

**Lee County Board Of County Commissioners  
Agenda Item Summary**

Blue Sheet No. 20031032

**1. REQUESTED MOTION:**

**ACTION REQUESTED:**

Approve installation of a continuous circuit of fiber optic cable and associated equipment that provides transport services for voice and data, to all County government buildings in the downtown Fort Myers area as discussed at the September 8, 2003 M&P meeting.

Authorize the transfer of funds in the amount of \$377,000 from fund 515, ITG reserves, to increase the core downtown phone system upgrades, project (208707), and adjust FY02/03 CIP accordingly..

**WHY ACTION IS NECESSARY:**

Cost savings and reducing the County's dependence on a single local carrier

**WHAT ACTION ACCOMPLISHES:**

Cost savings of approximately \$295,000 per year and provides County control of fiber access for all County buildings in the downtown area

**2. DEPARTMENTAL CATEGORY:**

COMMISSION DISTRICT # All

*C6E*

**3. MEETING DATE:**

*09-09-2003*

**4. AGENDA:**

- CONSENT
- ADMINISTRATIVE
- APPEALS
- PUBLIC
- WALK ON
- TIME REQUIRED:

**5. REQUIREMENT/PURPOSE:**  
*(Specify)*

- STATUTE
- ORDINANCE
- ADMIN. CODE
- OTHER

**6. REQUESTOR OF INFORMATION:**

- A. COMMISSIONER
- B. DEPARTMENT ITG
- C. DIVISION

BY: Jim Desjarlais

**7. BACKGROUND:**

Currently lease fiber from a local telecom carrier. The project is to install a fiber Sonet ring connecting Public Works, SunTrust, Justice Center, County Administration, Wachovia, City Hall and Codes Enforcement buildings with Sprint, KMC and US Lec. This will allow the ability to use any of the transport carriers for new services and provide dual access paths to all of the government buildings. ROI is estimated to be 15 months.

Funds will be available in 20870751500.506540 upon transfer from reserves.

**8. MANAGEMENT RECOMMENDATIONS:**

**9. RECOMMENDED APPROVAL:**

A Department Director	B Purchasing or Contracts	C Human Resources	D Other	E County Attorney	F Budget Services	G County Manager												
<i>[Signature]</i>				<i>[Signature]</i>	<table border="1"> <tr> <td>QA</td> <td>OM</td> <td>Risk</td> <td>GC</td> </tr> <tr> <td><i>[Signature]</i></td> <td><i>[Signature]</i></td> <td><i>[Signature]</i></td> <td><i>[Signature]</i></td> </tr> <tr> <td><i>8/27/03</i></td> <td><i>8/27/03</i></td> <td><i>8/27/03</i></td> <td><i>8/27/03</i></td> </tr> </table>	QA	OM	Risk	GC	<i>[Signature]</i>	<i>[Signature]</i>	<i>[Signature]</i>	<i>[Signature]</i>	<i>8/27/03</i>	<i>8/27/03</i>	<i>8/27/03</i>	<i>8/27/03</i>	<i>[Signature]</i>
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<i>8/27/03</i>	<i>8/27/03</i>	<i>8/27/03</i>	<i>8/27/03</i>															

**10. COMMISSION ACTION:**

- APPROVED
- DENIED
- DEFERRED
- OTHER

Rec. by CoAtty
Date: <i>8-27-03</i>
Time: <i>3:00</i>
Forwarded To:
<i>City Admin</i>
<i>8-27-03</i>

RECEIVED BY COUNTY ADMIN
<i>8/27/03</i>
<i>3pm RT</i>
COUNTY ADMIN FORWARDED TO:
<i>SP</i>
<i>5pm</i>



**MANAGEMENT & PLANNING COMMITTEE  
AGENDA REQUEST FORM  
COMMISSION DISTRICT # ALL**

**PRESENTED BY:** Jim Desjarlais/ Admin **REQUESTED BY:** Jim Desjarlais  
Name/Department

**TITLE OF ITEM FOR AGENDA:**

Downtown Campus SONet Fiber optic ring

**1. DESCRIPTION AND OBJECTIVE OF THE ISSUE**

Installation of a continuous circuit of fiber optic cable and associated equipment that provides for transport services for voice and data to all County government buildings in the downtown Fort Myers area.

**2. PROPOSED POLICY, PROCEDURE OR PLAN OF ACTION**

Install fiber and associated equipment as the City of Fort Myers tears up the downtown streets for it's streetscaping plan as part of the downtown redevelopment effort. Estimated start date of Q2 FY 03/04

**3. OPTIONS (List Advantages/Disadvantages of Each Option Listed)**

- 1) Continue leasing fiber optic services from Sprint  
Advantages: No additional staff or resources required  
Disadvantages: Expensive (\$43K/month) and Sprint control of the network
- 2) Provides County control of fiber access for all County Government buildings in the Downtown area.  
Advantages: ROI is equal to 15 months (\$295K savings per year). Reduces dependence on local carrier.  
Disadvantages: Adds one technician to oversee circuits.

**4. FINANCIAL IMPACTS/FUNDING SOURCE**

\$377,000 – ITG fund reserves

**5. STAFF RECOMMENDATION AND JUSTIFICATION FOR RECOMMENDATION**

Staff recommends proceeding – ROI of 15 months. See attached backup

6. **MANDATED?**    Y     N     **BY WHAT AUTHORITY?**

DEPARTMENT DIRECTOR SIGNATURE	COUNTY MANAGER SIGNATURE	MEETING DATE	TIME REQUIRED
		9/8/03	15 minutes



# Downtown Campus SONet Fiber Solution for Lee County

July 31, 2003

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## **Executive Summary**

As Lee County continues to grow, it is critical that the necessary voice and data infrastructure grows as well. This is necessary to allow for continuous and flexible connectivity for the county and its constituents. One way to do this is to install a private a Synchronous Optical Network (SONet Ring) in the downtown area of Fort Myers.

A SONet Ring is a continuous circuit of fiber optic cable and associated equipment that provides for multiple access paths to any building on the ring. The SONet Ring provides transport services for voice and data (moving digital information from one place to another). The SONet Ring network will consist of electronics (network equipment) and the connection of a single mode (higher band width) fiber in a ring configuration. This continuous loop can eliminate outages caused by a fiber cut due to the multiple path configuration, i.e. if a section of the fiber is cut, network traffic could automatically be re-routed in the other direction around the loop.

In order to properly evaluate the feasibility of a SONet Ring for the downtown area, this paper discusses the advantages, cost, savings opportunities, and future plans. Currently all transport services are provided by Sprint with a single connection to the Sprint central office. The existing fiber is old and in dire need of replacement.

The total onetime cost estimate of this project is \$377,000. These upfront costs are for the equipment, design, engineering, project management and testing of the SONet Ring. A monthly cost increase of \$6,250 will be needed to add an additional technician to care for the electronics and the circuits. The County can save \$24,581 a month over current cost with Sprint or a yearly savings of \$294,972

### **Advantages of migration to a SONet Ring**

- Eliminating copper wiring, and replacing the decomposing existing fiber, the reliability, survivability and recoverability of Lee County's telecommunications and data network will be greatly improved
- Provides the ability to manage the entire telecommunications network from a single central location
- Reduce turnaround time for new telecommunication service orders by 50%
- Provides the ability to proactively manage all voice and data services internal to Lee County Government
- Provides an annual cost savings of ~ \$294K
- Reduces the dependency on a single Telecommunications vendor for new services and repairs

### **Conclusion**

- Lee County is striving to be a model municipality. This SONet Ring, built as a transport facility, will greatly enhance the county's ability to move voice and data traffic between downtown buildings and the infrastructure to easily expand to meet the County's future growth.
- We recommend that Lee County adopt the SONet Ring technology and move forward with the approval of this project

### **Scope**

This project will involve the engineering of conduit and manholes for downtown Ft Myers, to be placed when the streets are torn up for City of Fort Myers redevelopment project. Fiber Optic cable can be placed under the street, from the Public Works building to the Justice Center, to the Sun Trust Building, to the Admin Building and to the Hendry St. Building, as the paths are available.

To take full advantage of the SONet Ring concept, the fiber needs to be extended from downtown campus to the Constitutional Complex and thru Sprint, KMC and US LEC, and then back to Public Works (see attached map). This extension will allow the ability to use any of the transport carriers for new services and provide dual access paths to all of the buildings on the SONet Ring. By taking advantage of existing leased fiber to sites outside of the downtown campus, (Public Safety and the Emergency Ops Center) we can extend the SONet Ring concept to those buildings as well.

Electronics (see table below), commonly referred to as network elements, can now be installed at each site, connected to the fiber and tested.

<b>EQUIPMENT</b>	<b>DESCRIPTION</b>	<b>PRICE each</b>	<b>QTY</b>	<b>EXTENDED PRICE</b>
Fujitsu FLM 600	OC12 SONet Mux, OC12 in/oc3, ds3out	7800	1	7800
ADC 24 port SC fiber pnl	Fiber termination panel SC-24 port	235	2	470
Hendry Fuse Panel	10 position 60 amp DC in / 15 amp out	250	1	250
Fiber Distribution Sys	Misc parts for distribution of fiber	850	1	850
Carrier Access 3-1 mux	Multiplexer DS3 to T1 48v DC powered	1500	2	3000
ADC DSX3 cross connect	Panel for connecting/terminating DS3's	600	1	600
ADC DSX1 cross connect	Panel for connecting/terminating DS1's	900	1	900
Misc wiring ds3,ds1,pwr	Communications Wiring	2380	1	2380
		14515		<b>16250</b>

Each site below, would have the equipment and cost associated with that particular site.

<b>Convert to SONet by Sitename</b>	<b>Cost Per Site</b>
Public Works	\$16,250.00
Constitutional Complex	\$16,250.00
Administration Bldg	\$16,250.00
SunTrust Bldg	\$16,250.00
Justice Center	\$32,500.00
Hendry Street Bldg	\$16,250.00
Downtown Buildings	<b>\$113,750.00</b>
Public Safety @ Six Mile	\$16,250.00
Emergency Ops Center	\$16,250.00
Sprint @ Lee St	\$16,250.00
US LEC	\$16,250.00
KMC Telecom	\$16,250.00
Other Buildings	<b>\$81,250.00</b>
<b>Total Cost</b>	<b>\$195,000.00</b>

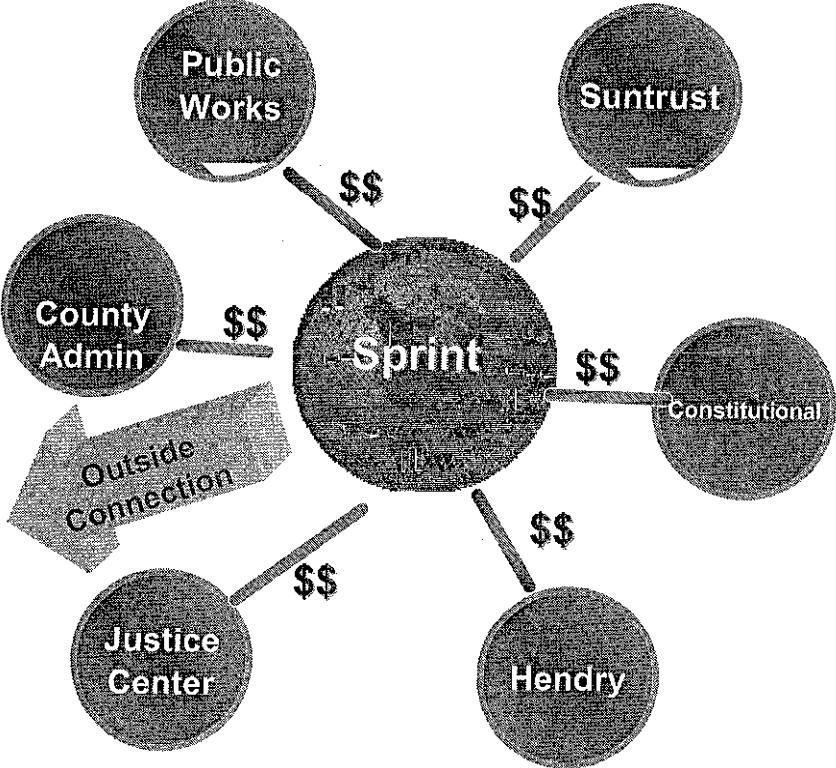
Once the fiber is in place, the Circuits listed below could then be transferred from Sprint to the County's network. All of the circuits listed originate or terminate or both in one of the buildings downtown.

Downtown Campus Sonet Fiber Solution for Lee County 0731.doc

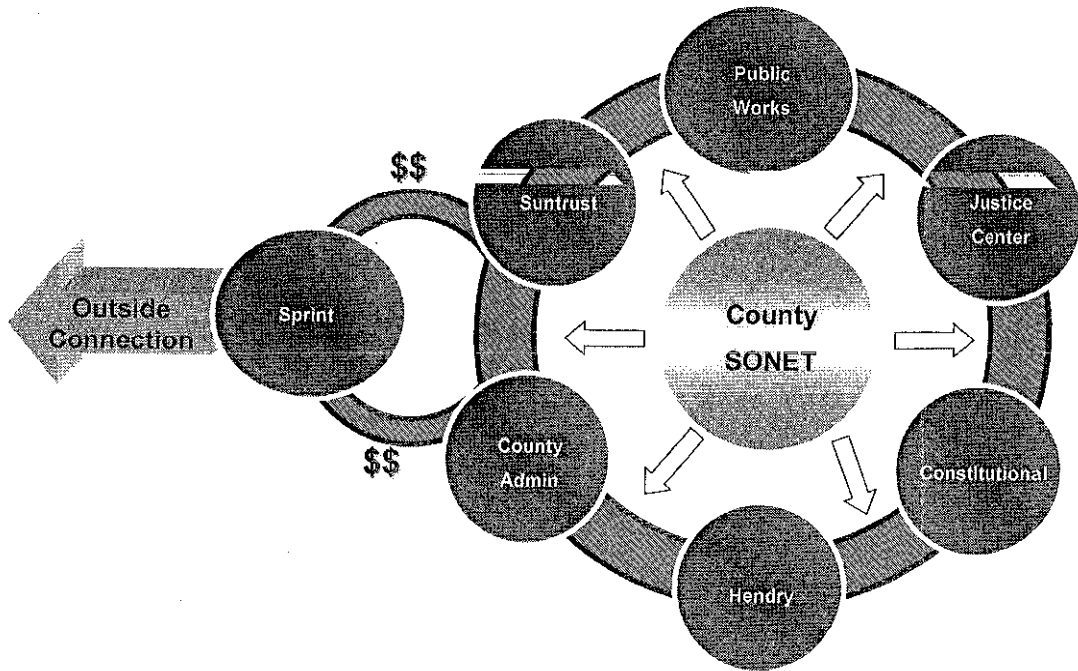
Circuit ID	From	To	Circuit Type	Current Costs	New Cost	Savings
60dhxx460210uflg	10520 Reynolds St BNSP Elect.	2480 Thompson St MDF Elections	T1	\$593.50	\$255.21	\$338.30
95dhza242757uflg	1520 Lee St CO	14750 Six Mile Cypress Pkwy Pub Saf	PRI	\$731.94	\$314.73	\$417.21
95dhza254603uflg	1520 Lee St CO	1500 Monroe St Pub Works	CH T1	\$681.94	\$293.23	\$388.71
95dhza254604uflg	1520 Lee St CO	1500 Monroe St Pub Works	CH T1	\$681.94	\$293.23	\$388.71
95dhza254605uflg	1520 Lee St CO	1500 Monroe St Pub Works	CH T1	\$681.94	\$293.23	\$388.71
95dhza254607uflg	1520 Lee St CO	1500 Monroe St Pub Works	CH T1	\$681.94	\$293.23	\$388.71
95dhza242296uflg	1520 Lee St CO	1700 Monroe St JC	PRI	\$731.94	\$314.73	\$417.21
95dhza242299uflg	1520 Lee St CO	1700 Monroe St JC	PRI	\$681.94	\$293.23	\$388.71
95dhza242301uflg	1520 Lee St CO	1700 Monroe St JC	PRI	\$681.94	\$293.23	\$388.71
95dhza243370uflg	1520 Lee St CO	1700 Monroe St JC	PRI	\$681.94	\$293.23	\$388.71
95dhza243371uflg	1520 Lee St CO	1700 Monroe St JC	PRI	\$681.94	\$293.23	\$388.71
95dhza243375uflg	1520 Lee St CO	1700 Monroe St JC	PRI	\$681.94	\$293.23	\$388.71
95dhza245143uflg	1520 Lee St CO	1700 Monroe St JC	PRI	\$681.94	\$293.23	\$388.71
95dhda243377uflg	1520 Lee St CO	1700 Monroe St JC	PRI	\$681.94	\$293.23	\$388.71
60ipza475597uflg	1520 Lee St CO	2000 Main St Ste 101 Pretrial	PRI	\$585.00	\$251.55	\$333.45
95ipza256822uflg	1520 Lee St CO	2050 Lee St Library Admin	PRI	\$696.00	\$299.28	\$396.72
60ipza456160uflg	1520 Lee St CO	2115 2nd St 5th flr MDF	PRI	\$585.00	\$251.55	\$333.45
95dhza249422uflg	1520 Lee St CO	2115 2nd St 5th flr MDF	PRI	\$681.94	\$293.23	\$388.71
95ipza371743uflg	1520 Lee St CO	2201 2nd St Clerk Probate	PRI	\$1,046.61	\$450.04	\$596.57
95dhza257903uflg	1520 Lee St CO	2480 Thompson St Tax	CH T1	\$108.00	\$46.44	\$61.56
95dhza257902uflg	1520 Lee St CO	2480 Thompson St Tax	CH T1	\$108.00	\$46.44	\$61.56
95dhza257901uflg	1520 Lee St CO	2480 Thompson St Tax	CH T1	\$412.00	\$177.16	\$234.84
95dhza264967uflg	1520 Lee St CO	2480 Thompson St Tax	CH T1	\$253.34	\$108.94	\$144.40
60dhza532445uflg	1520 Lee St CO	2480 Thompson St Tax	CH T1	\$885.00	\$380.55	\$504.45
		2480 Thompson St Tax	T1	\$997.00	\$428.71	\$568.29
60dhza470761uflg	1520 Lee St CO	2480 Thompson St Tax IVR	CH T1	\$882.35	\$379.41	\$502.94
60dhza470762uflg	1520 Lee St CO	2480 Thompson St Tax IVR	CH T1	\$882.35	\$379.41	\$502.94
60ipza458280uflg	1520 Lee St CO	2665 Ortiz Av EOC	PRI	\$585.00	\$251.55	\$333.45
60ipza444494uflg	1520 Lee St CO	3410 Palm Beach Blvd Terry Park	PRI	\$585.00	\$251.55	\$333.45
95dhza319001uflg	1700 Monroe 6th flr MDF	2480 Thompson St MDF Tax Coll	T1	\$145.88	\$62.73	\$83.15
95dhza269214uflg	1700 Monroe 6th flr MDF SAO	2000 Main St Ste 600 SAO	T1	\$145.88	\$62.73	\$83.15
95dhza371026uflg	1700 Monroe 6th flr Pub Saf	2210 Peck St 2nd flr FMY PD PUB Safety	T1	\$185.00	\$79.55	\$105.45
95hwda224315uflg	1700 Monroe St	Hwy 80 Labelle	56k	\$205.80	\$88.49	\$117.31
95dhza271569uflg	1700 Monroe St Ct Admin	1930 SE 23rd Ter Cornet	T1	\$327.85	\$140.98	\$186.87
95dhza344221uflg	1700 Monroe St ITG Group	1930 SE 23rd Ter Cornet	T1	\$315.79	\$135.79	\$180.00
60dhza433449uflg	1700 Monroe St JC	3410 Palm Beach Blvd Terry Park Cornet	T1	\$291.76	\$125.46	\$166.30
60dhza464803uflg	1700 Monroe St PUB DEF	1039 SE 9th Pl 1st Fl CPR Pub Def	T1	\$258.40	\$111.11	\$147.29
95dhza371025uflg	1700 Monroe St Pub Safety	2210 Peck St FMY PD Pub Safety Radio	T1	\$185.00	\$79.55	\$105.45
95qeda259982uflg	1765 Henderson Ave	1520 Lee St Frame Switch	56k Frame	\$101.80	\$43.77	\$58.03
60dhza457641uflg	18700 Mcgregor Blvd Tolls	1930 SE 23rd Ter Cape Tolls	T1	\$378.10	\$162.58	\$215.52
60dhza457747uflg	1930 SE 23rd Ter Cape Tolls	10100 College pkwy Cape Toll	T1	\$378.55	\$162.78	\$215.77
60dhza457700uflg	1930 SE 23rd Ter Cape Tolls	1366 Colonial Blvd Midpoint	T1	\$235.00	\$101.05	\$133.95
95dhza266773uflg	2201 2nd St Ct Admin I.T.	1700 Monroe St Ct Adm IVR	T1	\$145.88	\$62.73	\$83.15
95dhza295402uflg	2480 Thompson St Elections	1039 SE 9th Pl 1st Fl CPR elections	T1	\$335.35	\$144.20	\$191.15
95dhza295403uflg	2480 Thompson St Elections	1930 SE 23rd Ter Cornet	T1	\$335.35	\$144.20	\$191.15
95dhza326564uflg	2480 Thompson St Elections	3040 fowler St	T1	\$185.00	\$79.55	\$105.45
95dhza326565uflg	2480 Thompson St Elections	3040 Fowler St	T1	\$185.00	\$79.55	\$105.45
60dhza481893uflg	2665 Ortiz Av EOC	10591 Safety Ln Ftmy Tower Site EOC	T1	\$92.05	\$39.58	\$52.47
60dhza460206uflg	2665 Ortiz Av EOC	194 Lee Blvd Lhac Tower EOC	T1	\$385.05	\$165.67	\$219.48
60dhza460209uflg	2665 Ortiz Av EOC	2050 Queen St Tower Site EOC	T1	\$187.05	\$80.43	\$106.62
95dhza270307uflg	2665 Ortiz Av EOC Ops T1	16000 Chamberlain Pkwy Port Authority	T1	\$378.55	\$162.78	\$215.77
95dhza270308uflg	2665 Ortiz Av EOC Ops T1	16000 Chamberlain Pkwy Port Authority	T1	\$378.55	\$162.78	\$215.77
60dhza460204uflg	2665 Ortiz Av Radio Room	10948 Enterprise Av BNSP EOC	T1	\$385.05	\$165.57	\$219.48
60dhza460205uflg	2665 Ortiz Av Radio Room	10948 Enterprise Av BNSP EOC	T1	\$385.05	\$165.57	\$219.48
60dhza460217uflg	2665 Ortiz Av Radio Room	2601 Linwood Av Alva Tower Site	T1	\$203.55	\$87.53	\$116.02
60dhza472081uflg	2665 Ortiz Av Radio Room	3501 Burnt Store Rd Cape Tower EOC	T1	\$387.00	\$166.41	\$220.59
60dhza409924uflg	83 Pondella Rd Human Svcs	1700 Monroe St 6th Fl	T1	\$145.88	\$62.73	\$83.15
60ipza425531uflg	BNSP CO	21100 Three Oaks Pkwy Library	PRI	\$585.00	\$251.55	\$333.45
60ipza463700uflg	Cape Coral CO	1930 SE 23rd ter CPR Midpoint Bldg Faci	PRI	\$585.00	\$251.55	\$333.45
60dhza421443uflg	North Ftmy CO	83 Pondella Rd Human Svcs	CH T1	\$273.05	\$117.41	\$155.64
	Total Costs Comparison			\$27,563.53	\$11,852.32	\$15,711.21
	Leased Equipment Cost			\$15,120.00	\$0.00	\$15,120.00
	Additional Technician			\$0.00	\$6,250.00	-\$6,250.00
	Total Monthly Savings					\$24,581.21
	Total Annual Savings					\$294,974.55



### Appendix A – Current Circuit Layout



## Appendix B – Future Layout of Circuits



## Appendix C – Total Cost of SONet Ring

DESCRIPTION	PRICE each	QTY	EXTENDED PRICE
Conduit design and engineering	\$50,000	1	\$50,000
Fiber strand (144 Strand)	\$2.45	10,000	\$24,500
Fiber Installation	\$42,500	1	\$42,500
SONet Network Electronics	\$16,250	12	\$195,000
Electronics Installation	\$24,000	1	\$24,000
Conformance Testing	\$6,000	1	\$6,000
Project Management	\$35,000	1	\$35,000
			<b>\$377,000</b>

Breakeven Point

**Total Cost divided by monthly savings \$377,000 / \$24,581 =**

**15.33 months**

## Appendix D – Proposed Fiber Routes

