN - NG911	Routing	CAB-AC-RA	Power Cord,110V, Right Angle	224	included	included	included	included	included
CPSSDN - NG911	Routing	ASR1000-ESP5	ASR1K Embedded Services Processor,5Gbps,Crypto,ASR1002 only	112	\$ 12,000.00	1,344,000.00	\$ 5,760.00	\$ 645,120.00	52.00%
CPSSDN - NG911	Routing	SFP-GE-L	1000BASE-LX/LH SFP (DOM)	448	\$ 1,100.00	492,800.00	\$ 528.00	\$ 236,544.00	52.00%
CPSSDN - NG911	Routing	SFP-GE-S	1000BASE-SX SFP (DOM)	0	\$ 550.00	-	\$ 264.00	\$ -	52.00%
CPSSDN - NG911	Routing	SFP-GE-T	1000BASE-T SFP (NEBS 3 ESD)	0	\$ 440.00	-	\$ 211.20	\$ -	52.00%
CPSSDN - NG911	Routing	SFP-GE-Z	1000BASE-ZX Gigabit Ethernet SFP (DOM)	0	\$ 3,995.00	-	\$ 1,917.60	\$ -	52.00%
CPSSDN - NG911	Routing		TOTAL FOR "ROUTING" CATEGORY					\$ 3,177,792.00	
SUMMARY for Combined Projects									
Total Optical Transport					\$17,621,413.44				
Total Switching					\$5,449,540.80				
Total Routing					\$13,698,708.00				
Total Other					\$1,850,300.07				
Total Fiber					\$70,971,874.00				
Total Engineering/Design					\$65,000.00				
Total Project Management					\$1,258,250.00				
Total Professional Services					\$5,903,700.00				
TOTAL REQUEST					\$117,318,786.31				

Project	Category	Product Number
CPSSDN - Phase 1		Xponders
CPSSDN - Phase 1	Optical Transport	15454-10GE-XPE=
CPSSDN - Phase 1	Optical Transport	15454-GE-XPE=
CPSSDN - Phase 1	Optical Transport	ONS-XC-10G-SR-MM=
CPSSDN - Phase 1	Optical Transport	ONS-XC-10G-60.6=
CPSSDN - Phase 1	Optical Transport	ONS-SE-ZE-EL=
CPSSDN - Phase 1	Optical Transport	Sub-Total
CPSSDN - Phase 1		ROADM
CPSSDN - Phase 1	Optical Transport	15454-40-SMR1-C=
CPSSDN - Phase 1	Optical Transport	15454-40-SMR2-C=
CPSSDN - Phase 1	Optical Transport	15454-PP-4-SMR=
CPSSDN - Phase 1	Optical Transport	15216-MD-40-ODD=
CPSSDN - Phase 1	Optical Transport	15216-FL-SA=
CPSSDN - Phase 1	Optical Transport	15216-FLB-2-60.6=
CPSSDN - Phase 1	Optical Transport	Sub-Total
CPSSDN - Phase 1		Chassis and OSC
CPSSDN - Phase 1	Optical Transport	15454-M6-SA=
CPSSDN - Phase 1	Optical Transport	15454-M6-FTA=
CPSSDN - Phase 1	Optical Transport	15454-M6-AC=
CPSSDN - Phase 1	Optical Transport	15454-M6-LCD=
CPSSDN - Phase 1	Optical Transport	15454-M6-ECU=
CPSSDN - Phase 1	Optical Transport	15454-M6-BRKT19=
CPSSDN - Phase 1	Optical Transport	15454-M-TNC-K9=
CPSSDN - Phase 1	Optical Transport	ONS-SC-OSC-ULH=
CPSSDN - Phase 1	Optical Transport	Sub-Total
CPSSDN - Phase 1		Misc
CPSSDN - Phase 1	Optical Transport	15454-R9.0.0SWK9=
CPSSDN - Phase 1	Optical Transport	15454-MPO-MPO-2=
CPSSDN - Phase 1	Optical Transport	15454-MPO-MPO-6=
CPSSDN - Phase 1	Optical Transport	15454-MPO-MPO-8=
CPSSDN - Phase 1	Optical Transport	15454-LC-LC-2=
CPSSDN - Phase 1	Optical Transport	15216-ATT-LC-15=
CPSSDN - Phase 1	Optical Transport	15216-ATT-LC-10=
CPSSDN - Phase 1	Optical Transport	15216-ATT-LC-12=
CPSSDN - Phase 1	Optical Transport	CTM-9.0-NE200-K9
CPSSDN - Phase 1	Optical Transport	CTM-9.0-AUTH
CPSSDN - Phase 1	Optical Transport	Sub-Total
CPSSDN - Phase 1		DCU
CPSSDN - Phase 1	Optical Transport	15216-DCU-SA=
CPSSDN - Phase 1	Optical Transport	15216-DCU-100=
CPSSDN - Phase 1	Optical Transport	15216-DCU-350=
CPSSDN - Phase 1	Optical Transport	15216-DCU-450=
CPSSDN - Phase 1	Optical Transport	15216-DCU-550=
CPSSDN - Phase 1	Optical Transport	Sub-Total
CPSSDN - Phase 1		CPSSDN Phase 1 Cisco
CPSSDN - Phase 2	Optical Transport	15454-10GE-XPE=
CPSSDN - Phase 2	Optical Transport	15454-GE-XPE=
CPSSDN - Phase 2	Optical Transport	15216-FLB-2-60.6=
CPSSDN - Phase 2	Optical Transport	ONS-XC-10G-SR-MM=
CPSSDN - Phase 2	Optical Transport	ONS-XC-10G-59.7=
CPSSDN - Phase 2	Optical Transport	ONS-SE-G2F-LX=
CPSSDN - Phase 2	Optical Transport	Sub Total
CPSSDN - Phase 2	Switching	WS-C3750G-24PS-E

CPSSDN - Phase 2	Switching	GLC-LH-SM
CPSSDN - Phase 2	Switching	CAB-STACK-50CM
CPSSDN - Phase 2	Switching	CAB-16AWG-AC
CPSSDN - Phase 2	Switching	Sub Total

CPSSDN - Phase 2 **CPSSDN Phase 2 Cisco**

CPSSDN - Phase 1	Other	VSAT Equipment
CPSSDN - Phase 1		Sub Total

CPSSDN - NG911	Routing	ASR-9010-AC
CPSSDN - NG911	Routing	ASR-9010-FAN
CPSSDN - NG911	Routing	A9K-3KW-AC
CPSSDN - NG911	Routing	CAB-AC-C6K-TWLK
CPSSDN - NG911	Routing	A9K-RSP-4G
CPSSDN - NG911	Routing	A9K-K9-03.07
CPSSDN - NG911	Routing	A9K-4T-E
CPSSDN - NG911	Routing	A9K-AIP-LIC-E
CPSSDN - NG911	Routing	XFP-10GER-192IR+
CPSSDN - NG911	Routing	A9K-40GE-E
CPSSDN - NG911	Routing	A9K-AIP-LIC-E
CPSSDN - NG911	Routing	SFP-GE-L
CPSSDN - NG911	Routing	ASR-9010-4P-KIT
CPSSDN - NG911	Routing	A9K-LC-FILR
CPSSDN - NG911	Routing	ASR1002
CPSSDN - NG911	Routing	SASR1R1-AESK9-24SR
CPSSDN - NG911	Routing	ASR1002-PWR-AC
CPSSDN - NG911	Routing	CAB-AC-RA
CPSSDN - NG911	Routing	ASR1000-ESP5
CPSSDN - NG911	Routing	SFP-GE-L
CPSSDN - NG911	Routing	SFP-GE-S
CPSSDN - NG911	Routing	SFP-GE-T
CPSSDN - NG911	Routing	SFP-GE-Z
CPSSDN - NG911	Routing	

SUMMARY for CPSSDN

CPSSDN - Phase 1
CPSSDN - Phase 1
CPSSDN - Phase 2
CPSSDN - NG911
CPSSDN - Phase 1
CPSSDN - Phase 2

CPSSDN TOTAL

Product Description	Qty	List Price	LIST EXT
4x10GE Enhanced Crossponder	28	\$ 39,500	\$ 1,106,000
20 GBE ENHANCED CROSSPONDER	104	\$ 39,500	\$ 4,108,000
XFP - 10GE/10G FC - 850 SR - MM LC	70	\$ 2,000	\$ 140,000
XFP - OC-192/STM64/10GE, 1560.61, 100 GHz, LC	264	\$ 18,000	\$ 4,752,000
SFP - 10/100/1000 Ethernet BaseT Multi-rate Copper RJ45	312	\$ 440	\$ 137,280
			\$ 10,243,280
40Chs Single Module ROADM with integrated Optical PRE Amplifier	192	\$ 34,000	\$ 6,528,000
40Chs Single Module ROADM with integrated Optical PRE, Boost Amplifier	30	\$ 69,000	\$ 2,070,000
2RU 4-Degree SM ROADM Mesh Patch Panel	7	\$ 8,000	\$ 56,000
ONS 15216 40ch Mux Demux Patch Panel Odd	52	\$ 20,000	\$ 1,040,000
FlexLayer 4 Slot Shelf Assembly	85	\$ 1,467	\$ 124,695
ITU-100 GHz 2-Ch, FlexMod-1560.61, 1559.79	170	\$ 2,567	\$ 436,390
			\$ 10,255,085
M6 Chassis, 6 RU ANSI	109	\$ 1,950	\$ 212,550
Shelf Controlled Cooling Fan Tray, ANSI, HPCFM, I-Temp	111	\$ 450	\$ 49,950
AC Power Supply	222	\$ 750	\$ 166,500
LCD/Memory Unit	111	\$ 150	\$ 16,650
6 service slot MSTP chassis external cable connections	111	\$ 300	\$ 33,300
no deflectors	111	\$ 200	\$ 22,200
Transport Node Controller	222	\$ 15,000	\$ 3,330,000
SFP - OC3/STM1/FE Optical Service Channel SFPs ULH	222	\$ 3,000	\$ 666,000
			\$ 4,497,150
Rel. 9.0.0 Feature Pkg., CD, Right To Use License	137	\$ 1,995	\$ 273,315
Multi-fiber patchcord - MPO to MPO - 2m	7	\$ 750	\$ 5,250
Multi-fiber patchcord - MPO to MPO - 6m	7	\$ 750	\$ 5,250
Multi-fiber patchcord - MPO to MPO - 8m	14	\$ 750	\$ 10,500
Fiber patchcord - LC to LC - 2m	1128	\$ 90	\$ 101,520
Bulk Attenuator - LC Connector - 15dB	11	\$ 12	\$ 132
Bulk Attenuator - LC Connector - 10dB	26	\$ 1	\$ 26
Bulk Attenuator - LC Connector - 12dB	9	\$ 10	\$ 90
CTM R9.0 - 200 NE Max, 20 Client Max, SW CDs, Docs	1	\$ 34,550	\$ 34,550
CTM R9.0 - External Authentication License	1	\$ 10,000	\$ 10,000
			\$ 440,633
Mechanical shelf (housing 2 DCM)	169	\$ 560	\$ 94,640
DCF of -100 ps/nm	226	\$ 3,100	\$ 700,600
DCF of -350 ps/nm and 4dB loss	28	\$ 4,900	\$ 137,200
DCF of - 450 ps/nm	5	\$ 5,600	\$ 28,000
DCF of - 550 ps/nm	9	\$ 6,300	\$ 56,700
			\$ 1,017,140
			List
Total			\$ 26,453,288
4x10GE Enhanced Crossponder (includes 1 spare)	29	39,500.00	1,145,500.00
20 GBE ENHANCED CROSSPONDER (includes 1 spare)	105	39,500.00	4,147,500.00
ITU-100 GHz 2-Ch, FlexMod-1560.61, 1559.79	170	2,567.00	436,390.00
XFP - 10GE/10G FC - 850 SR - MM LC (includes 1 spare)	71	2,000.00	142,000.00
XFP - OC-192/STM64/10GE, 1559.79, 100 GHz, LC (includes 2 spares)	210	18,000.00	3,780,000.00
SFP - GE/1G-FC/2G-FC/HDTV - 1310nm - SM - LC	480	995.00	477,600.00
			\$ 10,128,990.00
Catalyst 3750 24 10/100/1000T PoE + 4 SFP + IPS Image	450	\$ 11,790.00	5,305,500.00

GE SFP, LC connector LX/LH transceiver	450	\$	995.00	447,750.00
Cisco StackWise 50CM Stacking Cable	450		included	included
AC Power cord, 16AWG	450		included	included
				\$ 5,753,250.00

Total **\$ 15,882,240.00**

I-direct VSAT Site Equipment	111	\$	20,836.71	\$ 2,312,874.81
				\$ 2,312,874.81

ASR-9010 AC Chassis	3	\$	12,100.00	36,300.00
ASR-9010 Fan Tray	6	\$	3,850.00	23,100.00
3kW AC Power Module	9	\$	2,800.00	25,200.00
Power Cord, 250Vac 16A, twist lock NEMA L6-20 plug, US	9		included	included
ASR9K Fabric, Controller 4G memory	3	\$	32,000.00	96,000.00
Cisco IOS XR IP/MPLS Core Software 3DES	3	\$	15,000.00	45,000.00
4-Port 10GE Extended Line Card, Requires XFPs	3	\$	125,000.00	375,000.00
L3 Services Extended Line Card License, For use with -E Line	3	\$	75,000.00	225,000.00
Cisco Multirate 10GBASE-ER and OC-192/STM-64 IR-2 XFP Module	12	\$	10,000.00	120,000.00
40-Port GE Extended Line Card, Requires SFPs	3	\$	115,000.00	345,000.00
L3 Services Extended Line Card License, For use with -E Line	3	\$	75,000.00	225,000.00
1000BASE-LX/LH SFP (DOM)	120	\$	1,100.00	132,000.00
ASR-9010 4 Post Mounting Kit	3		included	included
A9K Line Card Slot Filler	15		included	included
ASR 1002 with 5Gbps Processor, Chassis,4 built-in GE, Dual P/S,4GB DRAM	112	\$	18,000.00	2,016,000.00
Cisco ASR 1000 Series RP1 ADVANCED ENTERPRISE SERVICES	112	\$	10,000.00	1,120,000.00
Cisco ASR1002 AC Power Supply	224		included	included
Power Cord,110V, Right Angle	224		included	included
ASR1K Embedded Services Processor,5Gbps,Crypto,ASR1002 only	112	\$	12,000.00	1,344,000.00
1000BASE-LX/LH SFP (DOM)	448	\$	1,100.00	492,800.00
1000BASE-SX SFP (DOM)	0	\$	550.00	-
1000BASE-T SFP (NEBS 3 ESD)	0	\$	440.00	-
1000BASE-ZX Gigabit Ethernet SFP (DOM)	0	\$	3,995.00	-

TOTAL FOR "ROUTING" CATEGORY

TOTAL CISCO Equipment	\$12,697,578.24
TOTAL VSAT Equipment	\$1,850,300.07
TOTAL CISCO Equipment	\$7,623,475.20
TOTAL CISCO Equipment	\$ 3,177,792.00
TOTAL Fiber	\$19,260,174.00
TOTAL Fiber	\$28,142,700.00
Design/Engineering	\$460,000.00
Project Management	\$995,750.00
Professional Services	\$5,725,200.00
	\$79,932,969.51

CT Price @	CT Price EXT	Discount
\$ 18,960.00	\$ 530,880.00	52.00%
\$ 18,960.00	\$ 1,971,840.00	52.00%
\$ 960.00	\$ 67,200.00	52.00%
\$ 8,640.00	\$ 2,280,960.00	52.00%
\$ 211.20	\$ 65,894.40	52.00%
\$ 4,916,774.40		
\$ 16,320.00	\$ 3,133,440.00	52.00%
\$ 33,120.00	\$ 993,600.00	52.00%
\$ 3,840.00	\$ 26,880.00	52.00%
\$ 9,600.00	\$ 499,200.00	52.00%
\$ 704.16	\$ 59,853.60	52.00%
\$ 1,232.16	\$ 209,467.20	52.00%
\$ 4,922,440.80		
\$ 936.00	\$ 102,024.00	52.00%
\$ 216.00	\$ 23,976.00	52.00%
\$ 360.00	\$ 79,920.00	52.00%
\$ 72.00	\$ 7,992.00	52.00%
\$ 144.00	\$ 15,984.00	52.00%
\$ 96.00	\$ 10,656.00	52.00%
\$ 7,200.00	\$ 1,598,400.00	52.00%
\$ 1,440.00	\$ 319,680.00	52.00%
\$ 2,158,632.00		
\$ 957.60	\$ 131,191.20	52.00%
\$ 360.00	\$ 2,520.00	52.00%
\$ 360.00	\$ 2,520.00	52.00%
\$ 360.00	\$ 5,040.00	52.00%
\$ 43.20	\$ 48,729.60	52.00%
\$ 5.76	\$ 63.36	52.00%
\$ 0.48	\$ 12.48	52.00%
\$ 4.80	\$ 43.20	52.00%
\$ 16,584.00	\$ 16,584.00	52.00%
\$ 4,800.00	\$ 4,800.00	52.00%
\$ 211,503.84		
\$ 268.80	\$ 45,427.20	52.00%
\$ 1,488.00	\$ 336,288.00	52.00%
\$ 2,352.00	\$ 65,856.00	52.00%
\$ 2,688.00	\$ 13,440.00	52.00%
\$ 3,024.00	\$ 27,216.00	52.00%
\$ 488,227.20		
CT Price		
\$ 12,697,578.24		

\$ 18,960.00	\$ 549,840.00	52.00%
\$ 18,960.00	\$ 1,990,800.00	52.00%
\$ 1,232.16	\$ 209,467.20	52.00%
\$ 960.00	\$ 68,160.00	52.00%
\$ 8,640.00	\$ 1,814,400.00	52.00%
\$ 477.60	\$ 229,248.00	52.00%
\$ 4,861,915.20		

\$ 5,659.20	\$ 2,546,640.00	52.00%
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\$ 477.60	\$ 214,920.00	52.00%
included	included	included
included	included	included
	\$ 2,761,560.00	
	\$ 7,623,475.20	

\$ 16,669.37	\$ 1,850,300.07	20.00%
	\$ 1,850,300.07	

\$ 5,808.00	\$ 17,424.00	52.00%
\$ 1,848.00	\$ 11,088.00	52.00%
\$ 1,344.00	\$ 12,096.00	52.00%
included	included	included
\$ 15,360.00	\$ 46,080.00	52.00%
\$ 7,200.00	\$ 21,600.00	52.00%
\$ 60,000.00	\$ 180,000.00	52.00%
\$ 36,000.00	\$ 108,000.00	52.00%
\$ 4,800.00	\$ 57,600.00	52.00%
\$ 55,200.00	\$ 165,600.00	52.00%
\$ 36,000.00	\$ 108,000.00	52.00%
\$ 528.00	\$ 63,360.00	52.00%
included	included	included
included	included	included
\$ 8,640.00	\$ 967,680.00	52.00%
\$ 4,800.00	\$ 537,600.00	52.00%
included	included	included
included	included	included
\$ 5,760.00	\$ 645,120.00	52.00%
\$ 528.00	\$ 236,544.00	52.00%
\$ 264.00	\$ -	52.00%
\$ 211.20	\$ -	52.00%
\$ 1,917.60	\$ -	52.00%
\$ 3,177,792.00		

Project	Category	Product Number	Product Description	Qty
CEN	Switching	ME-C6524GT-8S	Cisco ME6524 Switch - 24 10/100/1000 + 8GE SFP, Fan tray	120
CEN	Switching	MEM-XCEF720-1GB	Catalyst 6500 1GB DDR, xCEF720 (67xx interface, DFC3BXL)	120
CEN	Switching	MEM-MSFC3-1GB	1GB Mem for Sup720, Sup720-3B and MSFC2A	120
CEN	Switching	PWR-400W-AC	400W AC PS for Cisco ME6524 Switches	240
CEN	Switching	CAB-AC-125V/13A	Power Cord for North America, 125VAC/13A	240
CEN	Switching	S523AIK9L-12233SXI	Cisco ME 6524 IOS ADVANCED IP SERVICES SSH LAN ONLY	120
CEN	Switching	MEM-C6K-CPTFL512M	Catalyst 6500 Sup720/Sup32 Compact Flash Mem 512MB	120
CEN	Switching	TOTAL FOR "SWITCHING" CATEGORY		
CEN	Routing	CISCO7609-S	Cisco 7609-S Chassis including fans	33
CEN	Routing	7609S-RSP720CXCL-P	Cisco 7609S Chassis,9-slot,RSP720-3CXL,PS	33
CEN	Routing	RSP720-3CXL-GE	Cisco 7600 Route Switch Processor 720Gbps fabric,PFC3CXL, GE	33
CEN	Routing	MEM-RSP720-CF512M	C7600 RSP720 Compact Flash memory	33
CEN	Routing	S764AEK9-12233SRD	Cisco 7600-RSP720 IOS ADVANCED ENTERPRISE SERVICES SSH	33
CEN	Routing			
CEN	Routing	3000W-AC	3000W AC Power Supply (select cable)	33
CEN	Routing	WS-CAC-3000W	Catalyst 6500 3000W AC power supply	33
CEN	Routing	WS-CAC-3000W	Catalyst 6500 3000W AC power supply	33
CEN	Routing	CAB-AC-C6K-TWLK	Power Cord, 250Vac 16A, twist lock NEMA L6-20 plug, US	66
CEN	Routing			
CEN	Routing	7600-ES+4TG3CXL	7600 ES+ Line Card, 4x10GE XFP with DFC 3CXL	37
CEN	Routing	76-ES+ADVIP-40G	ES+ 40G Adv License, with MVPN, IPv6, 6vPE, L3 IP/MPLS VPN	37
CEN	Routing			
CEN	Routing	XFP-10GER-192IR+	Cisco Multirate 10GBASE-ER and OC-192/STM-64 IR-2 XFP Module	66
CEN	Routing	XFP-10GLR-OC192SR	Multirate XFP module for 10GBASE-LR and OC192 SR-1	40
CEN	Routing	XFP-10GZR-OC192LR	10GBASE-ZR and OC192 LR2 XFP Module	49
CEN	Routing			
CEN	Routing	7600-ES+40G3CXL	7600 ES+ Line Card, 40xGE SFP with DFC 3CXL	37
CEN	Routing	76-ES+ADVIP-40G	ES+ 40G Adv License, with MVPN, IPv6, 6vPE, L3 IP/MPLS VPN	37
CEN	Routing			
CEN	Routing	SFP-GE-L	1000BASE-LX/LH SFP (DOM)	300
CEN	Routing	SFP-GE-Z	1000BASE-ZX Gigabit Ethernet SFP (DOM)	150
CEN	Routing			
CEN	Routing	WS-X6748-GE-TX	Cat6500 48-port 10/100/1000 GE Mod: fabric enabled, RJ-45	40
CEN	Routing	WS-F6700-DFC3CXL	Catalyst 6500 Dist Fwd Card- 3CXL, for WS-X67xx	40
CEN	Routing	MEM-XCEF720-1GB	Catalyst 6500 1GB DDR, xCEF720 (67xx interface, DFC3BXL)	40
CEN	Routing	TOTAL FOR "ROUTING" CATEGORY		

SUMMARY for CEN

CEN TOTAL CISCO Equipment
CEN TOTAL Fiber
Design/Engineering
Project Management
Professional Services

CEN TOTAL

List Price	LIST EXT	CT Price @	CT Price EXT	Discount
\$ 17,000.00	2,040,000.00	\$ 8,160.00	\$ 979,200.00	52.00%
\$ 9,600.00	1,152,000.00	\$ 4,608.00	\$ 552,960.00	52.00%
\$ 4,800.00	576,000.00	\$ 2,304.00	\$ 276,480.00	52.00%
\$ 1,500.00	360,000.00	\$ 720.00	\$ 172,800.00	52.00%
included	included	included	included	included
\$ 10,000.00	1,200,000.00	\$ 4,800.00	\$ 576,000.00	52.00%
included	included	included	included	included
			\$ 2,557,440.00	
included	included	included	included	included
\$ 53,500.00	1,765,500.00	\$ 25,680.00	\$ 847,440.00	52.00%
included	included	included	included	included
\$ 995.00	32,835.00	\$ 477.60	\$ 15,760.80	52.00%
\$ 15,000.00	495,000.00	\$ 7,200.00	\$ 237,600.00	52.00%
included	included	included	included	included
included	included	included	included	included
\$ 3,000.00	99,000.00	\$ 1,440.00	\$ 47,520.00	52.00%
included	included	included	included	included
\$ 155,000.00	5,735,000.00	\$ 74,400.00	\$ 2,752,800.00	52.00%
\$ 75,000.00	2,775,000.00	\$ 36,000.00	\$ 1,332,000.00	52.00%
\$ 10,000.00	660,000.00	\$ 4,800.00	\$ 316,800.00	52.00%
\$ 4,000.00	160,000.00	\$ 1,920.00	\$ 76,800.00	52.00%
\$ 16,000.00	784,000.00	\$ 7,680.00	\$ 376,320.00	52.00%
\$ 115,000.00	4,255,000.00	\$ 55,200.00	\$ 2,042,400.00	52.00%
\$ 75,000.00	2,775,000.00	\$ 36,000.00	\$ 1,332,000.00	52.00%
\$ 1,100.00	330,000.00	\$ 528.00	\$ 158,400.00	52.00%
\$ 3,995.00	599,250.00	\$ 1,917.60	\$ 287,640.00	52.00%
\$ 15,000.00	600,000.00	\$ 7,200.00	\$ 288,000.00	52.00%
\$ 15,000.00	600,000.00	\$ 7,200.00	\$ 288,000.00	52.00%
included	included	included	included	included
			\$ 10,399,480.80	

\$12,956,920.80

\$23,569,000.00

\$105,000.00

\$262,500.00

\$178,500.00

\$37,071,920.80

Project	Category	Product Number
DOIT - POP2	Optical Transport	UCONN End of the Fiber
DOIT - POP2	Optical Transport	DWDM-X2-38.98=
DOIT - POP2	Optical Transport	DWDM-X2-39.77=
DOIT - POP2	Optical Transport	CWDM-CHASSIS-2=
DOIT - POP2	Optical Transport	EWDM-MUX8=
DOIT - POP2	Optical Transport	EWDM-OA=
DOIT - POP2	Optical Transport	
DOIT - POP2	Optical Transport	DOIT End of the Fiber
DOIT - POP2	Optical Transport	DWDM-X2-38.98=
DOIT - POP2	Optical Transport	DWDM-X2-39.77=
DOIT - POP2	Optical Transport	CWDM-CHASSIS-2=
DOIT - POP2	Optical Transport	EWDM-MUX8=
DOIT - POP2	Optical Transport	EWDM-OA=
DOIT - POP2	Optical Transport	

DOIT - POP2	Switching	WS-C6506-E
DOIT - POP2	Switching	SV33AEK9-12233SXH
DOIT - POP2	Switching	VS-S720-10G-3C
DOIT - POP2	Switching	CF-ADAPTER-SP
DOIT - POP2	Switching	VS-S720-10G-3C
DOIT - POP2	Switching	CF-ADAPTER-SP
DOIT - POP2	Switching	WS-X6748-GE-TX
DOIT - POP2	Switching	WS-F6700-DFC3C
DOIT - POP2	Switching	SPA-IPSEC-SSC400-1
DOIT - POP2	Switching	WS-X6748-GE-TX
DOIT - POP2	Switching	WS-F6700-DFC3C
DOIT - POP2	Switching	WS-C6506-E-FAN
DOIT - POP2	Switching	WS-CAC-6000W
DOIT - POP2	Switching	CAB-7513AC
DOIT - POP2	Switching	VS-F6K-MSFC3
DOIT - POP2	Switching	VS-F6K-PFC3C
DOIT - POP2	Switching	VS-S720-10G
DOIT - POP2	Switching	MEM-C6K-CPTFL1GB
DOIT - POP2	Switching	BF-S720-64MB-RP
DOIT - POP2	Switching	VS-F6K-MSFC3
DOIT - POP2	Switching	VS-F6K-PFC3C
DOIT - POP2	Switching	VS-S720-10G
DOIT - POP2	Switching	MEM-C6K-CPTFL1GB
DOIT - POP2	Switching	BF-S720-64MB-RP
DOIT - POP2	Switching	MEM-XCEF720-512M
DOIT - POP2	Switching	7600-SSC-400
DOIT - POP2	Switching	SPA-IPSEC-2G
DOIT - POP2	Switching	IOS-CVPN-CLIENT-K9
DOIT - POP2	Switching	MEM-XCEF720-512M
DOIT - POP2	Switching	GLC-LH-SM
DOIT - POP2	Switching	WS-C3560E-24TD-E
DOIT - POP2	Switching	S3560EVT-12235SE
DOIT - POP2	Switching	CAB-AC
DOIT - POP2	Switching	CVR-X2-SFP-2
DOIT - POP2	Switching	CVR-X2-SFP

DOIT - POP2 Switching	GSS-4492R-K9
DOIT - POP2 Switching	SF-GSS-V3.1-K9
DOIT - POP2 Switching	CAB-AC
DOIT - POP2 Switching	SF-GSS-DDOSLIC
DOIT - POP2 Switching	
DOIT - POP2	
DOIT - POP2 Routing	ASR1002-5G-SEC/K9
DOIT - POP2 Routing	SPA-3XOC3-ATM-V2
DOIT - POP2 Routing	SFP-OC3-IR1
DOIT - POP2 Routing	ASR1002-PWR-AC
DOIT - POP2 Routing	CAB-AC-RA
DOIT - POP2 Routing	MEMUSB-1024FT
DOIT - POP2 Routing	SFP-GE-T
DOIT - POP2 Routing	ASR1000-SPA
DOIT - POP2 Routing	ASR1000-ESP5
DOIT - POP2 Routing	FLASR1-FW-RTU
DOIT - POP2 Routing	FLASR1-IPSEC-RTU
DOIT - POP2 Routing	SASR1R1-AESK9-23SR
DOIT - POP2 Routing	

DOIT POP2 SUMMARY
DOIT POP2 TOTAL

Product Description	Qty	List Price	LIST EXT	CT Price @
DWDM X2 1538.98 nm X2 (100 GHz ITU grid)	1	\$ 20,000.00	\$ 20,000.00	\$ 9,600.00
DWDM X2 1539.77 nm X2 (100 GHz ITU grid)	1	\$ 20,000.00	\$ 20,000.00	\$ 9,600.00
2 Slot Chassis for CWDM Mux Plug in Modules	1	\$ 500.00	\$ 500.00	\$ 240.00
8-channels EWDM MUX/DEMUX Module	1	\$ 12,000.00	\$ 12,000.00	\$ 5,760.00
EWDM Optical Amplifier	1	\$ 12,000.00	\$ 12,000.00	\$ 5,760.00
DWDM X2 1538.98 nm X2 (100 GHz ITU grid)	1	\$ 20,000.00	\$ 20,000.00	\$ 9,600.00
DWDM X2 1539.77 nm X2 (100 GHz ITU grid)	1	\$ 20,000.00	\$ 20,000.00	\$ 9,600.00
2 Slot Chassis for CWDM Mux Plug in Modules	1	\$ 500.00	\$ 500.00	\$ 240.00
8-channels EWDM MUX/DEMUX Module	1	\$ 12,000.00	\$ 12,000.00	\$ 5,760.00
EWDM Optical Amplifier	1	\$ 12,000.00	\$ 12,000.00	\$ 5,760.00
TOTAL FOR "ACCESS" or "SWITCHING" CATEGORY				

Catalyst 6500 Enhanced 6-slot chassis, 12RU, no PS, no Fan Tray	1	\$ 5,500.00	\$ 5,500.00	\$ 2,640.00
Cisco CAT6000-VSS720 IOS ADVANCED ENTERPRISE SERVICES SSH	1	\$ 15,000.00	\$ 15,000.00	\$ 7,200.00
Cat 6500 Supervisor 720 with 2 ports 10GbE and MSFC3 PFC3C	1	\$ 38,000.00	\$ 38,000.00	\$ 18,240.00
SP adapter with compact flash for SUP720	1	included	included	included
Cat 6500 Supervisor 720 with 2 ports 10GbE and MSFC3 PFC3C	1	\$ 38,000.00	\$ 38,000.00	\$ 18,240.00
SP adapter with compact flash for SUP720	1	included	included	included
Cat6500 48-port 10/100/1000 GE Mod: fabric enabled, RJ-45	1	\$ 15,000.00	\$ 15,000.00	\$ 7,200.00
Catalyst 6500 Dist Fwd Card for WS-X67xx modules	1	\$ 7,500.00	\$ 7,500.00	\$ 3,600.00
Cisco 6500/7600 IPSec VPN Bundle1: 1 IPSec VPN SPA + SSC-400	2	\$ 39,995.00	\$ 79,990.00	\$ 19,197.60
Cat6500 48-port 10/100/1000 GE Mod: fabric enabled, RJ-45	1	\$ 15,000.00	\$ 15,000.00	\$ 7,200.00
Catalyst 6500 Dist Fwd Card for WS-X67xx modules	1	\$ 7,500.00	\$ 7,500.00	\$ 3,600.00
Catalyst 6506-E Chassis Fan Tray	1	\$ 495.00	\$ 495.00	\$ 237.60
Cat6500 6000W AC Power Supply	2	\$ 5,000.00	\$ 10,000.00	\$ 2,400.00
AC POWER CORD NORTH AMERICA (110V)	4	included	included	included
Catalyst 6500 Multilayer Switch Feature Card (MSFC) III	1	included	included	included
Catalyst 6500 Sup 720-10G Policy Feature Card 3C	1	included	included	included
Catalyst 6500 Supervisor 720 with 2 10GbE ports	1	included	included	included
Catalyst 6500 Compact Flash Memory 1GB	1	included	included	included
Bootflash for SUP720-64MB-RP	1	included	included	included
Catalyst 6500 Multilayer Switch Feature Card (MSFC) III	1	included	included	included
Catalyst 6500 Sup 720-10G Policy Feature Card 3C	1	included	included	included
Catalyst 6500 Supervisor 720 with 2 10GbE ports	1	included	included	included
Catalyst 6500 Compact Flash Memory 1GB	1	included	included	included
Bootflash for SUP720-64MB-RP	1	included	included	included
Cat 6500 512MB DDR, xCEF720 (67xx interface, DFC3A/DFC3B)	1	included	included	included
Cisco 7600/6500 Services SPA Carrier Card (6 Gbps)	1	included	included	included
Cisco 7600 / Catalyst 6500 IPSec VPN SPA - DES/3DES/AES	1	included	included	included
VPN Software Client for IOS Security Bundles	1	included	included	included
Cat 6500 512MB DDR, xCEF720 (67xx interface, DFC3A/DFC3B)	1	included	included	included
GE SFP, LC connector LH transceiver	2	\$ 995.00	\$ 1,990.00	\$ 477.60
Catalyst 3560E 24 10/100/1000+2*10GE(X2),265W,IPS s/w	1	\$ 9,990.00	9,990.00	\$ 4,795.20
CAT 3560E IOS UNIVERSAL W/O CRYPTO WITH WEB BASED DEV MGR	1	included	included	included
AC Power Cord (North America), C13, NEMA 5-15P, 2.1m	1	included	included	included
Two (2) Cisco TwinGig Converter Modules	1	included	included	included
Cisco TwinGig Converter Module	2	included	included	included

Global Site Selector	1	\$ 19,995.00	19,995.00	\$ 9,597.60
GSS 3.1 Base Software	1	included	included	included
Power Cord,110V	1	included	included	included
GSS DDOS Software License	1	\$ 8,000.00	8,000.00	\$ 3,840.00

TOTAL FOR "SWITCHING" CATEGORY

ASR1002 VPN+FW Bundle w/ ESP-5G,AESK9,License,4GB DRAM	3	\$ 60,000.00	180,000.00	\$ 28,800.00
3 port OC-3c/STM-1 ATM Shared Port Adapter	3	\$ 21,000.00	63,000.00	\$ 10,080.00
OC3/STM1 SFP, Single-mode fiber, Intermediate Reach	6	\$ 800.00	4,800.00	\$ 384.00
Cisco ASR1002 AC Power Supply	6	included	included	included
Power Cord,110V, Right Angle	6	included	included	included
1GB USB Flash Token	3	\$ 850.00	2,550.00	\$ 408.00
1000BASE-T SFP (NEBS 3 ESD)	6	\$ 440.00	2,640.00	\$ 211.20
SPA for ASR1000; No Physical Part; For Tracking Only	3	included	included	included
ASR1K Embedded Services Processor,5Gbps,Crypto,ASR1002 only	3	included	included	included
Firewall Right-To-Use Feature Lic for ASR1000 Series	3	included	included	included
Encryption Right-To-Use Feature Lic for ASR1000 Series	3	included	included	included
Cisco ASR 1000 Series RP1 ADVANCED ENTERPRISE SERVICES	3	included	included	included

TOTAL FOR "ROUTING" CATEGORY

CISCO Equipment

CT Price EXT	Discount
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\$ 9,600.00	52.00%
\$ 9,600.00	52.00%
\$ 240.00	52.00%
\$ 5,760.00	52.00%
\$ 5,760.00	52.00%

\$ 9,600.00	52.00%
\$ 9,600.00	52.00%
\$ 240.00	52.00%
\$ 5,760.00	52.00%
\$ 5,760.00	52.00%

\$ 61,920.00	
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\$ 2,640.00	52.00%
\$ 7,200.00	52.00%
\$ 18,240.00	52.00%
included	included
\$ 18,240.00	52.00%
included	included
\$ 7,200.00	52.00%
\$ 3,600.00	52.00%
\$ 38,395.20	52.00%
\$ 7,200.00	52.00%
\$ 3,600.00	52.00%
\$ 237.60	52.00%
\$ 4,800.00	52.00%

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\$ 955.20	52.00%
\$ 4,795.20	52.00%
included	included
included	included
included	included
included	included

\$	9,597.60	52.00%
	included	included
	included	included
\$	3,840.00	52.00%
\$	130,540.80	

\$	86,400.00	52.00%
\$	30,240.00	52.00%
\$	2,304.00	52.00%
	included	included
	included	included
\$	1,224.00	52.00%
\$	1,267.20	52.00%
	included	included
	included	included
	included	included
	included	included
	included	included
\$	121,435.20	

\$ 313,896.00

CONNECTICUT STATE LIBRARY



Kendall F. Wiggin
State Librarian

March 24, 2010

Richard R. Bailey
Deputy Chief Information Officer
State of Connecticut
Department of Information Technology
101 East River Drive
East Hartford, CT 06108

Dear Rick,

In my capacity as both State Librarian and the current Chair of the Commission on Educational Technology, I am very pleased to write in support of the Department of Information Technology's application for a Broadband Technology Opportunities Program (BTOP) grant. I am particularly excited about the opportunity to increase the bandwidth of many of the state's libraries on the Connecticut Education Network (CEN). The role that public libraries play as anchor institutions is well documented. Connecticut has seen the same demand for public Internet access that has been reported nationally. The current connections these libraries have to the CEN have not been sufficient to meet the growing public demand for Internet access in their communities. The state's growing unemployment rate has placed an even greater demand on library connections to the Internet as individuals come to the library seeking job and career information. The State Library and the State of Connecticut have made a major ongoing financial commitment over the past 9 years to insure that all citizens in the state have access to a broad base of online information resources through iCONN.org. Libraries statewide provide access from their libraries to these important resources. Having sufficient bandwidth insures that more library users will have access to these and so many more Internet based information resources. The growing use of Web2.0 tools and resources in libraries has further strained the current connections these libraries have to the CEN and subsequently the Internet.

Increasing the broadband capacity of the public libraries targeted in this grant application will insure their ability to provide the residents of their communities with high speed access to the Internet for years to come. It is my sincere hope that this application will be acted upon favorably.

Sincerely,

A handwritten signature in black ink, appearing to read "Ken".

BTOP Comprehensive Community Infrastructure Subscriber Estimates Template

Please complete the complete the Subscriber Estimates worksheet.

All applicants should indicate their 8-year subscriber forecasts with a breakdown by type of subscriber (residential/individual, businesses, community anchor institutions, third party service providers) and service offerings. The names of the service offerings should match those provided in the Service Offering and Competitor Data attachment, enabling reviewers to easily cross-reference between the two documents. The Year 0 column should be used to denote any existing customers within the Proposed Funded Service Area. In addition, applicants that project that they will have third party service provider customers should include a line for parties "Served by Third Party Service Providers," showing an estimate of how many residential/individual, community anchor institution, and business customers will be served by those service providers, as demonstrated in the example below. At the bottom of the table, applicants should provide customer totals across all service offerings, with and without customers indirectly served through a third party service provider (if applicable). Applicants should also include a brief discussion of their methodology for deriving these estimates.

In contrast to several other attachment templates in this application, the data provided via this template will NOT be subject to automated processing. Applicants are permitted to modify the template layout in order to provide the most effective presentation of the data for their specific project, but such modifications are generally discouraged. Applicants should, in any case, ensure that they provide at least as much detail as the provided templates requires. To the extent that you modify these templates, please ensure that the print layouts are adjusted so that rows do not break across pages in a manner that will be difficult to understand. It is recommended that you provide these documents in PDF format when submitting a copy of your application on an appropriate electronic medium, such as a DVD, CD-ROM, or flash drive.

EXAMPLE

Name of Service Offering	Customer Type	Year 0	Cumulative/ Net Add	Year 1				Year 2			
				Qtr 1	Qtr 2	Qtr 3	Qtr 4	Qtr 1	Qtr 2	Qtr 3	Qtr 4
Mega-Metro E - 100 Mbps	Community Anchor Inst.	0	Cumulative	0	0	0	0	5	10	17	26
			Net Add	0	0	0	0	5	5	7	9
	Business	0	Cumulative	0	0	0	0	12	27	52	82
			Net Add	0	0	0	0	12	15	25	30
	Third Party Service Provider	0	Cumulative	0	0	0	0	1	2	4	6
			Net Add	0	0	0	0	1	1	2	2
Served by Third Party Service Providers	Indirect - Res./Ind.	0	Cumulative	0	0	0	0	1000	3000	5000	10000
			Net Add	0	0	0	0	1000	2000	2000	5000
	Indirect - Business	0	Cumulative	0	0	0	0	2	8	18	30
			Net Add	0	0	0	0	2	6	10	12
	Indirect - Com. Anchor Inst.	0	Cumulative	0	0	0	0	0	2	3	5
			Net Add	0	0	0	0	0	2	1	2

Broadband Subscriber Estimates

Name of Service Offering	Customer Type	Year 0	Cumulative/ Net Add	Year 1				Year 2				Year 3				Year 4	
				Qtr 1	Qtr 2	Qtr 3	Qtr 4	Qtr 1	Qtr 2	Qtr 3	Qtr 4	Qtr 1	Qtr 2	Qtr 3	Qtr 4	Qtr 1	Qtr 2
Anchor Institution	Community Anchor Inst.	342	Cumulative	390	462	621	749	781	844	928	947	969	1009				
			Net Add	48	72	159	119	41	63	84	19	22	40				
			Cumulative														
			Net Add														
			Cumulative														
			Net Add														
			Cumulative														
			Net Add														
Cumulative Totals (excluding Indirect)	Residential/Individual		Total														
	Business		Total														
	Community Anchor Inst.	342	Total	390	462	621	749	781	844	928	947	969	1009				
	Third Party Service Provider		Total														
Cumulative Totals (including Indirect)	Residential/Individual		Total														
	Business		Total														
	Community Anchor Inst.	342	Total	390	462	621	749	781	844	928	947	969	1009				

Table of Customer Types

Residential/Individual
Business
Community Anchor Inst.
Third Party Service Provider
Indirect - Res./Ind.
Indirect - Business
Indirect - Com. Anchor Inst.

Explanation of Methodology:

Subscriber numbers are taken from the Detailed Build-Out Timeline. While there are future Community Anchor Institutions that may be connected after completion of the project, these numbers are unknown at this time.

Name of Service Offering	Customer Type	Year 4		Year 5				Year 6				Year 7				Year 8		
		Qtr 3	Qtr 4	Qtr 1	Qtr 2	Qtr 3	Qtr 4	Qtr 1	Qtr 2	Qtr 3	Qtr 4	Qtr 1	Qtr 2	Qtr 3	Qtr 4	Qtr 1	Qtr 2	Qtr 3
Anchor Institution	Community Anchor Inst.																	
Cumulative Totals (excluding Indirect)	Residential/Individual Business																	
	Community Anchor Inst.																	
	Third Party Service Provider																	
Cumulative Totals (including Indirect)	Residential/Individual Business																	
	Community Anchor Inst.																	

Table of Customer Types

Residential/Individual Business
Community Anchor Inst.
Third Party Service Provider
Indirect - Res./Ind.
Indirect - Business
Indirect - Com. Anchor Inst.

Name of Service Offering	Customer Type	Qtr 4
Anchor Institution	Community Anchor Inst.	
Cumulative Totals (excluding Indirect)	Residential/Individual	
	Business	
	Community Anchor Inst.	
Cumulative Totals (including Indirect)	Third Party Service Provider	
	Residential/Individual	
	Business	
	Community Anchor Inst.	

Table of Customer Types

Residential/Individual
Business
Community Anchor Inst.
Third Party Service Provider
Indirect - Res./Ind.
Indirect - Business
Indirect - Com. Anchor Inst.

DIANE S. WALLACE

DIANE S WALLACE PROFESSIONAL EXPERIENCE

STATE OF CONNECTICUT – HARTFORD, CT

2005 - CURRENT

A \$14 billion government enterprise serving the residents and businesses in the State of Connecticut, with 76 agencies providing services in the government sector for public safety, health & social services, transportation, labor, homeland security, education, etc.

CHIEF INFORMATION OFFICER

DEPARTMENT OF INFORMATION TECHNOLOGY

FEB 2005 - CURRENT

- Completed the State of Connecticut's first technology strategic plan, and established a 3 year plan to close gaps in security, SOA architecture & standards, application support and organizational deficiencies. Created an E-Government strategy to provide online services for Connecticut citizens, business and non-profit organizations. Matured the current model from merely providing information online to processing business transactions, making it easier to do business with the state. Delivered online vehicle registration functions for the Dept of Motor Vehicles in June 2007, and online payment capabilities enabling online licensing functionality.
- Cost effective management resulted in a State IT budget that increased only 1.86% since 2005 (while the average State budget increase was 8%), while continuing to implement a state-of-the-art IT security & network infrastructure, eGovernment transaction functionality and built a strong IT employee workforce for the State.
 - Obtained over \$14M in telecommunications savings through renegotiated contracts, and implementing telephone plan savings across state agencies.
 - Reduced consultant costs by 30%, saving \$11.8M in consultant costs through improved project management and reporting controls
 - Promoted significant cost savings through improved contracts for hardware and software purchases and maintenance agreements. 95% of all bids resulted in lower final costs than were initially submitted. The current architecture program is forecast to save Connecticut between \$15 – 23M, dependant on the pace of legacy conversions.
- Completed the Connecticut Education Network, the first 100% fiber-optic network, connecting every town and city in the state of Connecticut to the Internet, to promote and leverage education training and issues across all constituents (K-12 and college, public and private). CEN connections now exist in each of the state's 169 cities and towns, 215 K-12 districts, 50 college and university campuses, and 178 libraries.
- Appointed Chairperson for the Geospatial Information Systems Council, representing all state agencies and municipalities. Built a geospatial solution to be shared by all these entities, with the first deliverable implemented 3Q07, emergency support for hurricane and wind damage events.

CNA FINANCIAL CORPORATION – Chicago, IL.

2002- 2003

VICE PRESIDENT, INFORMATION TECHNOLOGY

CLAIM, WORLDWIDE OPERATIONS, SPECIALTY & GLOBAL

JAN - OCT 2003

CLAIM & WORLDWIDE OPERATIONS

AUG - DEC 2002

CLAIM

FEB – AUG 2002

AETNA INC. – Hartford, CT.

1973 – 2000

CHIEF INFORMATION OFFICER, *AETNA/USHEALTHCARE (A/USHC)*

1998 – 2000

VICE PRESIDENT, *AETNA INFORMATION TECHNOLOGY - CORPORATE*

1995 – 1997

EDUCATION

SALEM STATE COLLEGE, Salem, Massachusetts

B.S. Education (magna cum laude) 1973

DIANE S. WALLACE
Richard R. Bailey, Sr.
Marlborough, CT 06447

Veteran of 36 years as a state employee, seeking progressively greater responsibility and accomplishing more demanding tasks.

Recent Accomplishments

- **Recognized in May of 2009 by CIO Magazine for outstanding leadership receiving their One's to Watch Award**; Co-lead statewide Pandemic Continuity of Operations planning process and conducted educational and plan development training sessions for all state agencies; **Lead statewide laptop full disk encryption effort which resulted in the encryption of 7,000 laptop hard drives in a 7 week period covering 64 agencies**; Responsible for state HIPAA compliance program impacting 10 agencies; **Developed and implemented the state's IT Security Program and Security Risk Analysis Methodology**; Established and implemented a statewide e-licensing solution; **Established a statewide network intrusion prevention solution; Implemented an enterprise internet filtering solution for the state**; Redesigned and implemented new enterprise firewall infrastructure

Professional Experience

Deputy Chief Information Officer – State of Connecticut, EAST HARTFORD, CT ▪ OCTOBER, 2007 – PRESENT

- Organizationally responsible for the daily operation, budget, strategic planning, personnel allocation and organization alignment for Computer Operations, IT Security, Networking and Architecture programs.
- Serve as a member of the states Stimulus Transparency Workgroup establishing a Web site and supporting processes to meet federal transparency expectations.
- Serve as a member of the states Stimulus Expediting Workgroup setting up a processes to support state regulatory and permitting processes for Connecticut stimulus projects.
- Serve as a member of the States Broadband Workgroup responsible for establishing the Connecticut's Broadband Strategic Plan and related operational policies and procedures.

IT MANAGER 2 AND 3 – STATE OF CONNECTICUT, EAST HARTFORD, CT ▪ DECEMBER, 2003 – OCTOBER, 2007

- Within the IT Security and Architecture Divisions of DOIT: plans, organizes and manages all operations and activities; directly responsible for meeting all information technology needs of the IT Security and Architecture Divisions; responsible for establishing priorities of information technology initiatives within each division; develop IT Security service offerings and project future utilizations; ensure RFI and RFP processes provide for strategically aligned, cost effective, high quality solutions for the state; Construct and Present Project, Budget and Financial Presentations for IT Security, DOIT Staff, Agency Personnel, OPM Budget, Legislative Budget Sub Committee and Bond Fund Sub Committee; IT Security Operations Includes: Enterprise Firewall Infrastructure; Statewide Internet Filtering Platform; Intrusion Prevention and Network Monitoring; Investigation and Forensics Support; Conduct Semi-Annual Disaster Recovery Hot Site Platform and Network Recovery Testing; DOIT Business Continuity Planning; DOIT Pandemic Continuity of Operations Planning; Establishment of and maintain Internal Emergency Operations Center; Establish External Emergency Operations Center; Support Planning Efforts Associated with The Establishment of an Alternate Data Center; DNS Platform; CSS Platforms; Edited content, managed four editors, and provided usability feedback for Web site development projects that showcased the company's business-to-business wireless services.
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Johnathan Vittner Experience

Chief Technology Officer, State of Connecticut, 2008 to Present

Responsible for directing and managing the State of Connecticut Architecture and Standards Division and overseeing program efforts of the Connecticut Education Network (CEN).

- Develop and maintain an Enterprise Architecture Program for the State of Connecticut. Annual technology expenditures within the State of Connecticut exceed \$100M annually. Develop operational staffing models to support network operations 24x7x365
- Establish and maintain standards across nine technology domains
- Plan for technology end-of-life scenarios and associated impacts including fiscal planning and technology refresh
- Monitor, review and approve/disapprove IT procurements to assure compliance with adopted technology standards

Perform on-going budget planning (including eRate filing) and rate setting for services provided by the Connecticut Education Network to a wide variety of consumers including Higher Education, private K-12 and non-profit entities

Program Manager, Connecticut Education Network (CEN), 2000-2008

As Co-Program manager for six years, responsible for assuring the successful build out of the Connecticut Education Network to a highly diverse educational community including K-20 and libraries across the State of Connecticut. Project was completed on-time and within budget (~\$40M). Responsible for an on-going operational budget of \$3.2M which is subsidized by \$5.2M in E-Rate funds.

- Participation in network architecture JAD sessions for OSI Layers 1-3 of the CEN
- Develop operational staffing models to support network operations 24x7x365
- Vendor management for dark fiber, Frame Relay, ATM, RLAN DSL and Layer-2 WAN services
- Creation of outreach program for K-12/Library constituents including mentoring and training of CEN's available services and network security best practices
- Conduct on-going communications with budget and oversight entities including the Connecticut State Legislature (Appropriations and Bonding Committees) and the Commission for Educational Technology
- Creation and deployment of State Metropolitan Area Network for Executive branch agencies within the metro-Hartford area
- Manage oversight of the network documentation and monitoring control systems

Systems Developer, State of Connecticut, Department of Public Health, 1987-1996

Various systems developer positions responsible for both new application development. Evaluation of RFP for telecommunications services to consolidate 5 health and human service agencies. Implemented first local area network (LAN) within the agency.

- Developed new multi-user applications for DPH programs including School Based Health Centers (SBHC), Women Infants and Children (WIC), Vital Statistics and Health Care Licensing.
- Liaison for DPH to telecommunications committee charged with providing new telecommunications infrastructure and services within Capitol Avenue Complex including structured cabling systems (CAT-5/MM-Fiber), Cabletron switches and Fujitsu PBX.
- Installed, operated and managed DPH Layer-2 switching services
- Procurement and management of network monitoring services provided by ePresence
- Consolidation of multiple technologies into single LAN environment including Wang VS-300, HP-UX, MPE/iX and Banyan Vines.
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B.S., Management Information Systems 1988

Central Connecticut State University

G.P.A. 3.5

ROBIN BROWN

QUALIFICATIONS SUMMARY

- Certified Network Analyst—CCSE, CISSP, CCNA; SnortCP,
- GSIP – Secure Internet Presence

EXPERIENCE

Senior Network Engineer

University of Connecticut Storrs, CT Nov 2003–Present

Research, design, test and implement network security procedures for the Connecticut Education Network. Responsible for the monitoring and performance of a 10 gigabit backbone and multi-gigabit Internet and Internet2 ISP connections. Proficient in the design and configuration of routing protocols such as BGP and OSPF. Assist in the design, implementation and expansion of the MPLS VPN network infrastructure. Design, configure and install hardware, software and services to support the daily operation of the Connecticut Education Network including DNS, mail, web servers, routers and firewalls. Create and implement security policies, operating and documentation procedures, network monitoring and auditing tools including Nagios, Cacti, Netflow. Planning and implementing network infrastructure expansion, equipment refreshes and Internet service provider bandwidth requirements.

ISP Administrator

Total Communications East Hartford, CT Nov 2001–Nov 2003

Architect secure, scalable and fault tolerant infrastructure for Internet services provider. Design, configure and install hardware, software and services to support the daily operation of a business-to-business service including DNS, mail, web servers, routers and firewalls. Create and implement security policies, operating and documentation procedures, network monitoring and auditing tools.

Senior Security Engineer

Integralis US East Hartford, CT April 1999–Oct 2001

Project management for multi-homed Internet solutions. Network architect responsible for the planning and implementation of firewall, internet services, WAN and router equipment and configurations to facilitate high availability configurations. Pre and post sales technical support; Assessment of new technology; VPN solutions. Experienced in Checkpoint, Raptor and Gauntlet firewall technology on multiple platforms including Solaris, Linux, IPSO(Nokia) and Windows; Cisco and Bay Networks routers and load balancing with Alteon switches.

Stephen E. Verbil

Work Summary

Mr. Verbil has over 20 years of technical and managerial experience in the design, development, implementation, integration, operation, user training, testing, and maintenance of critical communications and data systems. His background includes wired and wireless local area networks (LAN), wide-area and municipal-area networks (WAN and MAN), low band, high band, UHF and 800 MHz land mobile radio (LMR) systems, as well as the construction, management and operation of 9-1-1 Public Safety Answering Points (PSAPs) and Emergency Operations Centers (EOC), with an emphasis on the automation/computerization of these functions.

Professional Experience

Connecticut DPS/OSET

2008 - Present

The Office of Statewide emergency Telecommunications (OSET), within Connecticut's Department of Public Safety, is the state agency which provides the Enhanced 9-1-1 system used by all municipalities in the state, develops and maintains the statewide emergency services telecommunication plan to provide coordinated emergency service telecommunications to all state residents; provides technical telecommunications assistance to state and local police, fire and emergency medical service agencies; and manages the funding for all of these activities. Working within the title of Emergency Telecommunications Manager, Mr. Verbil is currently serving as the Interim Director of OSET.

Verbil Communications, Inc.

2000-2008

A consulting firm providing analysis, design and implementation services for the public safety sector in the areas of Emergency Communications Centers, 9-1-1 implementation, Computer-Aided Dispatch and Records Management Systems, wired and wireless telecommunications. In this role, he provided program management and design consultant services for simulcast hybrid analog/P25 CAI trunking Systems, as well as conventional analog and digital radio systems – including propagation analysis; communications site permitting/construction/co-location; new communications centers, including dispatch consoles and 9-1-1 equipment; new fire station alerting systems; hybrid high speed data system configurations in local area network and municipal area network flavors; and management of the equipment installation, cutover and acceptance phases.

DIANE S. WALLACE
Gerald F. Werner
Consultant / Project Manager

Gerald is an independent contractual Networking Consultant and Project Manager with over 15 years of experience designing, implementing and managing multiple diverse voice and data networking infrastructure projects. Specializing in State and Local government projects related to Voice-over-IP transitions, Next Generation and Enhanced 911 Services as well as core resilient Fiber-Optic Networks, Gerald has successfully implemented many projects ranging in size from small local efforts to large, state-wide networking deployments on time and within budget. Additionally, Gerald has held several technical and management positions in the Information Technology field in both the public and private sectors over his 25+ year career including Technical Field Engineer, Implementation Lead, Network Services Manager and Director of Technology Services.

Gerald's list of core competencies include:

- Over 15 years experience designing, implementing and managing both large and small scale data/telecom network infrastructures ranging from 10 to 1200 end points
- Extensive experience in data network design, LAN/WAN engineering, capacity planning, VoIP and legacy telecommunication services
- Broad industry experience in various market segments and entity sizes including SMB, Enterprise, Local/State Government, Emergency Operations and Healthcare
- Experience in NG and E911 systems design, project planning and implementation management
- Extensive experience in developing project plans, requirements and gap analysis, development of RFP/RFI and Statements of Work, presentation reporting and end-to-end deliverables

Gerald believes that the primary key to a successful project is a solid technical design coupled with highly detailed implementation planning and includes significant (and on-going) clear communications with all team members and project stakeholders. Understanding the "why" is as equally important as the "do".

Gerald officially resides in Michigan and has a formal educational background in Electronic Engineering and Information Systems.

Germain Blais

State of Connecticut Network Subject Matter Expert

Experience

State of Connecticut/Department of Information Technology, East Hartford, CT

2000 – Present, Subject Matter Expert

- Developed and implemented the State Of Connecticut Enterprise Network consisting of 76 State Agencies with over 1000 Cisco Routers and Switches and over 50,000 IP nodes. Thirty years of networking experience with the State.
- Leadership role in the deployment of new technologies and products.
- Developed and implemented the State's Network Disaster Recovery hot-site plan;
- Developed and implemented the State's CORE-CT Financial Business Continuity Network Plan at UCONN Storrs using Dark Fiber with CWDM optics.
- Designed POP2 to be implemented at UCONN Storrs; eliminates remapping of circuits to hot-site, adds bandwidth, reduces costs. Allows for active/active usage.
- Redesigned and upgraded CORE Infrastructure with 10 Gigabits links as part of the State's IT Roadmap project.
- Participated on the design of the proposed E-911 PSDN project to be implemented in 2010.
- Designed and implemented the multi-homed ISP service for State Government; serves all 3 branches.
- Develops Network Architectural LAN/WAN/MAN network designs for highly available network.
- Designed and implemented web load balancing using Cisco's CSS and ACE server hardware.
- Designed Firewall architecture and implemented Internet Firewalls Policies for Internet, CJIS, and Core-CT networks.
- Designed scalable architecture to protect the e-mail server using Anti-virus/Spam control appliances.
- Implemented the use of IPsec VPN branch to branch technologies to reduce cost and add security.
- Works with FBI and IRS on bi-annual network security audits.
- Administrator for the State of Connecticut IP Addressing; American Registration of Internet Numbers.
- Serves on DOIT's Technical Review Board as Network SME.
- Managed network team and consultants; Interface with users and vendors.

State of Connecticut/Department of Information Technology, East Hartford, CT

1979 – 2000, Technical Systems Analyst 1, 2, 3

- Designed, installed, configured IBM Mainframe SNA, APPN/EE, and TCPIP Systems
- Designed, installed, configured and maintained complex routed LAN and WAN networks.

Training:

Extensive Cisco Networking Training, Checkpoint Firewall-1, Nokia Security Appliance, X-Force Proventia Intrusion Prevention, SNA, TCPIP, BGP, EIGRP, OSPF, CSS and ACE Load Balancers, Global Site Selector, DWDM Network Designs and Engineering Solutions, VoIP, Visio, Project, Power Point, Unix, ASP-NET, Web Page Creation, SQL, Networking Seminars and Conferences, in-house and Web based training sessions

Certification:

CCNA certified

Education:

Central Connecticut State University, BS in Management Information System, 1994
Manchester Community College, Associates in Data Processing, 1983

DIANE S. WALLACE

JACQUE C. CASSELLA

Middletown, CT

EXPERIENCE:

December 2005 - Present State of Connecticut, Department of Information Technology
Information Technology Subject Matter Expert

- Design, implement and troubleshoot highly-complex networking and security infrastructures in the State Data Center in East Hartford supporting applications and systems including but not limited to Single Sign On, Intranet (LAN) Switch Block, Internet Filtering Solution, Enterprise load balancing, Graphical Information Systems and Messaging (POP and Exchange) Environment.
- Design, implement and troubleshoot highly-complex technical solutions to support State of CT Disaster Recovery and Business continuity plans utilizing emerging high speed Optical solutions including CWDM, EWDM and DWDM to network disaster sites.
- Develop architectural design of a second Point of Presence for the State's Wide Area Network to provide redundancy in WAN circuits. Prepare design of redundant WAN Edge, Encryption, fiber path and optical signaling connecting the POP2 to State Data Center and DR sites. Prepare optical design and infrastructure footprint for networking equipment (and associated costs) to be located at the State's Second Data Center.

January 2004 - December 2005 Max Restaurant Group, Inc., Hartford, CT

Director of Information Technology

- Designed, developed and implemented an integrated information systems infrastructure to support the operation and record keeping for an independent restaurant chain with 10 physical locations. Designed and implemented company's Wide Area Network and local area networks utilizing serial and broadband circuits and Sonicwall firewalls.

June 1999 - January 2004 Nxegen, Inc. (Autorino Associates), Middletown, CT

Network Engineer / Network Services Manager

Shared Technologies Cellular (Autorino Associates), Hartford CT

Network Services Manager / Data Center Manager

Pelton's Drug Stores Inc., Middletown, CT

Director of Management Information Systems

United States Department of Labor, Bureau of Labor Statistics, Washington, D.C.

System Analyst / Economist

EDUCATION:

April 1994 - Connecticut Computer Service, Plantsville, CT & East Hartford, CT

Present Classes consisted of network design, implementation, and support in Cisco, Checkpoint, Nokia, Microsoft, Linux/UNIX, and Novell platforms.

July 1991 - United States Department of Labor Academy, Washington, D.C.

March 1994 Certificates received for 400 hours of classroom computer training in Mainframe environments.

June 1991 The University of Connecticut, Storrs, CT

Bachelor of Arts, June 1991, G.P.A. 3.53