

City of Jacksonville, Florida

Telecommunications

Master Plan

Appendices

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Black & Veatch Corporation
Telecommunications Division

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Appendix A

City Counsel Resolution Chartering Telecommunications Master Plan

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City Counsel Resolution Chartering Telecommunications Master Plan

Introduced by Council President Carlucci and the Special Committee on Telecommunications and Technology (Chairperson Higgs and Council Members Brown, Holland, Overton, Soud, Chandler and Yates) and Council Members Alvarez, Carter, Daniels, Fullwood, Holzendorf, Jenkins, Lockett-Felder, Ray, Rustin, Self and Southwell at the request of the Mayor:

RESOLUTION 2002-147-A

A RESOLUTION CONCERNING THE CITY OF JACKSONVILLE'S HIGH TECH/TELECOMMUNICATIONS INFRASTRUCTURE, INCLUDING FIBER OPTICS, CABLE, WIRELESS, AND OTHER TECHNOLOGIES; REQUESTING A COMPREHENSIVE STUDY CONCERNING THE CITY'S TELECOMMUNICATIONS INFRASTRUCTURE AND CREATION OF A HIGH-SPEED, COUNTY-WIDE NETWORK; PROVIDING FOR A REPORT, FINDINGS, ANALYSIS, AND RECOMMENDATIONS TO THE MAYOR AND CITY COUNCIL WITHIN 180 DAYS; PROVIDING AN EFFECTIVE DATE.

WHEREAS, the nation and the City of Jacksonville ("City") are undergoing a transition from an industrial age to the information age and knowledge-based economy; and

WHEREAS, the infrastructure needed to properly serve Jacksonville in the information age and knowledge-based economy includes more than traditional utilities such as water, electric, and sewer; and

WHEREAS, this new infrastructure, which includes fiber optics, cable, hybrid fiber/coaxial cable, wireless, and other technologies, is sometimes referred to as the "communications infrastructure", "telecommunications infrastructure" or "high-tech infrastructure;" and

WHEREAS, this new, high tech infrastructure is fundamental to economic development, addressing the digital divide, efficiency and productivity, cost-effectiveness and delivering wide-ranging telecommunication services, including cable TV, high-speed internet, and broadband services, to the public, schools, and government; and

WHEREAS, the City believes that this high tech infrastructure is fundamental to Jacksonville's future and must be provided to all citizens and businesses county-wide and;

WHEREAS, the Better Jacksonville Plan, which includes a 1.5 billion dollar investment in road and transportation infrastructure, presents an unprecedented opportunity to further

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develop this high tech infrastructure, particularly through the installation of dry conduit for fiber optics in conjunction with road and sewer projects; and

WHEREAS, the City has experienced continuing customer service, technical, cost, and other difficulties with its local cable franchise operator, which serves approximately 200,000 subscribers county-wide; and

WHEREAS, wireless technology pilots have been created in Jacksonville, both at The Jacksonville Landing and in areas set forth in proposals currently pending before the Council; and

WHEREAS, telecommunications infrastructure makes extensive use of public right-of-ways, with construction often resulting in considerable public cost and inconvenience; and

WHEREAS, various entities of the consolidated government, including independent authorities, constitutional officers, the executive and legislative branches, the State Attorney's Office, and Public Defender's Office, are extensive users of telecommunications infrastructure and own and operate substantial networks and purchase substantial amounts of telecommunications equipment and services; and

WHEREAS, the City desires a comprehensive study, consideration, and approach to the high tech infrastructure and a high speed, high quality county-wide network that provides a wide range of telecommunications services; and

WHEREAS, a number of experts have recognized that communities with a municipal electric utility are well positioned to develop this needed telecommunications infrastructure since municipal utilities can utilize and build upon their existing network, infrastructure, billing and customer service systems, transmission lines, and connections to homes and businesses; and

WHEREAS, over 300 municipally owned electric utilities nationwide are planning or building telecommunication networks and municipal electric utilities across the nation are leading the industry in the construction and development of advanced telecommunication services; and

WHEREAS, Jacksonville's municipally owned public utility, JEA, the largest public utility in the State of Florida and eighth largest nationally, is one of the most respected and well managed public utilities in the country and makes a contribution of over \$76,000,000 (seventy-six million dollars) a year to the City's general fund through its efficient and cost effective operation of electric, water, and sewer services; and

WHEREAS, JEA, consistent with emerging electric industry practices, is likely to construct and develop substantial telecommunications infrastructure in support of its internal operations, with the potential for significant reductions of operating costs; and

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WHEREAS, it may be possible to create community benefits and a substantial new revenue contribution to the City's general fund through municipal construction, development, operation, ownership, and/or contracting for this high tech infrastructure; and

WHEREAS, a number of cities and counties around the country, including Tacoma, Washington; Memphis, Tennessee; and Grant County, Washington have constructed and developed municipally-owned high speed networks city-wide; and

WHEREAS, it appears that few cities in the country have yet developed a "Telecommunications Master Plan"; and

WHEREAS, Jacksonville has an opportunity to become "The Nation's Most Wired City" through its implementation of the Better Jacksonville Plan and a visionary approach to a high quality, high speed county-wide network; and

WHEREAS, the City believes that universal access of all citizens, businesses, government, and schools to this new infrastructure is vital to economic development, cost savings, quality service, and making Jacksonville competitive in the information age and knowledge-based economy; now therefore

BE IT RESOLVED by the Council of the City of Jacksonville:

Section 1. Study of Telecommunications Infrastructure and Creation of High-Speed, County-Wide Network. The Mayor's Office is requested to commission a comprehensive study ("Telecommunications Master Plan") of the City's high tech/telecommunication infrastructure needs (including cable, fiber optics, hybrid fiber/coaxial cable, wireless and other technologies) and a cost benefit study of a high speed, county-wide fiber optic/cable telecommunications network.

Section 2. City Task Force on Telecommunications Infrastructure. A City Task Force on Telecommunications Infrastructure ("Task Force") is hereby established to provide support, technical information and knowledge, coordination, advice, and whatever other assistance may be needed in conducting the study. The Task Force is requested to include, but is not limited to, the Director of the City's Public Works Department, the Executive Director of the Jacksonville Transportation Authority (JTA), the Managing Director of JEA, the Chief Information Officer for the Duval County Public Schools, the Council Auditor and the Chairman of the Consolidated Government CIO Council. The Mayor, Council President Matt Carlucci, and the Chair of the Council Special Committee on Telecommunications and Technology, Alberta Hipps, may jointly appoint additional task force members.

Section 3. Report, Findings, Analysis, and Recommendations. Within 180 days of the adoption of this resolution, the study is to be presented, orally and in writing, to the Mayor and City Council. The Mayor and Council request that the study contain a formal report, as well as findings, analysis, and specific recommendations.

Findings and Analysis

The study should address, but is not limited to:

(a) A review and analysis of Jacksonville's current fiber optic infrastructure, current plans to add to that infrastructure, and what fiber optic telecommunications network is needed to serve Jacksonville in the future.

(b) A review of wireless and other technologies, and the role they may play as part of a comprehensive approach to the high tech infrastructure.

(c) A review and analysis of the City's cable infrastructure, service, costs, and operations, including a viability study and cost benefit analysis of a municipally owned and/or operated cable TV network.

(d) A financial analysis for each area above, including the public/private investment that may be necessary, an analysis of the rate of return to recoup that investment, and the potential for a new, ongoing contribution to the City's general fund.

(e) A technical, qualitative, and cost analysis in each area.

(f) A review and analysis of the role of the Better Jacksonville Plan in developing the high tech infrastructure.

(g) A review and analysis of models from around the country, including Tacoma, Washington, in which Tacoma Power, Tacoma's municipal electric utility, constructed and developed a city wide high speed fiber optic telecommunications network, and now offers to its customers a wide range of telecommunications services, including cable TV, internet services (through private internet providers [ISPs]), and other broadband services.

(h) A review and analysis of how to improve the management and utilization of public right-of-ways in developing telecommunication infrastructure.

(i) A review and analysis of likely JEA development of telecommunication infrastructure in support of internal operations, the likely cost savings from such infrastructure, and the incremental costs involved in extending such infrastructure county-wide.

(j) A review and analysis of the potential cost savings, and other potential benefits, to entities of the consolidated government through an integrated use of a high quality, high-speed county-wide network.

(k) A review and analysis of the potential synergy and benefits of a high speed county-wide network and the construction of the Jacksonville Network Access Point (NAP).

(l) An analysis of the current status of the City's high tech infrastructure and what is needed to be competitive in a knowledge-based economy and provide universal access to all citizens, businesses, government entities, and schools county-wide.

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Recommendations

The Mayor and Council request that the study include a number of proposals and recommendations for the City to consider. These proposals and recommendations include, but are not limited to:

(a) Recommendations concerning the construction, development, ownership, and/or operation of the county's high tech infrastructure, including the development of a county-wide, high-speed fiber optic/cable telecommunications network.

(b) Alternatives for the Council and Mayor to consider in constructing, developing and operating this network, including:

- (1) The creation of a new entity for this purpose;
- (2) The use of Jacksonville's municipal electric utility, JEA, for this purpose;
- (3) A public-private, privatized, or other approach for this purpose.

(c) Recommendations on a comprehensive, integrated approach to the management of construction in and use of public right-of-ways for telecommunications infrastructure purposes.

(d) Recommendations on how to integrate public sector use, for all entities of the government, from existing networks to a high speed, high quality county-wide network.

(e) Proposal(s) on how the goals and objectives of the City's Minority Business Enterprise (MBE) Program may be furthered and enhanced through this initiative.

(f) Any other proposals or recommendations that address developing the high tech infrastructure needed for the City to compete in the knowledge-based economy and to provide universal access for all citizens and businesses in Jacksonville.

Section 4. Effective Date. This resolution shall become effective upon signature by the Mayor or upon becoming effective without the Mayor's signature.

Form Approved:

/s/ Cheryl R. Peek

Office of General Counsel

Legislation Prepared by: Richard A. Mullaney

General Counsel

Appendix B
JAXMAN Financial Variable Descriptions

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Introduction

The following provides an analysis and review of each of the variables used in the financial evaluation of all scenarios.

Basic assumptions are:

- That the initial project rollout will encompass only MAN operations for government agency connections.
- That the initial phase of the project includes approximately 223 miles of existing MAN fiber and 316 miles of new fiber for MAN completion, distribution and government agency connections.
- If connection to private commercial entities occurs, it will be limited to circuit only sales and will be largely dependant upon access of those commercial entities to existing fiber entrances to the network.
- That only when Fiber to the Home is deployed, will full commercial services be offered.

Variables – Financials

1. Average Interest Earned Rate: The Interest Earned Rate accounts for the income expected from cash balances invested at a basic interest rate. The percentage provided by the Task Force is used in the model.
2. Average Interest Expense Rate: The Interest Expense Rate provides the cost of capital interest rate and subsequently the expense throughout the analysis period. The percentage provided by the Task Force is used in the model.

Variables – Capital Expenditures

1. Network Miles: This total mileage figure (variable 1a) represents the entire plant footage at system completion, including full deployment of fiber to the home. The total mileage as estimated in the conceptual design is 5,885 miles.

Variable 1b, MAN miles only, indicates the mileage associated with the MAN backbone.

Variable 1c, Existing COJ, provides an input variable for City of Jacksonville fiber that may be used in lieu of new mileage. The conceptual design did not include any COJ existing mileage.

Variable 1d, Existing JEA, provides an input variable for existing JEA fiber that may be used for the network. The conceptual design includes 223 miles of existing JEA fiber.

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Variable 1e, Build Out Period, is the anticipated build out period for the MAN mileage only.

Variable 1f, MAN Miles Annual Build, distributes the MAN backbone miles through the designated build period.

Variable 1g, FTTH/B Miles Annual Build, distributes the FTTH/B mileage through the designated build period.

Variable 1h, Total Miles Built, summarizes the total miles built.

The model uses the total mileage of the system as a baseline for formulas in many different inputs throughout the model.

2. Average MAN Construction Cost per Mile: The per mile cost attributed to additional MAN construction is \$80,020 per mile. This cost includes additional MAN network construction needed to tie the existing fiber infrastructure together, distribution construction to interconnect the 300 locations identified as government agency connections and the additional equipment necessary to complete this backbone network element. The number used was formulated in the conceptual design.

Only the capital necessary to build the 316 remaining miles has been included in the capital requirements for the system. This model has not made financial assumptions regarding the existing 223 miles used as a base for MAN.

3. Average FTTH/B Network Construction Cost per Mile: An estimated cost per mile of \$39,400 for the FTTH/B distributed network construction cost was developed and is used for this variable. The figure considers 40% underground and 60% aerial construction. A per mile equipment cost is considered separately (see variable 4).
4. Average Equipment Cost Per Construction Mile: Considering the rapid change occurring and the maturation of the FTTH/B industry, the model provides a separate variable input for FTTH/B equipment. Included in this variable are the DWDM equipment, Core and Access Switches and FTTH/B network and distribution equipment necessary to provide network connections to customers. The conceptual design estimate for this variable is \$9,200 per mile.

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The reason for separating this and not providing a per mile cost encompassing all necessary equipment, is that over the five year time period prior to FTTH/B deployment, cost may vary in respect to equipment. The separate variables allow the flexibility to control fiber and construction cost separately from equipment costs. Equipment may continue to be improved; cost reduced, or affected by new emerging technology that presents new options. Meanwhile, fiber and construction costs may change at a slower or different rate.

5. FTTH/B Contingency per Construction Mile: This is a contingency variable and is a percentage of the total mileage construction cost including equipment 5% was used in our analysis.
6. Build Percent Complete: This variable is used to determine how much of the totally complete system, 5,885 miles, is built in a single year. The MAN represents 6.5% of the total network mileage in the first period.

The number is only increased by year if new construction to the network is to be completed that year.

In explanation, our inputted numbers reflect that the FTTH/B and all associated capital expenditures begin in year 4 with total expenditures for the Head-end portion being concluded in year 5. The build rate percentage remains at the constant 9.2% (periods 2 and 3) until year 4 when new construction increases the percentage to 22%. It continues to escalate from that point on.

The percentage take rates also show video customers beginning in year 5 and escalating on up. When or if more money is infused into the construction of the system at different time intervals, then this category and the others associated with it can change to reflect the impact. Likewise, if the deployment is delayed, these numbers can be changed to show the results of that occurrence.

7. ISP Setup and Deployment Costs: This variable allows for all equipment, software and training to allow a service provider to lease equipment from Jacksonville and to offer service.

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8. Customer Installation Costs (Residential): The costs for customer drops (materials and installation) and customer premise equipment are captured by this variable.
9. Customer Installation Cost (Commercial): This variable is to cover the cost of the customer premise network devices for FTTH/B network applications. An average value was used base upon the total construction.

Note: Different costs are used for the demand based limited access analysis.

10. Video Headend Cost to Construct: This variable permits headend construction costs to be allocated as required.
11. Central Office Size: The central office will contain the data center or head end to provide a lit network for the service providers.
12. Central Office Construction Assumptions – Cost/Classifications: This number is the cost of renovation of central office space. This number was provider by the Task Force for the Jacksonville area.
13. Co-Locations Space Available: This variable lists the total amount of space available for co-location.

Operations and Maintenance

1. Staffing Parameters: In respect to staffing, personnel requirements are tied to the total number of subscribers being served via the network. The staffing parameters are based on video customers. If no video customers are present, the model automatically defaults to the commercial customers. Therefore, it is the total number of any customers that determines the level of staff needed.
2. Staffing Beginning Gross Annual Salaries: The salaries were provided the Task Force.
3. Payroll Overhead Factor: This variable includes payroll withholding taxes (employer), and workman's compensation. An industry standard of 30% is used.

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4. Administrative and General Cost Factor: This factor accounts for ancillary payroll costs (i.e., medical, pension, profit sharing, etc.). A 30% factor is used based upon industry factors.
5. Grid Management Cost per Mile: This amount considers outsourcing operation of the NOC and is based on a quote received by the Task Force. The model only inputs this per mile number when FTTH/B is deployed; otherwise, the number in the following variable is used.
6. Grid Management Cost per Mile: Partial Deployment (MAN only): This variable accounts for activities necessary to administrate the network prior to the need for full NOC services. The need for system management and tracking will be largely dependant upon the specific applications used by different governmental agencies connected to the network.
7. Maintenance Material Cost per Mile: There is no industry standard established for on-going maintenance of a system and the amount can differ from location to location due to weather patterns, community activity as well as a host of other external factors. We estimated at \$50.00 per mile/per year to provide minor supplies for routine maintenance.
8. Cost per Mbps: The cost per megabit for the Internet Portal is the cost to connect FTTH/B network applications to an Internet service provider via the MAN. The estimated cost varies depending upon usage quantity. The price need varies from \$109/Mbps to \$87/Mbps.

In the interest of clarification, it is important to differentiate between Internet Access Service and a Point-to-Point Circuit in a retail service environment.

The Internet Access Service includes access to the World Wide Web and requires that the network be managed and designed to allow for defined data throughput speeds. Customers utilizing an Internet Access Service are sharing bandwidth on the MAN to reach the Internet or World Wide Web. The residential service would be an Internet Access Service.

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In a Point-to-Point circuit, only the end-user is accessing a designated quantity of bandwidth. There is no external management of data across this bandwidth and its purpose is to deliver the customer data to a designated point. In most circumstances, the business is responsible for managing their own data across this circuit. This circuit does not give the customer access to the Internet or World Wide Web. However, a point-to-point circuit can be used by a private business in Jacksonville to deliver their data to their own private Internet portal. This arrangement would commonly used by large companies requiring a great deal of bandwidth to the WEB. This variable only establishes cost for Internet access on the system.

9. Mbps per Customer: The FTTH/B network will provide 10 Mbps of sustained IP to customers with the capacity to burst to 100 Mbps. The variable shown incorporates the industry standard diversity factor.

Data traffic quantities, number of customers, network usage patterns and applications are the variables used to determines the size of the Internet Portal necessary. The model has been designed to automatically formulate the size of the Internet portal and the associated costs. The ratio of number of customers to Internet Portal size is the same as reflected in the original models.

10. Annual Software License: The requirements for software licenses as indicated in the models provided vary from \$50,000 per year for the MAN only to \$100,000 per year for the FTTH alternative. This cost will remain relatively small until FTTH/B is implemented.

The software costs will vary depending upon the type of services provided. The model allows for an estimate in escalation in software license cost and increases in these costs of software over time, should be expected.

11. Annual Legal Cost: Legal costs are considered for the initial setup and as an ongoing expense. Legal fees increase at the time of FTTH/B deployment. There are several risk factors prevalent during a major construction build throughout the city as well as potential legal resistance from the area incumbents. This cost may be mitigated by cooperation with and by the incumbent. However, the financial implications of a problematic deployment need to be included.

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12. Annual Insurance Cost: The Task Force was able to provide this number and may not be representative of insurance rates for communications facilities. Obtaining quotes from several insurance carriers who deal with telecommunications companies is advised to determine a closer estimate and establishing the baseline budget. The MAN scenario considers this cost incidental to incidental to the system operators overall costs.
13. Monthly Facility Lease Cost – Data Center – Cost per Sq/ft: This variable provides facility lease cost for the Data Center.
14. Annual Facility Cost – Data Center – Misc. Operating Cost: These costs reflect maintenance, power, air conditioning, etc. for the Data Center space and vary by scenario.

It is recommended that prior to establishing a baseline budget that a detailed description of all required equipment housed with-in the data center be established to project building operating costs.

15. Annual Cost per Vehicle: This cost includes lease and/or monthly payments fuel, maintenance, and insurance. The estimated amount is \$670 per month/per vehicle. The number of vehicles needed is calculated in the model automatically and based on number and type of employees requiring a vehicle.

The model assumes the following personnel would require vehicles: Operations Manager and half of the Technicians, and the Brand/Office Manager. If more vehicles are required, a change to the formula on the O&M worksheet, Line 35, would be necessary. The formula references to the employees listed above.

16. Annual Materials and Supply Cost per Operations Personnel: This variable is for misc. materials and supplies for all staff positions except engineering positions. This variable amount would cover all materials necessary for administration tasks.

Sales

1. Plant Footage per Mile: This figure is the same as Capital Expenditures variable 1a. and is the total plant miles.

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2. Total Homes/Units Passed: The total homes passed number is taken from the 2000 Census data. The beginning homes passed total may be an acceptable number. However over the life of the model, no consideration for population growth and associated living unit growth is represented.
3. Total Commercial Units Passed: For the purposes of this model, we make the assumption that this variable includes only private commercial entities. All governmental and public agency passing are accounted for in a following variable input.

This input reflects the total number of businesses passed at total construction completion. It is further assumed that commercial account numbers will only begin at FTTH/B deployment.

4. Customer Take Rates: These variable inputs allow insertion of differing take rates to determine the affect on financial performance of the system.

Residential Take Rate-Video

We would suggest that the video subscription percentages be ramped up over the first four years after the initial launch of video services. The Task Force used a 30% penetration figure as a maximum market share and the model reflects that number. In other competitive situations, the new entrants to the market can and usually reach the 30% to 40% of homes passed mark, but normally it takes more than a year and considerable direct marketing.

This percentage number is heavily influenced by the strength of the incumbent cable television operator, in this case AT&T Broadband/Comcast. The market research conducted most recently, indicates that there are approximately 31% of the customers who are “Very likely” to switch Cable TV Providers. While this response would support the numbers in the model, time to market and actual installation of customers may create a lag in the percentage figures.

Another factor to consider in the penetration rate is the competitive response of the incumbent. When a new wire-line video provider enters the market, AT&T/Comcast will respond with both investment dollars and with heavy marketing and promotional offers. Since your project is a progressive build, it allows the competition the time to create campaigns and incentives designed to prevent or dissuade residents from switching service.

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When your system is completed and you are facing competition directly, then over a period of time the penetration numbers will increase.

Once the system is built out in the later years, an increase in the percentage penetration rates is likely. So in years nine and ten, penetration could rise to a realistic 40%.

Residential Take Rate, 10-40 Mbps

According to research, AT&T/Comcast has a very poor market reach with their high-speed data service. When visiting the AT&T Web site, the company doesn't indicate that high-speed data service is even available in Jacksonville. This level of service provides shared access speeds between 10 to 40Mbps. This could factor into a greater percentage of residential data service than is listed. Again, the variable that presents the greatest obstacle to achieving high penetration rates is the progressive build. The incumbent can stay one step ahead of the build, repairing their facilities and offering a deeply discounted residential data service in advance of your launch. This factor should be taken into account when planning your construction activities to make it more difficult for the incumbent to respond.

The Task Force used a 10% penetration in the original models. It is likely that the percentage would increase over a ten-year period.

Consistent marketing efforts will continue to add customers. Over a ten-year period, a younger more computer reliant populace will grow leading to more users of high-speed connections and advanced network services. Estimates of 30% penetration of homes passed, if not greater is reasonable. The more unique and innovative services provided, the more likely the number of high-speed customers will grow.

Commercial Take Rate—Video

This percentage will be dependant upon how you define your commercial units. Commercial covers such a wide variety of differing types of businesses. The margin a retail service provider makes on commercial accounts is relatively small. There are many competitive choices for video in commercial establishments from satellite dish to wireless to private networks. Using a single rate for all these types of business is acceptable and allows the service provider the flexibility to pursue accounts in a more competitive way.

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However, from the carrier's perspective, the carrier should closely monitor the sale of services of video to commercial establishments to ensure that a proper and fair percentage of this revenue is being returned to the system.

This model provides for a single rate, as suggested by the Task Force, regardless of business type.

Government Agency Connections - 100-1,000 Mbps

Including schools, fire stations, police stations and other government agency facilities, 300 government agency or public connections are incorporated into the initial MAN deployment. We have represented in the model that 150 of the accounts will be on line by year 2, with the balance up to 150 to be completed early in year two. This level of service provides dedicated access speeds between 100 and 1,000 Mbps.

SOHO Take Rate—10-40 Mbps

For all the Commercial Categories listed under sales, it is again important to note the difference between Internet Access Service and Point-to-Point circuits. This level of service provides the ability to reach the widest possible market segment with a business level Internet Access Service offering shared access speeds between 10 to 40 Mbps.

The service would be targeted to small to mid-size businesses. There are few services designed to provide high-speed data service to small business. The cable market continues to neglect this market segment and DSL is offered only on a very limited basis. This results in high demand from this market segment. To obtain anything other than dial-up Internet service or DSL (if available), a T-1 connection is necessary. This proves cost prohibitive for many small businesses.

Given the rates sighted and the comments and responses of the participants in the recent survey of commercial entities in Jacksonville, it would be safe to assume that gaining very positive market share is likely. The prices being charged for T-1 services ranged from \$800 to well over \$1500 per month. The ability to offer data services between 10-40 Mbps that increases bandwidth availability of a T-1 by 25 times, at significantly lower rates, would attract business customers.

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Given this market segment and this product offering, we conservatively used 5% of the initial market.

The percentages in the model indicate that this service level is launched at the time of FTTH/B deployment.

Commercial Take Rate—50, 100, 1,000 Mbps

These take-rate categories are specifically for point-to-point dedicated circuit accounts. Accurate forecasting in these line items is essential. They provide a very large revenue contribution to the forecasts. An error in percentage in any of these take rates could result in very large shortfalls in cash flow performance.

The telephony classifications of DC-3, OC-3, and OC-48 are used to segment service levels. They do provide an establish comparison for present market price, however, the system to be built is an Ethernet system normally defined in multiples of 100 Mbps or 1 Gbps terms. An option is to provide these service level segmentations in Ethernet terms. This differentiation in bandwidth capacity will provide value added selling points to the commercial market segment.

The ability to provide these types of circuits at costs to end-users far below current BellSouth rates should provide a significant advantage to attracting new business. The governmental sector alone could be expected to increase the lower levels of these circuits.

The model provides for commercial take rates from the beginning of the project. The percentages inserted in the years of MAN only operate are minimal due to the restrictions in providing service to commercials off the MAN. The percentages increase when the FTTH/B deployment begins.

Monthly Service Provider Fees Per Customer: The rates inserted in these variables inputs are those used by the Task Force in the original models. The rates are multiplied by subscribers generated by other variable inputs previous inputted. Following are comments specific to each customer segment

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Residential Service Provider Fee—Video

The model represents the Task Forces original pricing of \$20.00 per video customer. Expecting that video will be introduced later in the timeline of the project, a service provider will need the proper financial incentive to be attracted to providing residential service via Jacksonville's network. Several factors pose significant obstacles to a service provider offering a new service to a progressively building market. There are also several approaches to mitigate those difficulties.

It is also difficult to project year to year pricing due to the current business market and fluctuations in wholesale service fees. Cable operators pay monthly prescribes fees for the permission to broadcast TV networks over their system. According to industry surveys, these fees have been increasing by 10-15% each year for the past five years and leaving the cable operator little choice but to increase its fees. This has created a problem for cable operators to control monthly pricing and have a standard rate structure. It appears that we are in an inflation period in how content services are provided¹.

The present provider in the market is averaging \$46.60 in per subscriber revenue (based on Task Force estimates). The cable television industry average cash flow is in the 40-45% range, which means that of the \$46.60, only \$20.97 is available for anything other than direct operating expenses. Therefore, the conclusion can be made that such rate structure, when taking video only into consideration, would not support a service provider. All but approximately \$1.00 of the revenue generated by the video offering would be required to pay the service provider fee leaving little financial incentive for any company to become a service provider.

As the market grows with the build, more customers would spell higher returns for the service provider. However, at the outset of the launch, revenues would not sustain a video service provider until well into the build schedule, perhaps year five or six. This method allows the video service provider to build market share and better accommodate the initial start-up cost associated with building a customer base and serving a limited (but growing) customer base.

¹ Michael Pandzik, (President and chief executive of the Lenexa, KS based National Cable Television Cooperative) thinks what's needed is a fundamental change in the way cable operators charge their subscribers. He believes the industry will move to a model that gives subscribers more choice to pick what networks they want. "I think we'll get a new model where subscribers say "I'll buy CNN but not ESPN", kind of like an a-la Carte model."

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Another approach is to set customer level benchmarks, wherein, the service providers rates increase as soon as they achieve a predetermined subscriber count. This too would allow the service provider to build sufficient market share to gain an acceptable return on investment.

Residential Service Provider Fee—10-40 Mbps

The fee of \$15.00/month, suggested by the Task Force, is reasonable if an ISP is providing service on a stand-alone basis. Considering an industry wide average retail rate of \$45.00 for high-speed residential data service, an ISP would still need to generate significant market share to provide financial incentive to provide service.

Another option might allow a video provider to offer both services under one provider fee of \$20.00. This would accommodate existing cable TV business models and allows the residential data service revenue to aid in the operational costs associated with video delivery.

Combined with a sliding scale approach, a service provider allowed to offer both the residential video and residential data services under one fee, could provide acceptable ROI numbers.

Yet another option to the residential market is to simply take a percentage of gross revenue generated by the service provider. Under this approach, Jacksonville would be accepting a large part of the risk; however, you could be retaining a higher percentage of the revenue than you otherwise would receive. Jacksonville would also be able to influence end-customer pricing to help in ensuring value to the community and revenue requirements of the system.

Commercial Service Provider Fee —Video

The model uses the Task Force suggested fee of \$30 per commercial video customer. By charging at the per unit rate in this case, Jacksonville leaves room for competitive offers by the service provider. A percentage of the retail rate structure in this case might be more equitable and would share revenue gains as well as risks.

Government Fee-100-1,000 Mbps

Connecting the 300 government sites results in a revenue benefit of \$4.6 million per year. The variable listed here of \$1,278 per month per site, provides the cash benefit seen by the connecting government sites, thereby, positively impacting the financial performance of the broadband system.

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SOHO Service Provider Fee —10-40 Mbps

A \$20.00 per unit fee is used in the model for each 10- to 40 Mbps Commercial Internet Access Customer. In any Internet Access service, it is important to note how the service is offered. If you are guaranteeing the respective Mbps, then your cost for the Internet Portal will be higher. A 10-40Mbps guaranteed bandwidth rate would result in Internet Portal charges in the range of \$1,900 to \$6,700 per month.

Normally, Internet Access service offered via cable modems or dial-up ISP's are offered with the stipulation that you will have speeds up to a defined limit. The service is presented to the commercial accounts with the "Up to" qualification. The new model assumes that this will be the approach.

Commercial Service Provider Fee—50, 100, 1,000 Mbps

The Task Force has used telephony designations of DS-3, OC-3, and OC-48 and in other instances, the Task Force has used Ethernet Standards of 10Mbps, 100Mbps and 1Gbps. The model reflects Ethernet Standards.

The rates used are wholesale rates from UTC Fiber Research Study, 2002.

Wireless Sales

This variable is an un-linked input from a separate model detailing the launch of the wireless applications by Jacksonville. This alternative was not used as discussed in Volume II, Section 13.0

Co-Location Rental: Variable 7a refers to the percentage of rental space in the data center. This percentage establishes how much of the total square footage is available for service provider lease and provides built-in discounts for generic space such as bathrooms, entryways, etc.

Variable 7b references the width of a rack for equipment. Lease fees are determined by rack and actual equipment being leased by service providers. Formulas in the model compute the revenues generated from the customer space used

Variable 7c sets the number of pieces of equipment that can be placed in a single rack and also factors into formulas for used space and associated revenues.

City of Jacksonville, Florida

Future differences in rack size and equipment types might necessitate changing these figures.

Variable 7d, the retail rate per square foot, allows the ability to set the fee assessed service providers for space and any associated equipment lease as well. The rate is constant over the life of the model at present, however, providing a moderate increase in these lease rates over the life of the model might be considered. The increase per year might approximate the CPI or other economic factors used to measure inflation in market prices over a period of time.

Variable 7e, the co-location occupancy factor, allows a percentage of actual used space by year. This provides accounting for vacancy and escalating use.

Marketing

A sound marketing plan, that takes into consideration the efforts of service providers and the expected competitive responses, is needed to enable accurate forecasting.

Such a marketing plan would detail what responsibilities, strategies, and goals the marketing efforts need to achieve. The marketing costs vary from \$0 for the MAN to \$300/year for the FTTH scenario.

Wireless Marketing

This variable or line item is an un-linked input from a separate model detailing the launch of the wireless applications by Jacksonville.

**Appendix C
Draft Ordinance**

City of Jacksonville, Florida

Introduced by _____:

ORDINANCE 2003-

AN ORDINANCE AMENDING SECTION 654.134, ORDINANCE CODE TO REQUIRE INSTALLATION OF UNDERGROUND DRY CONDUIT for TECHNOLOGY AND TELECOMMUNICATIONS INFRASTRUCTURE IN ALL NEW SUBDIVISION DEVELOPMENTS; PROVIDING AN EFFECTIVE DATE.

WHEREAS, the nation and the City of Jacksonville ("City") are undergoing a transition from an industrial age to the information age and knowledge-based economy; and

WHEREAS, the infrastructure needed to properly serve Jacksonville and assist in the transition to the information age and knowledge-based economy includes more than traditional utilities such as water, electric, and sewer; and

WHEREAS, this new infrastructure, which includes fiber optics, cable, hybrid fiber/coaxial cable, wireless, and other technologies, is sometimes referred to as the “communications infrastructure”, “telecommunications infrastructure” or “high-tech infrastructure;” and

WHEREAS, this new, high-tech infrastructure is fundamental to economic development, addressing the digital divide, efficiency and productivity, cost-effectiveness and delivering wide-ranging telecommunication services, including cable TV, high-speed internet, and broadband services, to the City’s neighborhoods; and

WHEREAS, the City believes that this high tech infrastructure is fundamental to Jacksonville’s future and must be provided to all citizens and businesses county-wide and;

City of Jacksonville, Florida

WHEREAS, telecommunications infrastructure makes extensive use of public right-of-ways, with construction often resulting in considerable public cost and inconvenience; and

WHEREAS, developers are currently required to install infrastructure associated with utility services along the rights-of-way and in easements in all new residential and commercial subdivision developments and deed title to that infrastructure to the City; and

WHEREAS, the City believes telecommunication infrastructure is as fundamental to the 21st Century as roads and electric, water sewer and telephone lines were to the 20th Century; and

WHEREAS, the City believes that by requiring developers to install dry conduit infrastructure in all new commercial and residential subdivisions alongside the installation of the other required infrastructure, it will eliminate the costs associated with having to retrofit the development to accommodate high-speed fiber optic transmission lines; and

WHEREAS, the City believes that universal access of all citizens, businesses, government, and schools to this new infrastructure is vital to economic development, cost savings, quality service, and making Jacksonville competitive in the information age and knowledge-based economy; now therefore

BE IT ORDAINED by the Council of the City of Jacksonville:

Section 1. Chapter 654.134, Ordinance Code is amended to read as follows:

Section 654.134. Utility lines.

Utility lines of all kinds, including those of franchised utilities, electric power and light, dry conduit for fiber optic telecommunications, telephone ~~telegraph~~, cable television, water, sewer and gas shall be constructed and installed beneath the surface of the ground unless it is determined by the JEA or Public Works Department and recommended by the Planning Department that soil, topographical or another compelling condition makes the underground installation of the utility lines or dry conduit as prescribed herein unreasonable or impracticable. The underground installation of incidental appurtenances such as transformer boxes for electricity or similar service hardware necessary for the provision of electric and communication utilities shall not be required. Below-ground-level installation shall not be required of the

City of Jacksonville, Florida

electric and communication major feeder or transmission lines which serve more than one residential subdivision. The placement, installation and maintenance of utility lines shall be in conformance with the respective utility company's construction procedures, or as otherwise approved by the Department. The developer shall make the necessary cost and other arrangements, including easements, for the underground installation with each of the persons furnishing the utility services and dry conduit involved. With the exception of the requirement for dry conduit for telecommunications services, in subdivisions of less than twelve lots or where the density of the development is less than one dwelling an acre, the Planning Department may waive the requirement for underground installation if the service to an adjacent area is overhead and no further development of the proposed subdivision is contemplated. This section shall not apply to resubdivisions of areas already developed, if the resubdivision will not require material and substantial changes in utility lines or accessory installation.

Section 2. Effective Date. This ordinance shall become effective upon signature by the Mayor or upon becoming effective without the Mayor's signature.

Form Approved:

Office of General Counsel

Legislation Prepared by: Jason R. Teal

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**Appendix D
Grant Programs**

City of Jacksonville, Florida

Technology Opportunities Grants²

FEDERAL AGENCY:

NATIONAL TELECOMMUNICATIONS AND INFORMATION ADMINISTRATION,
DEPARTMENT OF COMMERCE

OBJECTIVES:

To promote the widespread use and availability of advanced telecommunications and information technologies in the public and nonprofit sectors. The program provides matching grants for model projects that demonstrate innovative uses of network technologies.

TYPE OF ASSISTANCE:

Project Grants.

USES AND USE RESTRICTIONS:

Through TOP, NTIA provides underserved communities with opportunities to explore the possibilities that emerging digital network technologies offer to solve critical challenges in such areas as lifelong learning, community and economic development, government and public services, safety, health, culture, and the arts. TOP projects demonstrate creative uses of digital network technologies to address pressing needs in the public and non-profit sectors. Therefore, TOP expects each applicant to present a clear vision and a workable plan to apply digital network technologies to address specific challenges in their communities. Rather than simply requesting funds to build capacity or upgrade existing equipment, each application should describe a project that pinpoints specific problems, proposes creative solutions, and postulates measurable outcomes.

ELIGIBILITY REQUIREMENTS:

Applicant Eligibility: All non-profit entities (including, but not limited to, faith-based organizations, national organizations and associations, non-profit community-based organizations, non-profit health care providers, schools, libraries, museums, colleges, universities, public safety providers) and state, local, and tribal governments are eligible to

²Source: Catalog of Federal Domestic Assistance, [Available Online: <http://www.cfda.gov>].

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apply. Although individuals and for-profit organizations are not eligible to apply, they are encouraged to participate as project partners.

Beneficiary Eligibility: General Public.

APPLICATION AND AWARD PROCESS:

Pre-application Coordination: Program staff members are available to provide technical and other assistance in preparing application forms. This program is eligible for coverage under E.O. 12372, "Intergovernmental Review of Federal Programs." An applicant should consult the office or official designated as the single point of contact in his or her State for more information on the process the State requires to be followed in applying for assistance, if the State has selected the program for review.

Application Procedure: The standard application forms as approved by OMB and provided by NTIA must be used for this program, including the Standard Form 424 (Rev 4-92) and the required certifications.

Award Procedure: Applications are reviewed on the basis of funding criteria as established in the Notice of Availability of Funds. The Administrator of NTIA may select an application for funding, in whole or in part, and will notify the applicant of final decisions.

Deadlines: The NTIA Administrator shall select and publish in the Federal Register the date by which new applications must be filed in order to be considered for funding in the referenced fiscal year. For fiscal year 2002, the deadline for filing applications was March 21, 2002.

Range of Approval/Disapproval Time: Awards for the fiscal year will generally be announced within 180 days from the filing of an application.

Appeals: All awards decisions are final. There is no administrative appeal process.

Renewals: Not applicable.

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ASSISTANCE CONSIDERATIONS:

Formula and Matching Requirements: 47 U.S.C. 392 (b) and (c). The Administrator will provide up to 50 percent of the total project costs, unless extraordinary circumstances warrant a grant of up to 75 percent. A project will not be considered grantable unless the applicant can document a capacity both to supply matching funds, and to sustain the project beyond the period of the award.

Length and Time Phasing of Assistance: Successful applicants will have between one and three years to complete the project as specified in the award document. The actual time will vary depending on the complexity of any particular project. Extensions may be requested in writing if circumstances require additional time, and extensions must be approved by the Grants Officer. Financial assistance is generally released as required during the award period.

POST ASSISTANCE REQUIREMENTS:

Reports: Financial and progress reports are to be submitted in accordance with the terms and conditions of the award, and are due on quarterly basis.

Audits: Audits will be conducted in accordance with the terms and conditions of the award and OMB Circular No. A-133, Audits of States, Local Governments, and Nonprofit Organizations. In accordance with the provisions of OMB Circular No. A-133, (Revised, June 24, 1997), "Audits of States, Local Governments, and Nonprofit Organizations," nonfederal entities that expend financial assistance of \$300,000 or more in Federal Awards will have a single or a program-specific audit conducted for that year. Nonfederal entities that expend less than \$300,000 a year in Federal awards are exempt from Federal audit requirements for the year, except as noted in Circular No. A-133.

Records: All financial and programmatic records, supporting documents, statistical reports, and other records of recipients or sub-recipients must be maintained in accordance with the terms of the award. Generally, the recipient must retain records for three years from the date on which the final expenditure report is submitted.

FINANCIAL INFORMATION:

Range and Average of Financial Assistance: \$241,185 to \$705,000. Average: \$496,562.

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REGULATIONS, GUIDELINES, AND LITERATURE:

Written requests to the Director, Technology Opportunities Program, will obtain application package containing the Notice of Availability of Funds, application forms and guidelines. Cost will be determined in accordance with OMB Circular Nos. A-21 for institutions of higher education, A-87 for State, Local, and Indian Tribal Governments, and with A-122 for nonprofit organizations. Grants management will be in accordance with the provisions of OMB Circular No. A-110 for institutions of higher educations, other nonprofit organizations, and for-profit organizations; and 15 CFR Part 24 for State and local governments.

INFORMATION CONTACTS:

Headquarters Office: Mr. Stephen Downs, Director, Technology Opportunities Program, Office of Telecommunications and Information Applications/NTIA, Room 4092, Department of Commerce, 1401 Constitution Avenue, NW., Washington, DC 20230. Telephone: (202) 482-2048.

Web Site Address: <http://www.ntia.doc.gov/top/>.

Public Telecommunications Facilities Planning and Construction Grant³

FEDERAL AGENCY:

NATIONAL TELECOMMUNICATIONS AND INFORMATION ADMINISTRATION,
DEPARTMENT OF COMMERCE

OBJECTIVES:

To assist in the planning, acquisition, installation and modernization of public telecommunications facilities, through planning grants and matching construction grants, in order to: a) extend delivery of public telecommunications services to as many citizens of the United States and territories as possible by the most efficient and economical means, including the use of broadcast and nonbroadcast technologies; b) increase public telecommunications services and facilities available to, operated by and owned by minorities and women; and c) strengthen the capability of existing public television and radio stations to provide public telecommunications service to the public.

TYPES OF ASSISTANCE:

Project Grants.

USES AND USE RESTRICTIONS:

Provides grants for the planning and construction of public telecommunications facilities. Matching grants are given for apparatus necessary for production, dissemination, interconnection, captioning, broadcast, or other distribution of programming and reception of noncommercial educational, cultural radio and television programs, and related noncommercial instructional or informational material. Costs associated with filing for Federal assistance, installation costs, and other pre-operational costs are eligible to be included in requests for matching funds. Buildings and renovations of buildings, land, operational expenses, and indirect costs are ineligible.

ELIGIBILITY REQUIREMENTS:

Applicant Eligibility: A public or noncommercial educational broadcast station; a noncommercial telecommunications entity; a system of public telecommunications entities; a nonprofit foundation, corporation, institution or association organized primarily for educational

³ Source: Catalog of Federal Domestic Assistance, [Available Online: <http://www.cfda.gov>].

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or cultural purposes; State, local, and Indian Tribal governments (or an agency thereof); or a political or special purpose subdivision of a State. Special consideration is given to applications which would increase minority and women's ownership of, operation of, and participation in public telecommunications entities.

Beneficiary Eligibility: General public and students.

APPLICATION AND AWARD PROCESS:

Pre-application Coordination: Program staff members are available to provide technical and other assistance in preparing application forms. This program is eligible for coverage under E.O.12372, "Intergovernmental Review of Federal Programs." An applicant should consult the office or official designated as the single point of contact in his or her State for more information on the process the State requires to be followed in applying for assistance, if the State has selected the program for review. Applicants must coordinate their project plans with the State educational television, radio, or telecommunications agency and must file an application with the FCC if an FCC authorization is required for the proposed project. Applicants must show evidence of participation in comprehensive planning in the area to be served including an evaluation of alternate technologies. If an environmental impact statement or assessment is required by any Federal, State, or local agency, a copy must be submitted by the applicants.

Application Procedure: The application forms as furnished by the Federal Agency and approved by OMB must be used for this program. The Application Kit can be requested from the Agency or retrieved from the web-site at www.ntia.doc.gov. Applicants must file by the deadline, a completed PTFP Application Form, Project Narrative, Project Budget forms, relevant exhibits, CD-511, CD 346, SF 424B, SF LLL. Applicants must notify where applicable the State Telecommunications Agency, State Single Point of Contact, and the Federal Communications Commission. Applications postmarked or received after the deadline are returned to applicants.

Award Procedure: Applications are reviewed on the basis of funding criteria for construction and planning applications as set forth in the regulations. The Administrator of NTIA may select an application for funding, in whole or in part, and will notify the applicant, the relevant State agency, the FCC, and the Corporation for Public Broadcasting.

Deadlines: The Administrator of NTIA shall select and publish in the Federal Register the date by which new applications and reactivation requests for deferred applications must be filed in order to be considered for funding in the current fiscal year. For fiscal year 2003 consideration,

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the deadline for filing television applications was November 19, 2002. The deadline for radio and distance learning applications is planned for March 2003.

Range of Approval/Disapproval Time: Awards for the current fiscal year are generally announced in 180 days. Applications received by NTIA remain eligible for funding consideration until withdrawn or returned.

Appeals: Applicants may appeal determinations of ineligibility for funding to the Administrator of NTIA, as set forth in the regulations.

Renewals: Applications that are not funded may be reactivated upon request of the applicant during the 2 consecutive years following the applicant's initial receipt by the agency, as provided by program regulations.

ASSISTANCE CONSIDERATIONS:

Formula and Matching Requirements: 47 U.S.C 392 (b) and (c); 15 CFR 2301.6. The Administrator may provide up to 100 percent of the funds necessary for the planning of a public telecommunications facility. The maximum amount of Federal grant for the construction of a public telecommunication facility is 75 percent of the eligible project costs.

Length and Time Phasing of Assistance: Projects must be completed within a reasonable period of time, generally 1 to 2 years as specified in the award document. Prompt completion is expected. Extensions, however, may be requested in writing if circumstances require additional time. Extensions must be approved by the Grants Officer. Financial assistance is generally released as required during the award period. Since fiscal year 2000, NTIA has considered applications that request multi-year funding to convert their facilities to digital broadcasting. The period of performance for these projects may extend up to three years. Funding for each subsequent year of a multi-year award will be at the sole discretion of the Department of Commerce and will depend on satisfactory performance by the recipient and the availability of funds to support the continuation of the project.

POST ASSISTANCE REQUIREMENTS:

Reports: During construction, quarterly progress reports must be submitted. The Federal Government maintains a 10-year reversionary interest in the use of the facilities from the date of completion. Annual reports must be submitted before April 1st of each year during such period.

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Audits: Audits will be conducted in accordance with the terms and conditions of the award and OMB Circular No. A-133, Audits of States, Local Governments, and Nonprofit Organizations. In accordance with the provisions of OMB Circular No. A-133, (Revised, June 24, 1997), "Audits of States, Local Governments, and Nonprofit Organizations," nonfederal entities that expend financial assistance of \$300,000 or more in Federal Awards will have a single or a program-specific audit conducted for that year. Nonfederal entities that expend less than \$300,000 a year in Federal awards are exempt from Federal audit requirements for the year, except as noted in Circular No. A-133.

Records: Recipients of construction grants shall keep a complete and itemized inventory of equipment for all public telecommunications facilities under their control. All grantees shall keep complete, current and accessible financial records on all funds associated with the total project. All records of accounts, supporting documents and project records must be retained by the recipient and sub-recipient for a period of 3 years from the date of submission of the final Financial Status Report.

FINANCIAL INFORMATION:

Obligations: (Grants) FY 02 \$45,399,332; FY 03 est \$41,108,000; and FY 04 est \$61,108,000.

Range and Average of Financial Assistance: \$15,073 to \$1,800,000. Average: \$362,575.

PROGAM ACCOMPLISHMENTS:

In fiscal year 2002, NTIA received 237 applications requesting \$105 million. During 2002, the program awarded 116 grants for \$42 million. In addition to these projects, NTIA awarded three grants from a special supplemental appropriation to stations in New York City. The grants are helping to re-establish the stations' transmission facilities that were destroyed by the September 11, 2001 terrorist attack on the World Trade Center.

INFORMATION CONTACTS:

Headquarters Office: Mr. William Cooperman, Director, Public Telecommunications Facilities Program, Office of Telecommunications and Information Applications/NTIA, Room 4625, Department of Commerce, 1401 Constitution Avenue, NW, Washington, DC 20230. Telephone: (202) 482- 5802.

Web Site Address: <http://www.ntia.doc.gov/ptfp>.

City of Jacksonville, Florida

Star Schools Grant⁴

FEDERAL AGENCY:

OFFICE OF ASSISTANT SECRETARY FOR EDUCATIONAL RESEARCH AND IMPROVEMENT, DEPARTMENT OF EDUCATION

OBJECTIVES:

To encourage improved instruction in mathematics, science, and foreign languages as well as other subjects, such as literacy skills and vocational education. To serve underserved populations, including the disadvantaged, illiterate, limited-English proficient, and individuals with disabilities. Grants are made to telecommunication partnerships for telecommunications facilities and equipment, educational and instructional programming, and technical assistance in the use of such facilities and instructional programming.

TYPES OF ASSISTANCE:

Project Grants.

USES AND USE RESTRICTIONS:

Restrictions and priorities include: Eligible telecommunications partnerships must be organized on a statewide or multi-state basis. Partnerships must assure that a significant portion of the facilities and equipment, technical assistance and programming for which assistance is sought will be made available to elementary and secondary schools of local education agencies that have a high percentage of children counted for purposes of Part A of Title I of the Elementary Secondary Education Act. Priority is given to those partnerships that provide services to meet the needs of traditionally underserved populations, individuals traditionally excluded from careers in mathematics and science because of discrimination or economically disadvantaged backgrounds, areas with scarce resources, and areas with limited access to courses in mathematics, science and foreign languages. Funds through this grant may not supplant funds otherwise available for these purposes. Not less than 25 percent of the funds appropriated during any fiscal year shall be used for the cost of instructional programming. Not less than 50 percent of the funds appropriated during any fiscal year shall be used for the cost of facilities, equipment, teacher training or retraining, technical assistance or programming for school districts which are eligible to receive assistance under Part A of Title I. No grant may exceed \$10,000,000 in any single fiscal year. This program is subject to non-supplanting requirements and must use a restricted indirect cost

⁴ Source: Catalog of Federal Domestic Assistance, [Available Online: <http://www.cfda.gov>].

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rate which is referenced under 34 CFR 76.564-76.569. For assistance call the Office of Chief Financial Officer/Indirect Cost Group on 202-708-7770.

ELIGIBILITY REQUIREMENTS:

Applicant Eligibility: Eligible telecommunications partnerships must be organized on a statewide or multistate basis. Two types of partnerships are eligible: (1) A public agency or corporation established for the purpose of developing and operating telecommunications networks to enhance educational opportunities provided by educational institutions, teacher training centers, and other entities, provided that the agency or corporation represents the interests of elementary and secondary schools eligible to participate under Title 1 of the Elementary and Secondary Education Act of 1965; or (2) a partnership that will provide telecommunications services and includes three or more of the following entities, at least one of which shall be State or local educational agency: (a) A local educational agency, that serves a significant number of elementary and secondary schools that are eligible for assistance under Part A, of Title 1 or elementary and secondary schools operated or funded for Indian children by the Department of the Interior; (b) A State educational agency; (c) adult and family education programs; (d) an institution of higher education or a State higher education agency; (e) a teacher training center or academy; (f) a public or private entity with experience and expertise in the planning and operation of a telecommunications network, including entities involved in telecommunications through satellite, cable, telephone, or computer; or a public broadcasting entity with such experience; or (g) a public or private elementary or secondary school.

Beneficiary Eligibility: Elementary and secondary school students and teacher benefits.

APPLICATION AND AWARD PROCESS:

Pre-application Coordination: This program is eligible for coverage under E.O. 12372, "Intergovernmental Review of Federal Programs." An applicant should consult the office or official designated as the single point of contact in his or her State for more information on the process the State requires to be followed in applying for assistance, if the State has selected the program for review. The standard application forms as furnished by the Federal agency and required by OMB Circular No. A-102 must be used for this program.

Application Procedure: Described in the application notice published in the Federal Register. Contact the headquarters office listed below for application packages containing the application notice and application assurance forms.

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Award Procedure: The Assistant Secretary for Educational Research and Improvement approves the selection of applications for negotiation. The selection of applications is competitive, based on staff and nonfederal review according to the selection criteria contained in the Education Department General Administrative Regulations (EDGAR) at 34 CFR 74.210 and the application notice published in the Federal Register.

Deadlines: Announced in the application notice published in the Federal Register. Contact the headquarters office listed below for further information.

Range of Approval/Disapproval Time: Approximately 120 days following the application deadline.

Appeals: Not applicable.

Renewals: As required by the Education Department General Administrative Regulations (EDGAR) for direct grant programs (see 34 CFR 75.253). Generally, for multiple-year awards, continuation awards after the first budget period are made if sufficient funds have been appropriated; the recipient has either made substantial progress in meeting the goals of the project or obtained approval for changes in the project; the recipient has submitted all required reports; and continuation is in the best interest of the government.

ASSISTANCE CONSIDERATIONS:

Formula and Matching Requirements: The Federal share for the first and second fiscal years shall be 75 percent; for the third and fourth years 60 percent; and for the fifth year 50 percent. All resources must be used to supplement and not supplant resources otherwise available for the purposes of the grant. Other regulations in 34 CFR 74, Subpart G (cost-sharing or matching), apply. The Secretary of Education will consider requests to reduce or waive matching requirements if financial hardship is demonstrated.

Length and Time Phasing of Assistance: Following a competitively selected award of up to twelve months, awards may be made for up to 4 subsequent years; subject to the availability of funds.

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POST ASSISTANCE REQUIREMENTS:

Reports: As required by the Education Department General Administrative Relations (EDGAR) for direct grant programs (see 34 CFR 75). Generally, annual performance and financial reports are required.

Audits: See 34 CFR 74.26. Institutions of higher education and nonprofit organizations are subject to the audit requirement of OMB Circular No. A-133. In accordance with the provisions of OMB Circular No. A-133 (Revised, June 24, 1997), "Audits of States, Local Governments, and Nonprofit Organizations," nonfederal entities that expend financial assistance of \$300,000 or more in Federal awards will have a single or a program-specific audit conducted for that year. Nonfederal entities that expend less than \$300,000 a year in Federal awards are exempt from Federal audit requirements for that year, except as noted in Circular No. A-133.

Records: As required by EDGAR for direct grant programs (34 CFR 75). Generally, records related to grant funds, compliance and performance must be maintained for a period of 5 years after completion.

FINANCIAL INFORMATION:

Obligations: (Grants) FY 01 \$59,318,000; FY 02 est \$27,520,000; and FY 03 est \$0.

Range and Average of Financial Assistance: Not applicable.

INFORMATION CONTACTS:

Headquarters Office: Office of Educational Research and Improvement, Department of Education, 555 New Jersey Ave, NW., Washington, DC 20208-5644. Joseph Wilkes. Telephone: (202) 219-2186. Use the same number for FTS.

Web Site Address: http://www.ed.gov/prog_info/StarSchools.

Computer, Information Science and Engineering Grant⁵

FEDERAL AGENCY:

NATIONAL SCIENCE FOUNDATION

OBJECTIVES:

To support research improving the fundamental understanding of computer and information processing, to enhance the training and education of scientists and engineers who contribute to and exploit that understanding, to enhance the personnel pool for these fields, to provide access to very advanced computing and networking capabilities, and to provide the information intensive knowledge underlying selected national initiatives.

TYPES OF ASSISTANCE:

Project Grants.

USES AND USE RESTRICTIONS:

Funds may be used to pay costs of conducting research, and obtaining access to advanced computing and networking capabilities, salaries and wages, equipment and supplies, travel, publication costs, other direct costs, and indirect costs. This program does not provide support for fellowships, scholarships, product development or marketing, or proof-of-concept experimentation.

ELIGIBILITY REQUIREMENTS:

Applicant Eligibility: Public and private colleges and universities; nonprofit institutions; profit-making organizations, including small businesses; and State, and local government agencies are eligible. The greatest percentage of support goes to academic institutions.

Beneficiary Eligibility: Public and private colleges and universities; nonprofit institutions; profit-making organizations, including small businesses, and State, and local governments.

⁵ Source: Catalog of Federal Domestic Assistance, [Available Online: <http://www.cfda.gov>].

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APPLICATION AND AWARD PROCESS:

Pre-application Coordination: None required, except in specific cases, but preliminary discussions with relevant National Science Foundation program officers, by telephone or mail, are encouraged. This program is excluded from coverage under E.O. 12372.

Application Procedure: Proposals must be submitted electronically via FastLane to the Computer and Information Science and Engineering Directorate and should follow the general instructions and guidelines in The "Grant Proposal Guide," NSF 03-2. All proposals are acknowledged. This program is subject to the provisions of OMB Circular No. A-110 for nonprofit organizations. This program is excluded from coverage under OMB Circular No. A-102.

Award Procedure: NSF Staff members review and evaluate all proposals, with the advice and assistance of scientists and engineers who are specialists in the field covered by the proposal, of prospective users of research results when appropriate, and of specialists in other Federal agencies.

Deadlines: Deadlines and target dates are published in the NSF bulletin, program announcements and on NSF World Wide Web site URL: <http://www.cise.nsf.gov/>.

Range of Approval/Disapproval Time: Approximately 6 months or less, except in special instances.

Appeals: The Principal Investigator may request, in writing, that the National Science Foundation reconsider its action in declining any proposal application, renewal application, or continuing application.

Renewals: Standard Grants, in which the National Science Foundation agrees to support a specified level of effort for a specified period of time, are awarded with no statement of NSF intent to provide additional future support. Proposals for renewal of a Standard Grant compete with all other pending proposals.

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ASSISTANCE CONSIDERATIONS:

Formula and Matching Requirements: The Grant Proposal Guide (GPG) (Chapter II) and the Grant Policy Manual (Sec. 330) provide information on the general NSF policy on cost-sharing.

Length and Time Phasing of Assistance: Normally 6 months to 3 years; occasionally longer.

POST ASSISTANCE REQUIREMENTS:

Reports: For all multi-year grants (including both standard and continuing grants), the PI must submit an annual project report to the cognizant program office at least 90 days before the end of the current budget period. Within 90 days after the expiration of a grant, the PI is required to submit a final project report. Quarterly Federal Cash Transaction Reports are required. Other reporting requirements may be imposed via the grant instrument.

Audits: In accordance with the provisions of OMB Circular No. A- 133 (Revised, June 24, 1997), "Audits of States, Local Governments, and Non-Profit Organizations," nonfederal entities that expend financial assistance of \$300,000 or more in Federal awards will have a single or a program-specific audit conducted for that year. Nonfederal entities that expend less than \$300,000 a year in Federal awards are exempt from Federal audit requirements for that year, except as noted in Circular No. A-133.

Records: Grantees are expected to maintain separate records for each grant to ensure that funds are used for the general purpose for which each grant was made. Records are subject to inspection during the life of the grant and for 3 years thereafter.

FINANCIAL INFORMATION:

Obligations: (Grants) FY 01 \$478,150,000; FY 02 est \$514,880,000; and FY 03 est \$526,940,000.

Range and Average of Financial Assistance: \$1,000 to \$30,000,000; \$147,000.

INFORMATION CONTACTS:

Regional or Local Office: Not applicable.

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Headquarters Office: Assistant Director, Computer and Information Science and Engineering, National Science Foundation, 4201 Wilson Blvd., Arlington, VA 22230. Telephone: (703) 292-8900. NSF World Wide Web site URL: <http://www.cise.nsf.gov/>.

Web Site Address: <http://www.cise.nsf.gov/>.

Public Works and Economic Development Grants⁶

FEDERAL AGENCY:

DEPARTMENT OF COMMERCE

SUMMARY:

The Economic Development Administration (EDA) announces general policies and application procedures for investments that will help our partners across the nation (states, regions and communities) create wealth and minimize poverty by promoting a favorable business environment to attract private capital investment and high skill, high wage jobs through world-class capacity building, infrastructure, business assistance, research grants and strategic initiatives. EDA will fulfill this mission by promoting progressive domestic business policies and growth, and by assisting states, communities, and individuals to achieve their highest economic potential.

TYPES OF ASSISTANCE:

Project Grants.

FUNDING AVAILABILITY:

Funding appropriated under Public Law 107-77 is available for economic development assistance programs authorized by the Public Works and Economic Development Act of 1965, as amended (Public Law 89-136, 42 U.S.C. 3121, et seq and as further amended by Public Law 105-393) and for trade adjustment assistance authorized under Title II, Chapters 3 and 5 of the Trade Act of 1974, as amended, (19 U.S.C. 2341-2355; 2391)

(Trade Act), as amended by Public Law 105-119. Funds in the amount of \$335,000,000 have been appropriated for FY 2002 and shall remain available until expended.

ELIGIBILITY REQUIREMENTS:

Eligible recipients of EDA financial assistance are defined at 13 CFR 300.2 and eligible applicants are specified at 13 CFR 301.1. An "area" is an eligible recipient and is defined at 13 CFR 301.2. One category of the areas eligible for financial assistance are those areas meeting the

⁶ Source: Department of Commerce, [Available Online: <http://www.doc.gov/eda>]

City of Jacksonville, Florida

``special needs" criteria. The special needs criteria are published each year by this notice and are provided at Part XV.

EVALUATION AND SELECTION PROCESS:

To apply for an award under this notice, an eligible recipient must submit a pre-application proposal to the appropriate Economic Development Representative for the area or regional office. Each pre-application proposal is circulated by a project officer to the appropriate regional office staff for review, comments, and recommendations. When the necessary input and information are obtained, the pre-application proposal is considered by the regional office Investment Review Committee (IRC) made up of regional office staff. The IRC discusses the proposal and all pertinent documentation and evaluates it using the general evaluation criteria set forth at 13 CFR 304.1 and 304.2 as further defined by the Supplementary Evaluation Criteria set forth in this notice below, and the program specific criteria provided under 13 CFR 305.2 for Public Works, 13 CFR 306.2 for Planning Assistance, 13 CFR 307.2 for Technical Assistance, 13 CFR 307.6 for University Centers, 13 CFR 307.10 for National Technical Assistance, Training, Research, and Evaluation, and 13 CFR 308.2 and 308.4 for Economic Adjustment. In addition, each proposal is evaluated for consistency with the Funding Priorities set forth below. After completing its evaluation, the IRC recommends whether or not an application should be invited, documenting its recommendation in the meeting minutes and/or in the Investment Proposal Summary and Evaluation Form. The IRC action is reviewed at headquarters for quality assurance. After receiving quality control clearance, the Selecting Official (depending on the program, either the Regional Director or the Assistant Secretary) selects the applications to be invited. In the case of a continuation grant, no pre-application proposal is required. Proposals received after the date of this notice will be processed in accordance with the requirements set forth herein until the next annual NOFA is published.

STATES COVERED:

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Appendix E
Analysis of Legal Issues (The Baller Herbst Law Group report to JEA)

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**PRIVILEGED AND CONFIDENTIAL
MEMORANDUM**

To: JEA

From: Sean Stokes and Jim Baller

Date: February 14, 2003

Re: Analysis of Legal Issues Related To The Provision Of Communications Services

JEA has constructed a sophisticated fiber optic system to meet the on-going communications needs of its electric and water utility services. From a technological standpoint, this fiber can readily be expanded to provide commercial voice, video and data applications, either by JEA or third-party providers. JEA is currently exploring the feasibility and strategic implications of providing a range of communications services. At the same time, the City of Jacksonville has undertaken a comprehensive analysis of the telecommunications needs of the City, its residents, businesses and institutions, as well as the best manner to meet those needs. As part of the City's review the communications capabilities and potential role of JEA in meeting the needs of the City is being assessed.

JEA has asked for our assistance in identifying and analyzing the relevant legal issues of its involvement in the provision of communications services or capabilities.⁷ In this memorandum, we analyze a series of issues that can be broadly grouped into three categories: (1) issues relating to JEA's authority to provide the communications services under consideration, including the entry-level procedural steps that JEA would have to take to qualify as a service provider, as well as existing contractual obligations and limitations; (2) federal and state regulatory issues that

⁷ The Baller Herbst Law Group is not licensed to practice in Florida and does not claim to have expertise in Florida telecommunications law. We do, however, have substantial experience with municipal entry into telecommunications at the federal level through our representation of the American Public Power Association at the national level and through our representation of state municipal associations and individual municipal electric utilities in several states, including Florida. As we understand, our role here, it is to examine the relevant federal and Florida requirements and give JEA and its local counsel the benefit of our national perspective. In doing so, we will review and present our initial impressions of and questions about various provisions of Florida law. For advice on Florida law, however, JEA must ultimately rely on its Florida counsel.

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apply to the services under consideration; and (3) issues affecting JEA's choice of a business model, including tax and bond considerations. For the reasons discussed below, we believe that JEA has ample authority to provide a wide range of communications services.

At a later date, we can discuss the specific requirements of how the various services under consideration would be regulated, if at all, at the federal and state levels. For present purposes it is sufficient to note that JEA should not encounter any significant regulatory burdens in furnishing the services under consideration. Federal and state regulation of these services is either non-existent, minimal or routine, and scores of similarly-situated municipal utilities across the United States have found little problem in complying with all applicable regulatory requirements.

I. FEDERAL LAW

Federal law encourages public entities to provide communications services of all kinds, but it does not affirmatively empower them to do so. With respect to telecommunications services, Section 253(a) of the Telecommunications Act of 1996, 47 U.S. § 253(a), states:

No state or local statute or regulation or other state or local legal requirement may prohibit or have the effect of prohibiting the ability of any entity to provide any interstate or intrastate telecommunications service.

Despite the broad sweep of this language, at least two courts have held that § 253(a) is not a grant of federal authority to local governments to provide telecommunications services. *Missouri Municipal League v. FCC*, 299 F.3d 949, 956 (8th Cir. 2002); *City of Bristol, VA v. Earley*, 145 F.Supp.2d 741, 745 (W.D.Va. 2001) (vacated as moot following enactment of corrective state legislation). Section 253(a) does, however, preclude states from removing pre-existing local authority to provide telecommunications services. *Id.*⁸

Similarly, in the cable area, Section 613(e)(1) of the Communications Act 47 U.S.C. § 533(e)(1), states that a “franchising authority may hold any ownership interest in any cable system.” The term “franchising authority,” in turn, is defined in Section 602(10), 47 U.S.C. § 522(10), as “any governmental entity empowered by Federal, state or local law to grant a franchise.” Thus, one could reasonably read the Act as authorizing any local government to provide cable television service. Unfortunately, the courts have read this language as merely “permissive rather than empowering” – *i.e.*, the language does not furnish a federal grant of authority to provide cable service. *See, e.g., Time Warner Communications Inc. v. Borough of Schuylkill Haven*, 784 F. Supp. 203, 213 (E.D. Pa. 1992).⁹

⁸ In an earlier decision, the U.S. Court of Appeals for the District of Columbia held that the term “any entity” in Section 253(a) does not cover public entities. *City of Abilene v. FCC*, 164 F.3d 49 (D.C. Cir. 1999). In finding otherwise, both the *Missouri* and *Bristol* courts rejected the D.C. Circuit’s rationale as inconsistent with five decades of Supreme Court precedents on the effect of Congress’s unrestrictive use of the modifier “any.”

⁹ Note, however, in the prior case of *Warner Cable Communications, Inc. v. City of Niceville, FL*, 911 U.S. 634, 635 (11th Cir. 1990), the Eleventh Circuit found that Section 533(e) “authorizes local governments to own and operate their own cable systems” (emphasis added).

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With regard to high-speed Internet access, or “broadband” as it is sometimes called, the Bush Administration, Congress, the States, local governments, and other key stakeholders all agree that advanced communications services and capabilities should be deployed nationwide as rapidly as possible. The only issue is how best to achieve this goal.

The national goal of rapid and ubiquitous deployment of broadband is reflected in various sections of the Telecommunications Act. For example, Section 706(a), requires the Federal Communications Commission (FCC) and the States to “encourage the deployment on a reasonable and timely basis of advanced telecommunications capability to all Americans (including, in particular, elementary and secondary schools and classrooms) by utilizing, in a manner consistent with the public interest, convenience, and necessity, price cap regulation, regulatory forbearance, measures that promote competition in the local telecommunications market, or other regulating methods that remove barriers to infrastructure investment.”

Similarly, Section 706(b) requires the FCC to determine annually whether “advanced telecommunications capability is being deployed to all Americans in a reasonable and timely fashion,” and if the FCC’s determination is negative, to “take immediate action to accelerate deployment of such capability by removing barriers to infrastructure investment and by promoting competition in the telecommunications market.” Congress also declared in Section 254(b)(3) the national policy that “Consumers in all regions of the Nation, including low-income consumers and those in rural, insular, and high cost areas, should have access to telecommunications and information services, including interexchange services and advanced telecommunications and information services, that are reasonably comparable to those services provided in urban areas and that are available at rates that are reasonably comparable to rates charged for similar services in urban areas.”

Nevertheless, the foregoing authorities are suggestive only. As with telecommunications and cable services, these authorities do not expressly authorize local governments to provide high-speed Internet access service.

II. FLORIDA LAW

In this section we begin by analyzing the primary sources of Florida law to which JEA can look for authority to provide the communications services at issue. We then review the procedural steps that JEA would have to take to give effect to such authority.

A. “Home Rule” Authority

Article VIII, Sections 1(g), 2(b) and 3 of the Florida Constitution, as amended, confers broad “home rule” powers on counties, municipalities, and consolidated governments, including that of the City of Jacksonville. Section 166.021 of the Florida Statutes elaborates on this broad grant of home rule authority for municipal governments stating:

- (1) As provided in s. 2(b), Art. VIII of the State Constitution, municipalities shall have the governmental, corporate, and *proprietary powers* to enable them to

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- conduct municipal government, perform municipal functions, *and render municipal services, and may exercise any power for municipal purposes, except when expressly prohibited by law.*
- (2) "Municipal purpose" means any activity or power which may be exercised by the state or its political subdivisions.
 - (3) The Legislature recognizes that pursuant to the grant of power set forth in s. 2(b), Art. VIII of the State Constitution, the legislative body of each municipality has the power to enact legislation concerning any subject matter upon which the state Legislature may act...
 - (4) The provisions of this section *shall be so construed as to secure for municipalities the broad exercise of home rule powers granted by the constitution. It is the further intent of the Legislature to extend to municipalities the exercise of powers for municipal governmental, corporate, or proprietary purposes not expressly prohibited by the constitution, general or special law, or county charter and to remove any limitations, judicially imposed or otherwise, on the exercise of home rule powers other than those so expressly prohibited...*

FLS. § 166.021(emphasis added). In granting the charter for the consolidated City of Jacksonville, the Florida legislature specifically recognized this constitutional and statutory grant of broad home rule authority. Article 3, section 3.01(a) of the City's charter states:

The consolidated government:

- (a) Shall have and may exercise any and all powers which counties and municipalities are or may hereafter be authorized or required to exercise under the Constitution and general laws of the State of Florida, including, but not limited to, all powers of local self-government and home rule not inconsistent with general law conferred upon counties operating under county charters by s. 1(g) of Article VIII of the State Constitution; conferred upon municipalities by s. 2(b) of Article VIII of the State Constitution conferred upon consolidated governments of counties and municipalities by section 3 of Article VIII of the State Constitution; conferred upon counties by ss. 125.85 and 125.86, Florida Statutes; and conferred upon municipalities by ss. 166.021, and 166.042, Florida Statutes; all as fully and completely as though the powers were specifically enumerated herein.

- (c) May engage in any activity in which the State of Florida or any of its political subdivisions may engage and may exercise any power which may be exercised by the State of Florida or any of its political subdivisions within Duval County, not expressly prohibited by the Constitution or general laws of the State of Florida, as authorized by s. 166021(1), Florida Statutes.

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- (e) May repeal or amend any provision of this charter, and adopt other provisions of this charter by ordinance, to the same extent as could be done by the legislature of the State of Florida...

Further, § 3.02 of the Jacksonville Charter provides:

The powers of the consolidated government *shall be construed liberally in favor of the consolidated government. The specific mention of, or failure to mention, particular powers in this charter shall not be construed as limiting in any way the general powers of the consolidated government* as stated in section 3.01. *It is the intent of this article to grant to the consolidated government full power and right to exercise all governmental authority necessary for the effective operation and conduct of the of the government of the City of Jacksonville and all of the affairs of the consolidated government and to secure to the consolidated government to the fullest extent of county and municipal home rule consistent with the Constitution and general laws of the State of Florida.* The consolidated government may not exercise any municipal power within the Cities of Jacksonville Beach, Atlantic Beach and Neptune Beach and the town of Baldwin, but it may exercise any county power throughout the Duvall county.

Charter, as readopted by Chapter 92-341, § 3.02 (emphasis added). Thus, if doubts exist about particular powers of the City to engage in particular activities, such powers must be “*construed liberally,*” Charter § 3.02.

Given the breath of this home rule authority, Jacksonville has broad discretion to engage in a wide range of proprietary activities unless expressly prohibited by the Constitution or general laws of the State of Florida. No Florida law purports to impose substantive limits on the ability of home rule governmental units to provide communications service of their choice. To the contrary, as discussed in greater detail below, the Florida Code confers express authority upon Florida municipalities to provide telecommunications services (FLS. § 166.047). This provision does not limit the authority of home rule units to provide telecommunications services. Rather, it merely prescribes the procedures that home rule units must follow to take advantage of their authority to provide such services. In addition, we have found no prohibitions on the provision of services that, unlike telecommunications services, are not generally considered “utility” services, including cable television and Internet access service.¹⁰

In summary, as a home rule consolidated government, Jacksonville can provide whatever communications services that it desires, subject only to the procedural requirements discussed in the next sections.

¹⁰ Several cases decided in Florida and elsewhere have held that cable television is not a “public utility.” *See, e.g., Devon-Aire Villas Homes v. Americable Assoc.*, 490 So.2d 60 (Fla. Dist. Ct. App. 1885); *Sheppard v. City of Orangeburg*, 442 S.E2d 601 (S.C. 1994); *Sacramento Cable Television v. City of Sacramento*, 234 Cal.App.3d 232 (1991); *Charter Communications Co. v. City of Bristol, VA*, <http://www.vawd.uscourts.gov/OPINIONS/JONES/1-02CV00197.PDF>; *see also* http://www.cablenj.org/facts_cable.asp.

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B. Statutory Authority to Provide Telecommunications Services

Subject to the procedural requirements discussed below, all Florida municipalities, have explicit authority to go into the telephone business. Section 166.047 of the Florida Code provides,

Telecommunications services. -- A telecommunications company that is a municipality or other entity of local government may obtain or hold a certificate required by chapter 364, and the obtaining or holding of said certificate serves a municipal or public purpose under the provision of s. 2(b), Art. VIII of the State Constitution...

FLS. § 166.047.

Further, § 364.02(12) of the Florida Statutes defines a “telecommunications company” as:

- (a) "Telecommunications company" includes every corporation, partnership, and person and their lessees, trustees, or receivers appointed by any court whatsoever, *and every political subdivision in the state*, offering two-way telecommunications service to the public for hire within this state by the use of a telecommunications facility.

FLS, § 364.02(12)(a)(emphasis added). Thus as a “political subdivision in the state,” the City is considered a potential eligible provider of telecommunications services, which includes all of the telecommunications services that a private-sector telephone company typically provides.

C. Cable and Internet Services Pursuant to Home Rule Authority

Unlike the statutory treatment of telecommunication services, there is no explicit grant of statutory authority to provide cable television services or Internet access services under Florida law. As a result, the City must rely on its grant of home rule authority, including its broad “*proprietary powers*” to “*render municipal service...except when expressly prohibited by law.*” FLS. § 166.021(1) (emphasis added). We have found no Florida prohibition, express or otherwise, on the provision of cable television services or Internet services by municipalities. Accordingly, in the absence of an explicit prohibition Jacksonville may offer cable and Internet services pursuant to its home rule authority.

Significantly, in the case of “cable services” and “cable systems,” Florida law specifically incorporates the federal definitions of these terms. For example, FLS. § 364.02(12)(f) defines a cable television company as providing cable services “as defined under 47 U.S.C. § 522.” Similarly, FLS. § 166.046(1)(b), utilizes the federal definition of cable system. As indicated above, federal law contemplates municipal provision of cable services and specifically states that a “franchising authority may hold any ownership interest in any cable system.” The term “franchising authority,” in turn, is defined under federal law in § 602(10), 47 U.S.C. § 522(10), as “any governmental entity empowered by Federal, state or local law to grant a franchise.”

D. Internet Services

There is no Florida statute that explicitly grants or limits the authority of municipalities to provide Internet services. Like most states, Florida has taken a “hands-off” approach to the Internet to encourage its rapid development.¹¹ For home rule units of local government the absence of any state legislation involving Internet access services means that there is no statutory impairment of such home rule authority.

E. Procedural Steps Necessary to Perfect General Authority to Provide Communications Services

We now turn to the procedures necessary to implement these general authorities, we will separately address in Section III below, the applicable federal and state regulatory requirements, if any, associated with various services.

1. Telecommunications Services

(a) Authorizing resolutions

Under Florida law “telecommunications services,” including those provided by municipalities, are considered utility services. FLS. § 364. Pursuant to Article 21 of the Jacksonville Charter, JEA was established for the purpose of “own[ing], manag[ing] and operat[ing] a utilities system within and without the City of Jacksonville.” Charter, 21.01. The term “utilities system” is defined in Section 21.02(a) of the Charter to mean:

the electric utility system and the water and sewer utility system now operated by JEA . . . and any natural gas utility system to be operated in the future by JEA *together with any other additional utility systems as may be hereafter designated as a part of the utilities systems operated by JEA as provided in section 21.04 (w) [sic] herein.*

Charter § 21.02(a)(emphasis added). Section 21.04(v) of the Charter provides that:

If JEA determines that it is necessary or appropriate for it to provide, operate or maintain *any other utility system or function* other than electric, water wastewater

¹¹ For many years, cable operators offered Internet access service as a “cable service,” and telephone companies routinely offered Digital Subscriber Line Internet access over their telephone facilities. In March of 2002, however, in order to encourage more rapid broadband deployment, the Federal Communications Commission classified Internet access service provided over cable systems as an “information service,” and not as a “cable service” or as a “telecommunications service” under federal law. *In the Matter of Inquiry Concerning High-Speed Access to the Internet Over Cable and Other Facilities Internet Over Cable Declaratory Ruling ...*, GN Docket No. 00-185, CS Docket No. 02-52, (rel. March 15, 2002). The FCC's decision is the subject of consolidated appeals before the United States Court of Appeals for the Ninth Circuit, in *Brand X Internet Services, Inc. v. FCC*, Nos. 027518 et al. The FCC has also proposed to do the same thing for Internet access service provided over wireline facilities. *In the Matter of Appropriate Framework for Broadband Access to the Internet over Wireline Facilities ...*, CC Docket Nos. 02-33, 95-20, 98-10, *Notice of Proposed Rulemaking* (rel. February 15, 2002).

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and natural gas, JEA shall by resolution identify such additional utility system or systems or function or functions and indicate its desire to provide such utility service or services or function or functions to the council. Upon the adoption and approval of this resolution by JEA and the council, voting as separate entities, JEA, with respect to the specified system or systems, shall be vested with all powers set forth herein or in general law that would, but for the provisions of this article, apply to such specified utility system or systems.

Charter 21.04(v)(emphasis added). Thus, the addition of a commercial telecommunications system function to JEA's current utility functions can be accomplished by the adoption of resolutions by JEA and by the City Council. As discussed below, there may be a range of telecommunications-related services that fall short of the federal or state definitions of "telecommunications services" – including dark fiber leasing and inter-governmental services – that JEA may be able to provide on an ancillary basis to its existing utility functions without seeking additional authority through a resolution. An issue that may arise is the distinction between, on the one hand, providing incidental service utilizing surplus capacity on existing plant and equipment, and, on the other hand, providing new services utilizing substantially new or expanded plant and equipment.¹²

(b) State Certification Requirements

The Florida Public Service Commission (FPSC) has general regulatory authority over all telephone companies in the state, including municipal utilities. Under FLS. § 364.33, all telecommunications companies are required to obtain a certificate of necessity from the FPSC, as a prerequisite to the construction or operation of telecommunications facilities used for the provision of telecommunications services to the public.¹³ Sections 166.047 and 364.02(12) confirm that this requirement is fully applicable to municipally-owned telecommunications providers. As a new entrant, JEA would likely be eligible for a streamlined certification process. Moreover, as we have learned in other states, there are certain advantages to having a certificate.¹⁴ Even if the City has no immediate interest in providing the types of regulated services that would require a certificate, obtaining a certificate in advance may make it easier and faster for it to provide such services in the future should it ever choose to do so. There is no requirement under state law for a certificated carrier to offer the full range of services that its certificate authorizes it to provide.

2. Cable and Internet Services

¹² What is truly an "incidental" service provided over "excess capacity" can obviously be a fact-specific matter of debate. In *Municipal Elec. Auth. of Georgia v. Ga. Pub. Serv. Comm'n*, 241 Ga. App. 237, 525 S.E.2d 399, 403 (1999), cert. denied, *Municipal Electric Authority of Georgia v. Georgia Public Service Comm'n* (Ga. 2000), MEAG failed to persuade the court that the fiber optic facilities over which it intended to provide telecommunications services were simply excess capacity for its electric utility. Similarly, in *Washington Independent Telephone Association v. Pacific County Public Utility District #2*, Dkt. No. 99-2-00430-4 (Super. Ct. Pacific County, WA), the parties are litigating whether Pacific's Internet access service is merely incidental to its electric utility business or is an entirely new business.

¹³ Such certification is not necessary for authority to construct internal communications systems or communications lines that are not utilized for the provision of telecommunications services to the public.

¹⁴ For example, the City of Bristol, VA, found that being certified as a Competitive Local Exchange Carrier would facilitate its ability to obtain interconnection and collocation agreements with the incumbent local exchange carrier. In a separate memo we broadly set out the benefits and obligations of certificated carriers under Florida law.

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Florida law does not provide specific guidance regarding the procedures that a municipality must use to provide non-utility services under its home rule authority, such as cable television and Internet access service. Thus, as with telecommunications services, the City can proceed by resolution or by ordinance.¹⁵ As discussed below, there are specific non-discrimination requirements with respect to cable franchising that may have implications for a municipal cable system.

F. Summary of Authority and Procedural Issues

As shown above, the City acting through JEA appears to have authority to provide any services that it wishes. With respect to non-utility services such as cable television and Internet service, JEA can proceed under the City's home rule authority.

G. Limitations In Existing Agreements

Another potential area of limitation on JEA's communications activities resides within its existing contractual agreements. We have reviewed several of JEA's fiber lease agreements with new competitive telecommunications entrants and the incumbent cable operator. Under these agreements, JEA typically owns all of the fiber installed, retains a right to use a specified number of the fibers, and leases the remainder to the communications provider. While these agreements have yielded a source of income and fiber for JEA, several of them contain explicit or implicit limitations on JEA's use of its fiber during the life of the agreement. For example, in its February 1993 Master Agreement with Continental Cablevision, JEA agreed to lease certain fiber to Continental and its affiliate "Alternet," a certificated alternative access vendor, and JEA agreed that, for the twenty year term of the agreement, it would not use the fibers that it retained to compete with Continental or with Alternet. Similarly, JEA's Master Agreement of January 1996 with TelSave provides that "JEA shall not use the fibers provided to JEA by Tel under this Agreement to compete with Tel." Likewise, in its Master Agreement with Intermedia Communications, Inc., JEA agreed in Article V to "retain for governmental and utility purposes a specified number of fibers." While "utility purposes" could arguably include the provision of competitive communications services, the context of the agreement and JEA's then-current utility operations would suggest that the parties understood that this limitation applied only to electric and water utility services. An identical restriction is contained in Article V of JEA's 1994 fiber lease agreement with Jacksonville Teleport.

To the extent that the substantive limitations in these agreements remain in place, JEA will be restricted from utilizing a portion of its fiber commercial communications activities. We recommend that JEA conduct an audit of its fiber and its lease agreements to determine what specific fibers are subject to these restrictions. All of the agreements that we have reviewed provide for termination in the event of non-compliance. JEA should therefore carefully review

¹⁵ The FPSC has no general jurisdiction over non-utility business ventures, but it may have jurisdiction over certain aspects of such non-utility activities carried out in conjunction with utility assets or other resources. For example, if a municipal utility sought to operate a Internet service through a department formed from with the utility, the FPSC might have jurisdiction with respect to accounting issues and cross-subsidization between the two entities.

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all of these agreements to see if any can, or should be, terminated or renegotiated. As part of such a review, JEA should also confirm whether the communications provider has given JEA an opportunity to consent to all transfers of ownership, as is often required under the agreements.

III. REGULATORY REQUIREMENTS

Next, we address the regulatory requirements that a provider of communications services must meet. We will first review the general regulatory framework at the federal and state levels. We will then examine how this framework applies to the specific services that the City is considering.

A. Federal Regulatory Structure

As a provider of communications services, the City may be subject to various federal requirements, depending on what services it chooses to offer and how it structures its activities. This section is intended to provide an overview of the federal regulatory structure and key regulatory requirements. A detailed discussion of specific federal requirements is beyond the scope of this analysis.

In 1934, Congress enacted the first comprehensive federal communications law, the Communications Act of 1934, which incorporated many key federal principles and requirements that continue to exist today. In the 1934 Act, Congress established the FCC and granted it broad authority to regulate “interstate and foreign . . . communication by wire and radio.” The term “interstate” meant any service that originates in one state and terminates in another. The Act also preserved state authority over communications originating and terminating within their borders: “Nothing in this Act shall be construed . . . to give the Commission jurisdiction with respect to . . . charges, classifications, practices, services, facilities, or regulations for or in connection with intrastate communication service of any carrier.”¹⁶

The 1934 Act gave the FCC jurisdiction only over “common carriers” – that is, entities that hold themselves out as being willing to provide services indiscriminately to all who want them and are willing to pay the going rate. The 1934 Act required such common carriers to provide their services at just and reasonable prices; to refrain from making unjust or unreasonable discriminations; to utilize just and reasonable practices, classifications and regulations; to keep records, make reports and file tariffs in accordance with FCC requirements; to obtain FCC approval before acquiring or constructing new lines or terminating services; and to participate in FCC complaint processes. The Act did not apply similar requirements to “private carriers” that

¹⁶ The physical presence of facilities within a state does not by itself confer jurisdiction upon a state public utility commission – communications over those facilities must originate and terminate within the state to constitute an intrastate transmission. *Teleconnect Co. v. Bell Telephone Co. of Pennsylvania*, 10 FCC Rcd 1626 (1995), *aff’d*, *Southwestern Bell Telephone Co. v. F.C.C.*, No. 95-1139 (D.C. Cir. June 27, 1997). Thus, the fact that JEA’s telecommunications facilities may reside wholly within Florida does not necessarily mean that communications services offered by JEA are intrastate. Conversely, communications that originate and terminate within the same state but which may be routed through a separate state are nevertheless considered intrastate in nature.

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provide communications pursuant to individually-tailored, individually-negotiated agreements.¹⁷ This distinction between common and private carriage is an especially important one for public power utilities today.

The 1934 Act also established the precedent of dividing communications services into separate and distinct categories, each with its own history, definitions and substantive requirements. The 1934 Act separated telephone and telegraph services from radio services, regulating the former under Title II and the latter under Title III. The FCC followed that precedent in the early 1970s, when it began to treat computer-based data and information processing services as a separate, unregulated category of services called “enhanced” or “information” services. Congress did so as well in 1984, when it enacted Title VI to regulate cable television services, and again in 1993, when it added a new part to Title III to deal with wireless telecommunications services. The FCC has struggled to keep these categories separate, but with the rapid convergence of services and providers today, and particularly with the explosive growth of the Internet, both Congress and the FCC are coming under increasing pressure to discard the traditional regulatory distinctions and reinvent the communications laws.

Between 1934 and 1996, Congress amended the Communications Act many times to respond to significant technological, commercial, legal and other developments, and the FCC and the courts interpreted the Act on scores of occasions. As new services that defied easy classification came on the market, the FCC and the states repeatedly fought over who had jurisdiction over them. Similarly, as the lines between computer applications, data processing and telecommunications blurred, the FCC and the telecommunications industry continuously battled over whether, or to what extent, the new services should be regulated as “telecommunications” services or left unregulated as “enhanced” or “information” services. Despite constant tensions, however, the Communications Act survived for decades without fundamental change until the amendments of the landmark Telecommunications Act of 1996.

From the standpoint of the JEA, the following are the main features of the Communications Act, as amended by the Telecommunications Act of 1996, and as interpreted by the FCC and the courts. The linchpin of the amended Act is the term “telecommunications service.” Congress used that term throughout the Telecommunications Act to allocate various obligations, burdens and incentives among incumbent and potential new providers to encourage them to act in ways that will fulfill the goals of the Act.

In 47 U.S.C. § 153(46), the Act defines “telecommunications service” as “the offering of telecommunications for a fee directly to the public, or to such classes of users as to be effectively available to the public, regardless of the facilities used.” The embedded term “telecommunications” is defined in 47 U.S.C. § 153(43) as “the transmission, between or among points specified by the user, of information of the user's choosing, without change in the form or content of the information as sent or received.”

¹⁷ *In The Matter Of Federal-State Joint Board On Universal Service*, CC Docket No. 96-45, Report to Congress, FCC 98-67, 1998 WL 166178, ¶ 22 (rel. April 10, 1998) (“Report to Congress”).

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The FCC's most comprehensive analysis of the term "telecommunications service" is found in its orders implementing the universal service provisions of the Act. In order to foster ubiquitous affordable telecommunications service in all areas of the country, the Telecommunications Act requires that all telecommunications service providers contribute towards a universal service fund. It was therefore necessary for the FCC to clearly define the scope of entities and services on which such obligations are to be imposed. In its *First Report and Order* to implement the Universal Service provisions of the Act, 12 FCC Rcd 8776 (1997) (*First Universal Service Order*), the FCC parsed the definition of "telecommunications service" and concluded that, to be considered a mandatory contributor to universal service, a carrier must offer "telecommunications" and such telecommunications must be offered "for a fee directly to the public, or to such classes of users as to be effectively available directly to the public."¹⁸ In interpreting this latter provision, the FCC has concluded that the phrase "directly to the public" was meant to encompass only services provided on a common carrier basis and not services offered pursuant to private contracts or to "significantly restricted classes of users." Citing the Joint Explanatory Statement of the Conference Committee, S. Rep. No. 104-230, 104th Cong., 2d Sess. 115 (1996) and *National Association of Regulatory Utility Commissioners v. FCC*, 553 F.2d 601, 608 (D.C. Cir. 1976), the FCC stated:

Directly to the Public. We find that the definition of "telecommunications services" in which the phrase "directly to the public" appears is intended to encompass only telecommunications provided on a common carrier basis. This conclusion is based on the Joint Explanatory Statement, which explains that the term telecommunications service "is defined as those services and facilities offered on a 'common carrier' basis, recognizing the distinction between common carrier offerings that are provided to the public . . . and private services." Federal precedent holds that a carrier may be a common carrier if it holds itself out "to service indifferently all potential users." Such users, however, are not limited to end users. Common carrier services include services offered to other carriers, such as exchange access service, which is offered on a common carrier basis, but is offered primarily to other carriers. Precedent further holds that a carrier will not be a common carrier "where its practice is to make individualized decisions in particular cases whether and on what terms to serve."¹⁹

A "telecommunications carrier" is defined in 47 U.S.C. § 153(44) as "any provider of telecommunications services." Section 153(44) goes on to say that such a carrier "shall be treated as a common carrier under this Act only to the extent that it is engaged in providing telecommunications services."

The term "telecommunications service" covers a broad range of activities. As a carrier moves from providing relatively simple services to providing more complex and extensive services, it will encounter increasingly heavy regulatory obligations and burdens. At the same time, as a provider's income from telecommunications services increases, it will have to shoulder an increasing share of the burden to support universal service.

¹⁸ *First Universal Service Order*, at ¶ 777.

¹⁹ *First Universal Service Order*, ¶ 785.

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At the simplest level, all providers of “telecommunications service” are subject to various general duties. They must meet all relevant common carrier requirements of Title II of the Communications Act (which the FCC has relaxed to some extent). Pursuant to § 214 of the Communications Act, all interstate telecommunications carriers are required to obtain prior FCC approval to construct or extend telecommunications facilities. Specifically § 214 requires the FCC to find that the construction or extension of such facilities will serve the public convenience and necessity. Under 47 C.F.R 63.07 of the FCC's rules, however, non-dominant domestic interstate carriers are not required to obtain 214 certification from the FCC. As a consequence, there is no generally applicable carriers federal certification requirement for non-dominant domestic telecommunications.

All telecommunications service providers must protect consumer privacy. They must comply with the provisions of Section 251(a) that require them to interconnect directly or indirectly with the facilities and equipment of other telecommunications carriers and to refrain from installing network features, facilities or capabilities that may adversely affect handicapped persons. And, they must also file reports and make contributions to the federal universal service program, as required by Section 254 of the Act.

If JEA chooses to become a “local exchange carrier” (LEC) – a provider of local telephone service and/or access to long distance service – it would also have to meet the additional interconnection obligations of Section 251(b). These include allowing competing telecommunications carriers to resell; providing other telecommunications carriers number portability, if technically feasible, in accordance with the FCC’s requirements; affording them dialing parity; permitting them to make attachments to poles, ducts, conduits and rights of way at rates, and on terms and conditions, that are consistent with section 224; and establishing reciprocal compensation arrangements for the transport and termination of telecommunications.

To illustrate the application of the Act’s key definitions, we turn to the communications services that JEA would most likely consider either alone, or in combination with strategic partners:

- communications services provided to other branches of the local government and schools
- “dark fiber” (i.e., optical fiber strands without the electronics necessary to transmit or receive information)
- bandwidth service (i.e., the transport of voice, video or data at specified capacities) on either a wholesale or dedicated end user basis
- cable television service
- Internet access service, including Internet Protocol voice service
- competitive access to long distance providers (thus bypassing the local telephone company and avoiding its access charges) or private line services
- other telecommunications services

Depending on how it holds itself out, JEA can provide the majority of these services without becoming a “telecommunications carrier” as defined under federal law and subjecting itself to the federal burdens imposed on “telecommunications carriers.”

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Intergovernmental agreements

Services provided to meet the internal needs of JEA, the City, the schools, and other units of the local government are not “telecommunications services” because they are not offered “for a fee directly to the public.” Instead, even if fees are paid, such arrangements are more akin to private carriage agreements than to common carrier offerings.

Dark Fiber Leasing

By definition, “dark fiber” is fiber-optic cable without the electronics necessary to transmit information. The leasing of dark fiber thus does not constitute a “telecommunications service” under federal law. As indicated above, a constituent part of the definition of “telecommunications service” is the imbedded term “telecommunications.” Beginning in its *First Universal Service Order*, and on many occasions since then, the FCC has consistently said that “transmission” of information is an essential part of the definition of “telecommunications.”

For example, in its *Fourth Universal Service Order*, the FCC confirmed the importance of the “transmission” component of the statutory definition of “telecommunications” as applied to satellite providers. The FCC responded that, based on “the very limited activity that satellite providers engage in when they *lease bare transponder capacity*, it appears that, for purposes of the contribution requirements under section 254 of the Act, satellite providers do not provide telecommunications because they *do not transmit information* when they lease bare transponder capacity.”²⁰

The FCC based this exclusion on a description by PanAmSat of what occurs when satellite operators lease bare transponder capacity:

When a satellite operator enters into a bare transponder agreement with a customer, the satellite operator is merely providing its customer with the exclusive right to transmit a specified piece of hardware on the satellite. That, essentially, is the extent of the operator’s obligation.²¹

Likewise, in its instructions to Form 499A, which telecommunications providers must use to report the data on which their universal service obligations are based, the FCC notes that providers should report on Line 418 “other revenues that should not be reported in the contribution bases.” According to the FCC, these include revenues from “the sale or lease of transmission equipment, such as dark fiber, that is not provided as part of a telecommunications service.”

Perhaps the strongest statement as to the regulatory status of dark fiber is found in the Eleventh Circuit’s *Gulf Power* decision, in which the court held that dark fiber is not a service at all.

The Petitioners' final challenge is to the FCC's statutory authority to regulate the rents utilities charge for dark fiber attachments. Dark fiber, which exists within a

²⁰ *Fourth Report and Order*, at ¶. 290 (emphasis added).

²¹ *Id.* (footnote omitted).

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fiber optic cable, “consists of . . . bare capacity and does not involve any of the electronics necessary to transmit or receive signals over that capacity.” *Report and Order*, 13 F.C.C.R. at 6810. The advantage of stringing cables with lit and dark fiber is that dark fiber provides excess distribution and transmittal capacity for a cable or telecommunications company to use as its service network expands. Dark fiber also may be leased to a third party. *Because dark fiber is bare capacity, it technically is neither a telecommunications service nor a cable service. In fact, it is not a service at all; it is simply an inactive fiber.*²²

Even if leasing or selling dark fiber satisfied the statutory definition of “telecommunications,” a provider of dark fiber would not be considered a provider of “telecommunications service” unless it offered the dark fiber “for a fee directly to the public.” Typically, dark fiber leases are long term, individualized agreements with carriers or large commercial users containing all of the indicia of private carrier contracts rather than common carriage. For example, telephone carriers leasing dark fiber routinely require a contractual provision setting out an “indefeasible right of use” of the fiber for a specified period of time so as to ensure their ability to provide service and allocate expenses. Thus, if JEA’s provision of dark fiber is on a private contractual basis, then it is not “offered directly to the public” and cannot be considered a “telecommunications service” under federal law.²³

Bandwidth Service

Bandwidth services, including point-to-point data communications and competitive access to long distance providers may involve “telecommunications” as defined in the Act, but whether they are “telecommunications service[s]” will depend on how they are offered. As the courts and the FCC have repeatedly found, the legislative history of the Telecommunications Act makes clear that, by using the qualifier “directly to the public,” Congress intended to apply the definition of “telecommunications service” only to common carriers – entities that hold themselves out as offering service indifferently to any purchaser willing to pay the going rate. See, e.g., *State of Iowa v. FCC*, 218 F.3d 756, 759 (D.C. Cir. 2001), citing *FCC v. Midwest Video Corp.*, 440 U.S. 689 (1979), and *Nat’l Ass’n of Regulatory Util. Comm’rs v. FCC*, 525 F.2d 630 (D.C. Cir. 1976); *In the Matter of Joint Federal-State Universal Service Board*, 16 FCC Rcd. 571, 2000 WL 1869492, at *572-73. JEA can thus avoid federal regulation as a “telecommunications carrier” by refraining from offering service indifferently to all potential users and instead making bandwidth and competitive access services available only pursuant to individually-tailored and individually-negotiated agreements. We note, however, that even if

²² *Gulf Power v. Federal Communications Commission*, 208 F.3d 1263 (11th Cir. 2000) (emphasis added), *rev’d on other grounds, National Cable & Telecommunications Assn., Inc v. Gulf. Power Co.*, 534 U.S. 327 (2002).

²³ The one exception to this analysis under federal law that must be noted is a 2001 decision by the District Court for the District of Massachusetts upholding a decision by the Massachusetts Department of Telecommunications and Energy (DTE) that leasing “dark fiber” is a “telecommunications service” under federal law. *Global Naps v. New England Telephone & Telegraph Co.*, 2001 WL 826082. The decision is poorly reasoned and, we believe, incorrect. This ruling is by a federal district court in Massachusetts and is not binding in any other jurisdictions, nevertheless, the precedence of this ruling cannot be entirely ignored without running some risk.

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JEA offered bandwidth solely on a private-carriage basis, it may still have to contribute funds to support the federal universal service program under certain circumstances.²⁴

Cable Television Service

Under federal law, cable operators are not “telecommunications carriers” to the extent that they provide cable television programming. Specifically, 47 U.S.C. § 522(7)(C) generally excludes “a facility of a common carrier which is subject, in whole or in part, to the provisions of title II of this Act ...” from the definition of “cable system.” Similarly, 47 U.S.C. § 541(c) provides that “[a]ny cable system shall not be subject to regulation as a common carrier or utility by reason of providing any cable service.” Indeed, before 1984, cable systems were not regulated under any federal law, but the FCC periodically issued orders and policy statements based on its ancillary jurisdiction to ensure that broadcasters act in the public interest. In 1984 Congress enacted the Cable Communications Policy Act of 1984, which was codified in Title VI of the Communications Act. If JEA elects to become a cable operator, it will have to comply with various federal registration, reporting and other requirements applicable to such entities. These requirements, however, are easy to satisfy. Many public power utilities have done so with little difficulty.

Significantly, under Title VI, a “local or municipal authority” that is a franchising authority, or is affiliated with the franchising authority, is not required to secure a franchise to deliver cable service. 47 U.S.C. § 541(f)(2). Although federal law may not require a municipal utility to obtain a franchise, Florida law does. In addition, there are many practical considerations that make it prudent for a municipality to obtain a franchise on terms and conditions similar to those applicable to the incumbent operator. Generally, public cable systems encounter fewer challenges from incumbent cable operators if the public is subject to similar franchise obligations, such as franchise fees and access channels. Having a franchise also helps avoid or minimize claims of discriminatory treatment, cross subsidization, and arbitrary enforcement.

Internet Access

Except for incumbent telephone companies, providers of “information service” are not subject to federal regulation as such. Furthermore, if, as expected, Congress or the FCC changes the current treatment of Internet access services and facilities provided by incumbents, they too will be removed from federal jurisdiction in the foreseeable future.

Under the Communications Act, the term “information service” means “the offering of a capability for generating, acquiring, storing, transforming, processing, retrieving, utilizing, or making available information via telecommunications, and includes electronic publishing, but does not include any use of any such capability for the management, control, or operation of a telecommunications system or the management of a telecommunications service.” 47 U.S.C. §

²⁴ Such an obligation might arise if (1) at least ten percent of the traffic over JEA's network qualified as “interstate telecommunications” – i.e., telecommunications that originate in one state and terminate in another state, and (2) JEA had annual revenues from telecommunications end users of approximately \$140,000 or more (universal service obligations are paid only on end user revenues -- thus to the extent that JEA only acts as a carrier's carrier it will not have end user revenues on which to pay universal service contributions).

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153(20). According to the FCC, Internet service providers (ISPs) qualify as providers of “information service” and thus are not either providers of “telecommunications service” or “cable service,” even though they may transmit information and furnish the wires or wireless facilities over which Internet messages travel.

Not only do ISPs typically offer users the ability to do all of the things that are covered by the definition of “information service,” but ISPs also employ protocol conversions that break messages into “packets” of information, transmit the packets over a variety of paths, and use protocol conversions again to reassemble the packets at the point of termination. According to the FCC, this results in a “change in the form or content of the information as sent or received” that distinguishes ISPs from providers of “telecommunications.”²⁵ The FCC has cautioned, however, that it may re-examine this interpretation on a case-by-case basis as telephone service using the Internet becomes more common, because some technologies that support voice over Internet protocol (“VoIP”) make Internet-based telephone service virtually indistinguishable from traditional telephone service from the user’s standpoint.²⁶

Until this year, the FCC had declined to take a definitive position as to the regulatory classification of cable modem service. This uncertainty helped to spawn conflicting federal court opinions on the proper classification of the service. For example, the 9th Circuit in *City of Portland, OR v. AT&T Corp.*, 45 F.Supp.2d 1146 (W.D. Or. 1999), *rev’d*, 216 F.3d 871 (9th Cir. 2000), concluded that cable modem service is a type of telecommunications service. The 11th Circuit held in *Gulf Power v. FCC*, 208 F.3d 1263 (11th Cir. 2000), that cable modem service is neither a “cable service” nor a “telecommunications service” but an “information service.”²⁷ Two district courts found that cable modem service is a “cable service.” *MediaOne Group v. County of Henrico, VA*, 97 F.Supp.2d 712 (E.D.Va.2000), *aff’d on other grounds*, 257 F.3d 356 (4th Cir. 2001), and *Comcast Cablevision of Broward County, FL*, 124 F.Supp.2d 685 (S.D.Fla. 2000).

In March 2002, the FCC released a declaratory ruling in which it found that cable modem service is an “interstate information service” and thus not a “cable service.” *In the Matter of Inquiry Concerning High-Speed Access to the Internet Over Cable and Other Facilities Internet Over Cable Declaratory Ruling*, GN Docket No. 00-185, CS Docket No. 02-52, (rel. March 15, 2002). The FCC’s decision is the subject of consolidated appeals before the United States Court of Appeals for the Ninth Circuit, in *Brand X Internet Services, Inc. v. FCC*, Nos. 027518 et al.

If the FCC’s Declaratory Ruling decision is upheld and the FCC preempts other sources of authority to impose fees on gross revenues from cable modem service, these actions will have mixed regulatory, financial and political implications for municipal utilities such as JEA that might seek to provide cable service and cable modem service.

²⁵ Report to Congress at ¶ 33 and the FCC orders cited therein.

²⁶ AT&T has recently filed a request for a declaratory ruling by the FCC to the effect that VoIP is not a local exchange service for the purpose of determining a provider’s duty to pay access fees to local exchange carriers.

²⁷ The *Gulf Power* decision was overturned by the Supreme Court on other grounds in *National Cable & Telecommunications Ass’n, Inc. v. Gulf Power Co.*, 534 U.S. 327 (2002).

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The Florida Communications Tax Simplification Act has eliminated the payment of cable franchise fees and instead collects a tax on communications revenues that are in part distributed to local governments. A point of contention by some Florida local governments is that Internet access services such as cable modem service are exempt under the tax. On the one hand, this reduces potential franchise revenues to the City that would have been paid by JEA. On the other hand, this should increase available income to JEA, and lower prices to consumers.

While proceeding with its cable modem proceeding, the FCC has also issued a *Notice of Proposed Rulemaking* to address the proper classification of Internet access service when provided over domestic wireline facilities. *In the Matter of Appropriate Framework for Broadband Access to the Internet over Wireline Facilities*, CC Docket Nos. 02-33, 95-20, 98-10, *Notice of Proposed Rulemaking* (rel. February 15, 2002). In this proceeding, the FCC tentatively concluded that Internet access service provided over wireline facilities should also be classified as "information service" under the Act, rather than as "telecommunications service." As a result, incumbent local telephone companies would not be compelled to provide Digital Subscriber Line (DSL) facilities to competitors at wholesale prices. On the one hand, if the FCC's tentative conclusion ultimately acquires the force of law, this could impede JEA's ability to obtain access to the incumbent's DSL facilities on a wholesale basis, should JEA need such access. On the other hand, in combination with the FCC's cable modem interpretation, it would ensure against federal, and even possibly state, regulation of potential JEA's high speed Internet access offerings.

Telecommunications Services

If JEA provides services that meet the definition of "telecommunications services," it will be subject to the full panoply of federal regulations that apply to such services. As the FCC's instructions to Form 499A indicates, the term "telecommunications service" covers a wide range of services. The unifying aspect of which is that they all involve the provision of telecommunications for a fee and such services are offered on a common carrier basis. While the FCC has relaxed regulation of non-dominant providers of telecommunications services in recent years, there are still numerous requirements that all telecommunications service providers must meet.

In summary, the only services that are clearly "telecommunications service[s]" for the purposes of federal regulation are local exchange and long-distance telephone services offered on a common carrier basis. To the extent that JEA does not provide these services it would not face federal entry, certification or tariffing requirements. JEA may, however, have to make universal service contributions on other services. Also, if JEA were to elect to become a cable operator it would have to satisfy the minimal federal regulatory requirements applicable to providers of cable services. JEA would have no federal obligations with respect to Internet access service under any current federal laws or regulations.

B. State Regulatory Requirements

1. FPSC jurisdiction over telecommunications companies

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As in the previous section, we review the state regulatory treatment of the various potential service offerings on a service-by-service basis. Before turning to that discussion, however, it may be useful to review the FPSC's jurisdiction over municipalities in the communications area. The FPSC has general regulatory authority over all "telephone companies" in the state, including municipal utilities. Section 364.01(2) of the FLS provides:

It is the legislative intent to give exclusive jurisdiction in all matters set forth in this chapter to the Florida Public Service Commission in regulating telecommunications companies, and such preemption shall supersede any local or special act or municipal charter where any conflict of authority may exist.

A "telecommunications company" is in turn defined in FLS. § 364.02(12) as follows:

"Telecommunications company" includes every corporation, partnership, and person and their lessees, trustees, or receivers appointed by any court whatsoever, and every political subdivision in the state, offering two-way telecommunications service to the public for hire within this state by the use of a telecommunications facility. The term "telecommunications company" does not include:

- (a) An entity which provides a telecommunications facility exclusively to a certificated telecommunications company;
- (b) An entity which provides a telecommunications facility exclusively to a company which is excluded from the definition of a telecommunications company under this subsection;
- (c) A commercial mobile radio service provider;
- (d) A facsimile transmission service;
- (e) A private computer data network company not offering service to the public for hire; or
- (f) A cable television company providing cable service as defined in 47 U.S.C. s. 522.

Florida law does not define "telecommunications services," but the Code indicates that the term "service" "is to be construed in its broadest and most inclusive sense." FLS. 364.02(11). Nevertheless, as the list of statutory exclusions demonstrates, a key element of the definition of a telephone company is that it generally entails more than the provision of telecommunications facilities or infrastructure. FSL §364.02(13) defines a "telecommunications facility" as "includ[ing] real estate, easements, apparatus, property, and routes used and operated to provide two-way telecommunications service to the public for hire within this state." While this definition suggests that "telecommunications facilities" is limited to physical things, an informal discussion with FPSC staff has indicated that the term could extend to lit bandwidth as well, if it were provided to a certificated carrier on a carrier's carrier basis.²⁸

In addition, in order to be a telecommunications company, an entity must offer telecommunications services "to the public for hire." An important question, therefore, is what the term "to the public" means under Florida law. As discussed above, the FCC and the courts

²⁸ We obtained this information in a brief, anonymous conversation with Rick Moses of the FPSC staff.

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have interpreted term “to the public” in the federal definition of “telecommunications service” as limiting that such services to those provided on a common carrier basis and not services offered pursuant to private contracts or to “significantly restricted classes of users.” Although the phrase “to the public” in FLS. 364.02(12) does not have the same legislative history as that term does in the federal definition of “telecommunication service,” this phrase is commonly understood to convey a utility type service that is offered on an indiscriminate basis.

If Florida were to take such an approach, private carrier agreements between JEA and large end users would not be subject to FPSC regulation. Private carriage is characterized by individualized, long-term negotiated written contracts. It is not clear, however, whether Florida takes such an approach. As discussed below, Florida has specifically created a regulatory classification for "alternative access vendors" that provide point-to-point dedicated, private line telecommunications and competitive access services. These are two of the primary services in which private carriers typically engage. The existence of the AAV classification undercuts the argument that Florida telecommunications law makes a distinction between common carriage and private carriage.

2. Certification Requirements

Under FLS. § 364.33, every “Person” is required to obtain a certificate of necessity from the FPSC, as a prerequisite to the construction or operation of telecommunications facilities used for the provision of telecommunications services to the public.²⁹ Section 364.32(1)(a) defines “Person” to mean: “[a]ny natural person, firm, association, county, *municipality*, corporation, business, trust, or partnership owning, leasing, or operating any facility used in the furnishing of public telecommunications service within this state.” As indicated above, FLS. §§ 166.047 and 364.02(12) confirm that this certification requirement is fully applicable to municipally-owned telecommunications providers.

In applying for a certificate, a telecommunications company is required to provide the FPSC with the requisite information established by rule for the specific service for which it is seeking authority. This information includes information on the proposed services and facilities, as well as a proposed schedule of rates for such service. FLS. § 364.335(1).

If the FPSC grants the requested certificate, any person who would be substantially affected by the requested certification may file a written objection within 21 days of the grant of the certificate seeking a proceeding to determine whether the grant of such certificate is in the public interest. The commission shall order such proceeding conducted in or near the territory applied for, if feasible. If any person requests a public hearing on the application, such hearing shall, if feasible, be held in or near the territory applied for, and the transcript of the public hearing and any material submitted at or prior to the hearing shall be considered part of the record of the application and any proceeding related to the application. FLS. § 364.337.

A cursory review of prior municipal telecommunications certification proceedings in Florida suggests that many of these applications and grants of certificates are not contested. For example, no oppositions were filed to the Gainesville Regional Utilities certification.

²⁹ Such certification is not necessary for authority to construct internal communications systems or communications lines that are not utilized for the provision of telecommunications services to the public.

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Nevertheless given the relative size and profile of JEA, coupled with the weaker overall telecommunications economy, it is prudent for JEA to anticipate a challenge from incumbent telecommunications providers. In other communities around the country, such as Bristol, Virginia, new municipal telecommunications providers have run into similar challenges. The aggressiveness of any such challenge will likely depend on scope of services, if any, that JEA would be seeking to provide.

3. Specific requirements for municipal telecommunications providers

Apart from the general certification requirement for all telecommunications companies, Florida municipalities are required to comply with certain accounting and non-discrimination requirements. FLS. § 166.047 provides:

A telecommunications company that is a municipality or other entity of local government may obtain or hold a certificate required by chapter 364, and the obtaining or holding of said certificate serves a municipal or public purpose under the provision of s. 2(b), Art. VIII of the State Constitution, only if the municipality or other entity of local government:

1. Separately accounts for the revenues, expenses, property, and source of investment dollars associated with the provision of such services;
2. Is subject, without exemption, to all local requirements applicable to telecommunications companies; and
3. Notwithstanding any other provision of law, pays, on its telecommunications facilities used to provide two-way telecommunications services to the public for hire and for which a certificate is required pursuant to chapter 364, ad valorem taxes, or fees in amounts equal thereto, to any taxing jurisdiction in which the municipality or other entity of local government operates. Any entity of local government may pay and impose such ad valorem taxes or fees.

This section does not apply to the provision of telecommunications services for internal operational needs of a municipality or other entity of local government. This section does not apply to the provision of internal information services, including, but not limited to, tax records, engineering records, and property records, by a municipality or other entity of local government to the public for a fee.

These provisions are generally referred to as "level playing field" requirements, and were adopted at the behest of private sector telecommunications companies seeking to ensure that local governments have no competitive advantage over private sector telecommunications companies. While seemingly innocuous these requirements are often utilized by private telephone companies to hamper competitive entry by municipalities.

Section 1 is essentially a requirement to maintain separate books and accounts for telecommunications services. Section 2 seeks to ensure that municipal telephone systems are

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subject to all of the permitting, zoning and franchising requirements applicable to other telecommunications providers. Section 3 attempts to impose ad valorem taxes on municipal telecommunications providers. The City of Gainesville successfully challenged the ad valorem tax requirement in the Second District of Florida as being unconstitutional under Article VII, § 3(a) of the Florida Constitution.³⁰ The Florida Department of Revenue and the Florida Telecommunications Industry Association have appealed this decision.

4. Regulatory requirements for specific services

As with our discussion of the federal rules we now turn to a review of the regulatory treatment of specific services under Florida law.

Other units of government and schools

The provision of communications services to other units of the City government and to schools are not subject to regulation pursuant to FLS. § 166.047, which states: "This section does not apply to the provision of telecommunications services for internal operational needs of a municipality or other entity of local government." Moreover, such restrictive services offers would not generally be considered *to the public* and as such are not subject to FPSC oversight.

Dark Fiber

Dark fiber is typically not considered a "service" but rather a "facility."³¹ Florida seeks to encourage competition in telecommunications and to facilitate the build out of robust communications capabilities. To this end Florida law specifically recognizes the ability of entities to provide telecommunications infrastructure and facilities, such as dark fiber, on a non-regulated basis to third-parties who are themselves regulated and certificated by the FPSC. FLS. § 364.02(12)(a). In addition, FLS. § 364.02(12)(b) allows an entity to provide facilities on an exclusive, non-regulated basis to the following types of non-telecommunications companies: commercial mobile radio service providers; facsimile transmission services; private computer data network companies not offering service to the public for hire; and cable television companies providing cable service as defined in 47 U.S.C. § 522.

All of the dark fiber leasing agreements that JEA has entered into, of which we are aware, fall under one of the two exceptions contained in FLS. § 364(12)(a) and (b), and as such, are not required to be certificated. For example, JEA has a dark fiber lease with Intermedia Communications, Inc. (ICI). ICI is a certificated competitive local exchange carrier in Florida, and therefore JEA's dark fiber lease with ICI does not make JEA a "telecommunications company."

³⁰ *City of Gainesville vs. James Zingale*, as Director Department of Revenue, State of Florida, Case No. 2000-CA-00 1282 (2d Cir, Leon County, Florida, Mar. 20, 2002).

³¹ As discussed above, FSL § 364.02(13) defines a "telecommunications facility" as including "apparatus."

Bandwidth Service

As part of its effort to encourage competition and widespread telecommunications deployment Florida is one of the few states that has adopted a separate classification and regulatory structure for dedicated, private line point-to-point and point-to-multipoint transmission services, and dedicated interexchange (long distance) access services. These services are collectively referred to as “alternative access vendors” (AAV) services. Section 364.337(6)(a) of the FLS. provides:

The Legislature finds the provision of alternative access vendor services to be in the public interest, and the commission may authorize the provision of such service. For the purposes of this section, effective January 1, 1996, "alternative access vendor services" means the provision of private line service between an entity and facilities at another location, whether owned by the entity or an unaffiliated entity or access service between an end user and an interexchange carrier by other than a local exchange telecommunications company. For purposes of this chapter, "private line service" means any dedicated point-to-point or point-to-multipoint service for the transmission of any public telecommunications service.

Under this definition, the provision of dedicated transport between an organization’s facilities, such as the provision of a private line between facilities owned by CSX, would constitute a form of alternative access vendor service. The provision of a dedicated line to a company that allows it to bypass BellSouth and link the company directly to its long distance telephone carrier is also considered alternative access vendor service. It may, however, be possible to provide lit bandwidth capacity on non-regulated private carrier wholesale basis to another carrier that is itself certificated. As discussed above, informal discussions with FPSC staff have suggested that an entity could lease or otherwise provide lit fiber as a type of "telecommunications facility" on a wholesale basis to a certificated carrier and not be classified as a "telecommunications company" under Florida law. In such a situation no certification would be required.

Providers of AAV services are required to obtain a certificate of convenience and necessity.

(b) No person shall provide alternative access vendor services without first obtaining a certificate from the commission. Any certificated alternative access vendor as of the date this act becomes a law wishing to provide alternative local exchange telecommunications service in addition to the services authorized in its certificate may do so, effective January 1, 1996, upon furnishing written notice to the commission.

FLS. § 364.337(6)(b).

While AAV service is a certificated service it has a relatively streamlined regulatory structure. For example, pursuant to FPSC Rule 25-24.720, AAV service providers are not required to file tariffs. Similarly, many of the operational filing requirements applicable to local exchange carriers are not necessary for AAV service providers. A complete list of the applicable rules for

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AAV service providers as well as application materials can be found at <http://www.psc.state.fl.us/industry/telecomm/aav/aavindex.cfm>

Cable Television

Cable television service is not regulated at the state level in Florida but is instead subject to local franchising authorities. Prior to granting a cable franchise FLS. § 166.046(2) requires that a municipality or county conduct a public hearing in which it must consider:

- (a) the economic impact upon private property within the franchise area;
- (b) the public need for such franchise;
- (c) the capacity of the public rights-of-way to accommodate the cable system;
- (d) the present and future use of the public rights-of-way to be used by the cable system;
- (e) the potential disruption to existing users of the public rights-of-way to be used by the cable system and the resultant inconvenience which may occur to the public;
- (f) the financial ability of the franchise applicant to perform;
- (g) other societal interests as are generally considered in cable television franchising; and
- (h) such other additional matters, both procedural and substantive, as the municipality or county may, in its sole discretion, determine to be relevant.

Under the federal Cable Act, a “local or municipal authority” that is a franchising authority, or is affiliated with the franchising authority, is not required to obtain a franchise to deliver cable service. 47 U.S.C. § 541(f)(2). Similarly, FLS. § 164.046 does not require a municipal cable provider to obtain a franchise. Florida does, however, have what is commonly referred to as a “level playing field” provision in FLS. § 166.046(3), which requires that “no municipality or county shall grant any overlapping franchises for cable service within its jurisdiction on terms or conditions more favorable or less burdensome than those in any existing franchise within such municipality or county.” Although this provision does not explicitly apply to a municipal cable provider, it is likely that the incumbent cable operator will vigorously protest any effort by the City to operate in a manner that would give it a competitive advantage over the incumbent.³² Therefore, if JEA elects to enter into the cable business, it should consider obtaining a franchise from the City on terms and conditions that are as similar to the incumbent’s as is reasonably possible. In doing so, JEA should bear in mind that the franchise need not be identical, that an item-by-item comparison is inappropriate, and that only substantial similarity is required. *Cable TV Fund 14-A, Ltd. v. City of Naperville*, 1997 WL 209692 (ND. Ill. 1997); *United Cable Television Services Corp. v. Dep’t of Public Utility Control*, 235 Conn. 334, 663 A.2d 1011 (1995); *Cable Systems of Southern Connecticut, Ltd. v. Connecticut DPUC*, 1996 WL 661818 (Conn. Super. Ct. 1996); *Comcast Cablevision of New Haven, Inc. v. Connecticut DPUC*, 1996

³² The Florida “level playing field statutes” and a handful of similar laws in other states are arguably highly anticompetitive as they strongly favor incumbent cable operators. T. Hazlett and G. Ford, *The Fallacy of Regulatory Symmetry: An Economic Analysis of ‘the Level Playing Field’ in Cable TV Franchising Statutes*, 3 Business and Politics 21, 43 (2001), http://www.manhattan-institute.org/hazlett/the_fallacy_of_regulatory_symm.pdf

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WL 6611805 (Conn. Super. Ct. 1996); *Insight Communications, LP v. City of Louisville, KY*, No. 00-CI-007100 (Jefferson Cir. Ct. March 21, 2001).³³

In addition, Florida law contains specific safeguards against anticompetitive conduct or discriminatory practices between utilities and affiliated cable systems. FLS. § 366.031 provides,

- (2) No "electric utility"³⁴ shall make or give any preference or advantage to any person as an accommodation or inducement to that person to contract with or take the services of any entity which is an affiliate of such electric utility and which entity provides video programming to persons within all or any part of the service area of such electric utility.
- (3) No electric utility shall make or give any preference or advantage over any entity which is not an affiliate of such electric utility, and which entity provides video programming to persons within all or any part of the service area of such electric utility, to any entity which is an affiliate of such electric utility and which entity provides video programming to persons within all or any part of the service area of such electric utility.
- (4) Upon a finding by a court of competent jurisdiction that either any electric utility or its affiliate providing video programming services within all or any part of the service area of the electric utility has violated the provisions of this section, the court:
 - (a) May award actual damages to any other entity not an affiliate of the electric utility providing video programming services to persons within all or any part of the service area of the electric utility, and may grant injunctive relief.
 - (b) Shall award costs of any action, together with reasonable attorney's fees, to the prevailing party.

Internet Access Service

There are no procedural provisions that deal explicitly with Internet access service. If a Florida City wishes to provide Internet access as part of its cable or telecommunications offerings, it could presumably follow the applicable procedures that apply to these services. Alternatively, pursuant to its home rule charter, a local government could develop procedures and a structure related to the acquisition, construction, ownership, and operation of an Internet access service in the same way as it develops procedures for other non-regulated proprietary enterprises.

³³ Recently, Charter Communications challenged the City of Bristol's alleged failure to comply with Virginia's cable franchising procedures and level playing field statute. The Virginia law franchising and level playing field requirements did not explicitly apply to municipal cable operators. The court did not reach this issue, finding that Bristol lacked authority to provide cable service.

³⁴ "Electric utility" is defined as "any municipal electric utility, investor-owned electric utility, or rural electric cooperative which owns, maintains, or operates an electric generation, transmission, or distribution system within the state. FLS. § 366.02(2).

Competitive Local Exchange Telecommunications Services

If the City, acting through JEA, sought to provide local exchange telephone service or switched access telecommunications services, it would be considered an “alternative local exchange company” (ALEC), which is defined under Florida law as any company, other than incumbent local exchange companies, certificated by the Commission to provide local exchange telecommunications services in the state on or after July 1, 1995. Alternative local exchange companies planning to provide services in the State of Florida after July 1, 1995, must be certificated by the Florida Public Service Commission, and alternative local exchange companies are required to file a price list specifying their rates and charges for basic local telecommunications service. Certificate authority is generally on a statewide basis. The applicable rules for alternative local exchange carriers are set out in Chapter 25-24, Part XV of the Florida Administrative Code.

IV. STRUCTURAL ISSUES AND FINANCE CONSIDERATIONS

We now turn to the possible business structures through which JEA can provide the communications services of its choice and the finance issues related to these choices.³⁵ We believe that JEA has two main options: (1) provide “telecommunications facilities” such as dark fiber and conduit on an ancillary basis to on-going utility operations; or (2) establish a new utility telecommunications system. If a strategic partnership of some kind becomes a possibility, this could create an additional option. These options have different strengths and weaknesses.

A. Provide Telecommunications Facilities Under Existing JEA Structure

The simplest and most straightforward option is for JEA to continue to lease excess or reserve telecommunications facilities, such as dark fiber and conduit, on a non-regulated basis to certificated telecommunications companies and cable companies through JEA’s existing utility systems. JEA has an on-going need to own and operate fiber and communications infrastructure in order to provide safe, reliable and secure electric and water utility services. JEA can lease its excess fiber and infrastructure capacity to third-party providers under its existing authority to the extent that the facilities were installed primarily to meet JEA’s anticipated needs. To the extent that JEA constructs routes or fiber purely for the use of other entities, JEA’s bond counsel suggests that it will be difficult to include these activities under the umbrella of its existing utility system bond authorizations.

B. Creation of a New Utility Communications System

As discussed above, under Article 21.04(v) of the City’s Charter, JEA can add the operation of communications system to its current utility functions through the adoption of resolutions by both JEA and the City Council. Depending on the breadth of the resolutions adopted, JEA could

³⁵ Portions of this section are informed in large measure by the analysis of Neil T. Wolk of Orrick, Herrington & Sutcliff.

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provide the full range of communications services reviewed in this memo ranging from dark fiber to operating a cable system to providing retail local telecommunications services.

In the event that JEA decides to adopt a resolution authorizing the formation of a communications system, JEA would have two options for the financing of the communications facilities. It could designate the telecom system as an additional utility function under its existing Water and Sewer System Revenue Bond Resolution, or it could adopt a new bond resolution that could be applicable to communications services and such other utility functions as JEA may to add.³⁶

JEA is permitted under the Water and Sewer System Bond Resolution to issue bonds to finance and refinance “Costs” of the System, and “System” is defined in Section 101 to mean:

each and every part of the water system and sewer system . . . owned and operated by JEA for water supply, transmission, treatment and distribution and for sewage collection, transmission, treatment and disposal or distribution now existing and hereafter acquired . . . provided, however, that upon compliance with the provisions of Section 716, the term System shall be deemed to include other utility functions added to the System such as the acquisition, distribution, and sale of natural gas, the production, distribution and sale of process steam, or other utility functions that are, in accordance with Prudent Utility Practice, reasonably related to the services provided by the System.

Section 716 of the Water and Sewer System Bond Resolution in turn provides that

JEA may expand the utility functions of the System as they exist as of the date on which JEA assumes the ownership thereof as permitted by the proviso contained in the definition of “System” in Section 101, only if JEA files with the books and records of JEA a certified copy of resolutions of the Governing Body to the effect that the addition of such utility functions (a) will not impair the ability of JEA to comply during the current or any future Fiscal Year with the provisions of the Resolution, including specifically Section 711 and (b) will not materially adversely affect the rights of the Holders of the Bonds.

Accordingly, if JEA can satisfy the requirements set forth in §§ 101 and 716 of the Water and Sewer System Bond Resolution related to the expansion of utility functions, JEA could designate communications as an additional utility system under the Water and Sewer System Bond Resolution. In such event, bond counsel advises that additions and improvements to the

³⁶ Bond counsel has advised that it would not be practical to finance communications facilities under JEA’s existing Electric System Bond Resolution. Under that Resolution, JEA may issue bonds only to finance and refinance facilities of the Electric System and purposes incidental thereto. “Electric System” is defined in that Resolution to mean “the existing electric generating, transmission and distribution system consisting of the existing generating plants and transmission and distribution lines and facilities together with any and all improvements, extensions and additions thereto . . .” Thus, JEA could arguably finance telecom facilities if they were “incidental” to the Electric System (*e.g.*, if they were for Electric System communications and control purposes). To the extent, however, that any such facilities were to be used exclusively for the provision of telecom services to third parties, bond counsel does not believe that they could be financed under the Electric System Bond Resolution.

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communications system could be financed with the proceeds of bonds issued under the Water and Sewer System Bond Resolution and all revenues derived from the sale of communications services would be commingled with revenues derived from the sale of water and sewer services (and would be pledged to secure all bonds issued under the Water and Sewer System Bond Resolution). A question has arisen as to whether this bond obligation to commingle funds from communications services could come into conflict with the statutory requirement of FLS § 166.047(1) for a municipality that provides telecommunications services to "[s]eparately accounts for the revenues, expenses, property, and source of investment dollars associated with the provision of such services..." We believe that it is possible to reconcile the two requirements by treating the statutory provision as an accounting requirement rather than a substantive limitation on how the revenues are ultimately allocated. In other words, JEA would be required to track the revenues from telecommunications service in separate books and then pay them into the water sewer fund revenues. JEA's bond counsel has confirmed this interpretation as being consistent with the requirements of the bond.

JEA may, however, determine that the addition of communications services to the utility functions provided under the Water and Sewer System Bond Resolution is not advisable. For example, it is possible that the addition of communications services would have an adverse effect on the creditworthiness of the Water and Sewer System Bonds.³⁷ If JEA decides not to rely upon its existing bond authority, it could adopt a new bond resolution in order to finance the telecom system. In such event, JEA would have greater flexibility to include in that resolution whatever provisions were determined to be necessary or appropriate without regard to the existing obligations or limitations of any other bonds.

C. Partnering Options

At some point, opportunities to form one or more strategic partnerships may arise. In order to pursue these options, JEA would have to rely on the City's Home Rule powers, as there is no express grant of authority to engage in such ventures, nor is there any statutorily-mandated procedure that must be followed.

In considering such opportunities, JEA would have to be attentive to various potential limitations on its flexibility. For example, Article VII, § 10, entitled "Pledging credit," provides that, with certain exceptions, "Neither the state nor any . . . municipality . . . or agency of any of them, shall become a . . . stockholder of, or give, lend or use its taxing power or credit to aid any corporation . . ." Tax issues, such as federal "private use" requirements, could also have a significant impact on the economics of a relationship with a private partner.³⁸

We would observe, however, that the Florida legislature has specifically recognized the value of joint ventures to promote the widespread deployment of advanced telecommunications capabilities. FLS. § 364.507(1) states that,

³⁷ We offer no opinion on such considerations.

³⁸ See November 15, 2002 memo of Richard H. Nicholls on "Federal Tax Aspects of Financing Telecommunications Equipment" for a more thorough discussion of this issue.

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[I]t is the interest of the state to assure its citizens access to advanced telecommunications services since such access will compliment the provision of educational and health care services, thus enhancing the health, safety, and welfare of Floridians. The Legislature further finds that the network should be available to residents or rural, suburban, and urban areas so that all citizens may benefit.

Similarly, FLS. § 364.507(4) states,

It is the intent of the Legislature to encourage joint ventures between telecommunications companies, cable companies, and other providers where such joint ventures accelerate, improve, or otherwise assist eligible facilities in receiving advanced telecommunications services.

There are a range of collaborative options that other public entities have developed. JEA may find that some of these options are worthy of further in-depth study and possible adaption. For example,

- The City of LaGrange, Georgia, has ensured Internet access to all of its business and residents through a cooperative arrangement with the local cable company.
- The City of Lynchburg, Virginia, sold a portion of its network to a private provider in return for a broad range of benefits.
- The City of Stillwater, Oklahoma, aggregated demand among local business and contributed facilities to a venture with a private provider that, in return, offered steeply discounted telecommunications rates for early participants.
- The Municipal Electric Authority of Georgia formed a non-profit corporation to utilize MEAG's fibers.
- A consortium including the Lower Colorado River Authority and the municipal electric utility of Austin, Texas, has greatly contributed to the deployment of broadband service in Texas through the joint contributions of its members.

There are also many other creative arrangements that could be structured to ensure the lawful provision of the desired services. Any such arrangement would, however, have to be very carefully examined, structured, negotiated and managed. For example, agreements would need to account for any differences in culture and long term views of the partnership, as a private entity may experience a management change or look to sell assets that would be inconsistent with the long term needs of JEA and the City.

D. Application of Tax Simplification Act

In 2001, the Florida Legislature adopted the Communications Services Tax Simplification Law, codified at FLS. § 202. The new law establishing the Communications Services Tax is designed to simplify a complex structure of taxes on telecommunications, cable, direct-to-home satellite and related services. The law replaces and consolidates several different state and local taxes with a single tax comprised of two parts: the Florida communications services tax and the local

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communications services tax. The law also shifts the administration of taxes on communications services to the Florida Department of Revenue.

The local revenue sources that have been repealed and replaced by this law include cable franchise fees, municipal public service taxes on telecommunications, one-percent telecommunications franchise fees, and permit fees on right-of-way. At the state level the taxes include the state sales tax on telecommunications, discretionary sales surtax, and the gross receipts tax.

The new law does not generally apply against governmental units. It is not yet clear how the new law and the requirement of FLS. § 166.047(3) relating to the payment of ad valorem and other taxes by municipal telephone companies interact, although this may be resolved in part by the *Gainesville* litigation. In any event, the new law has a number of specific exemptions, including the provision of service to governmental entities, the provision of dark fiber, the provision of information services and the provision of Internet access services. See the "Communications Service Tax: An Overview of Florida's Tax Restructuring," prepared by the Florida Department of Revenue http://sun6.dms.state.fl.us/dor/taxes/pdf/Cst_ovr.pdf

V. DEVELOPMENT OF POLICIES

If JEA chooses to pursue any of the above options, it will have to develop policies that will address certain areas of concern related to competitive entry. Such policies may also be appropriately reflected in any resolutions and/or ordinances that JEA and the City adopt in order to effectuate its chosen course of action. Specifically, with regard to the options of creating a new utility "system," JEA should develop specific policies that will address concerns over the possibility of co-mingling assets, cross-subsidization, pole attachment rates, and any unfair competitive advantage that the utility system will have over competitors providing similar services.

JEA should also prepare itself to deal with a potentially aggressive legal and political campaign by incumbents to keep it out of the business or to at least tie its hands. The development of the policies discussed above will partially help to defend against such attacks. JEA will also need to be aware of possible "level playing field" measures that incumbents often attempt to get inserted into utility service requirements at either the state, or local level. One measure that has emerged before several state legislatures in the last few years is a requirement that municipal utilities impute to themselves the costs of providing services that private telecommunications providers would incur. Apart from the practical difficulty of knowing these costs, such a requirement improperly assumes that a municipal cost structure should be the same as that of a private entity that has financial, corporate, timing and return-on-investment obligations that are inherently different than a municipal utility.

JEA should also educate itself as to what has worked and has not worked in other communities around the country and learn from the competitive battles that they have waged with incumbents. Along these lines we recommend that JEA familiarize itself with the American Public Power

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Association's publication "Old Snake Oil in New Bottles: Ideological Attacks on Local Public Enterprises in the Telecommunications Industry."³⁹

VI. CONCLUSIONS AND RECOMMENDATIONS

Based upon all of the above, we believe that the combination of Home Rule and explicit statutory authority to operate as a telephone company gives the City, acting through JEA, the ability to enter into the full gamut of communications activities, ranging from leasing dark fiber to becoming a full-service provider of telecommunications services. The main challenge for JEA is to ensure that it does not get bogged down in level playing field procedures or challenges that could delay its progress for years.

With regard to federal and state regulation, we do not believe that JEA will encounter anything that it cannot manage with relative ease. Many other public power utilities have dealt with these requirements successfully, and so should JEA.

Structurally, we believe that utilizing the existing utility with the creation of a new "communications system" is the most efficient and cost-effective way for the City to proceed. In doing so, however, JEA should be scrupulous to avoid cross-subsidization.

³⁹ <http://www.appanet.org/LegislativeRegulatory/Broadband/reports/Revisedtelecom.pdf>

Appendix F
Glossary

GLOSSARY

-A-

ADSL (Asymmetric Digital Subscriber Line)

A technology for transmitting digital information at high bandwidths on existing twisted-pair copper phone lines to homes and business, Unlike regular dialup phone service, ADSL provides continuously available, “always on” connection. ADSL is asymmetric in that it uses most of the channel to transmit downstream to the user and only a small part to receive information from the user. ADSL was specifically designed to exploit the one-way nature of most multimedia communication in which large amount of information flow toward the user and only a small amount of interactive control information is returned.

ADSS (All-Dielectric Self Supported)

A type of aerial fiber optic cable which contains no electrical conductor and requires no supporting messenger.

Amplifier

A device to increase the strength of an analog signal.

Amplitude

The maximum variation from the zero position of any alternating current, the size or magnitude of an alternating wave form. Sometimes described as volume, intensity of loudness.

Amplitude Modulation

A form of modulation in which the amplitude of a carrier wave is varied according to some characteristic of the modulating signal.

Analog Signal

A continuous signal that varies in voltage to reflect variations in some quantity, such as tone and loudness of the human voice.

Asynchronous Transmission

Transmission that is not related to a specific frequency, or to the timing, of the transmission facility. Transmission characterized by individual characters, or bytes, encapsulated with start and stop bits, from which a receiver derives timing for sampling bits, Sometimes termed start-stop transmission.

ATM

Asynchronous Transfer Mode is a standardized form of packet switching accomplished using packets, or “cells” that are fixed at 53 characters in length.

Bandwidth

The range between the lowest and the highest frequencies of a channel. The greater the bandwidth, the more information per unit of time that can be transmitted. Also often referred to as the data transmission capacity.

Baseband

The frequency band occupied by a single or composite signal in its original or unmodulated form before being transmitted.

Basic Trading Areas (BTAs)

Geographic areas in the United States established by Rand McNally based on population and economic statistics. There are 493 BTAs in the U.S. The FCC sometimes uses BTAs as boundaries for the allocation of radio frequency spectrum sold through an auction.

Baud

Signals per second, used in analog systems-not to be confused as bit rate-with multi-state modulation, bps can be 2 times to 32 times greater than baud rate.

Bit

A contraction of words binary digit. The smallest unit of information in a code using the binary system.

Bit Error Rate (BER)

The ratio of bits transmitted in error to total bits transmitted, a measure of performance and circuit quality in digital transmission systems.

Broadband

Used to describe telecommunications that deliver multiple channels of data (service) through on portal. According to the FCC, to classify a data transport service as broadband, the upstream or downstream paths each must support rates of at least 200 kilobit per second (thousands of bits per second) (kbps).

Byte

Generally an eight-bit quantity of information, used mainly in reference to data storage and transmission. Also referred to as an octet or character,

Cable Modem

A device that enables a subscriber to connect a personal computer to a local cable TV line for wide area networking and internet access. Cable modems provide a dedicated “always on” connection requiring no dial-up. Bandwidth varies depending on the system design, but can be up to 27 mbps downstream (from the service provider to the subscriber) and up to 3 mbps upstream. Only CATV systems that have bi-directional transmission capabilities can offer cable modem services.

CAP (Competitive Access Provider)

Companies building telecommunications networks in metropolitan areas to connect business customers directly to long-distance carriers, bypassing the LEC.

Carrier

A signal suitable for modulation by another signal containing information to be transmitted.

CATV

This acronym refers to Community Antenna Television, more commonly known as cable television.

CBR (Constant Bit Rate)

Constant Bit Rate applications, such as video conferencing, that results in a digital bit stream that requires a constant amount of bandwidth. CBR applications are in contrast to “bursty” applications where bandwidth demand varies with time, such as transfer of computer files.

CCITT

The technical organs of the United Nations specialized agency for telecommunications, not the International Telecommunications Union (ITU). They function through international committees of telephone administrations and private operating agencies.

CDPD (Cellular Digital Packet Data)

A specialized form a data transmission that makes use of idle airtime in cellular telephone systems control channels.

CDMA (Code Division Multiple Access)

A multiplexing system used by some PCS operators. After digitizing the voice, the data is spread out over the entire radio channel bandwidth. Multiple calls are overlaid over each other on the channel, with each assigned a unique sequence code.

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Cell

A subdivision of a mobile telephone service area, containing a low-powered radio communicating system connected to the local telephone network.

Cellular Radio

Technology employing low-powered radio transmission as an alternative to local, wired telephone service. Users may be stationary or mobile. The calls of mobile users are passed, under the control of a central site, from one cell's transmitter to an adjoining one.

Channel

A communications path for the electrical transmission of information, such as voice or data.

Circuit

The complete path between two end-terminals over which one-way or two-way communication can be provided. A circuit may consist of one or more channels connected together to provide end-to-end communications.

Circuit Switching

A means of providing temporary communication paths on an as-needed basis. The most common application is conventional dial-up telephone calling.

Class of Service

Assigning priority to constant bit rate (CBR) and other latency-sensitive applications within a digital network, usually ATM.

CLEC (Competitive Local Exchange Carrier)

See CAP.

Code

Any system of communication in which arbitrary groups of symbols represent units of plain text or information transmitted.

Common Carrier

An organization in the business of providing communications services for hire to the general public and subject to regulation by state and federal agencies.

Conditioned Line

A private-line telephone circuit that has special electronic equipment to reduce distortion and improve transmission quality.

Data

Digitally represented information, including voice, text, facsimile and video.

Data Communications

The movement of coded information by means of electronic transmission systems.

Data Communications Equipment (DCE)

Equipment that can establish, maintain and terminate a connection and provide the signal conversion required for communication between data terminal equipment and the telephone line or data circuit.

Data Terminal Equipment (DTE)

A computer or business machine that provides data in the form of digital signals for its output.

Digital Signal

A discontinuous electrical signal that changes from one state to another in discrete steps. Typically, information is represented by zeroes and ones.

Digitize

Sampling and quantizing an analog signal and representing it with discrete amplitude steps, such as zeroes and ones.

Distributed Processing

The processing of data at remotely located sites using communication links to interconnect the remotely located microcomputers or intelligent terminals.

Downlink

The communications link used to transmit information from an orbiting satellite back to the Earth.

DS-0 (Digital Signal, Level 0)

A digital signal transmitting 64,000 bits of information per second. In North America, the DS-0 is the basic building block data rate of digital communication systems. Higher data rate systems are normally some multiple of DS-0 channels. A DS-0 is approximately equivalent to one voice channel.

DS-1 (Digital Signal, Level 1)

A digital signal transmitting 1.544 million bits of information per second. When transported over a telephone circuit, it is commonly referred to as a T- 1. A DS-1 is composed of 24 DS-0 signals and can transport 24 voice channel equivalent circuits. (Note: The DS-1, DS-2, DS-3, etc. are not

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exact mathematical multiples of the basic DS-0 data rate because of added signaling and control bits.)

DS-2 (Digital Signal, Level 2)

A digital signal transmitting four DS-1 signals or 96 voice channel equivalents.

DS-3 (Digital Signal, Level 3)

A digital signal transmitting 28 DS-1 signals or 7 DS-2 signals. A DS-3 rate channel operates at approximately 45 million bits per second and has the capacity to transport 672 voice channel equivalent circuits.

DSL (Digital Subscriber Line)

A technology that provides for high speed data transmission over ordinary copper telephone wires. There are a number of variants, including ADSL, HDSL, SDSL, and VDSL. The acronym xDSL is sometimes used to refer to them as a category.

DWDM (Dense Wavelength Division Multiplexing)

A method of transmitting many individual light signals over a single fiber through the use of different wavelengths.

-E-

Earth Station

In satellite communications, a terrestrial communications center that maintains direct links with a satellite.

EIS

Energy Information System

EMS

Energy Management System

End Office

A telephone company switching office that provides local loop connections directly to subscribers.

ESMR (Enhanced Specialized Mobile Radio)

Trunked radio system that can provide advanced two- way voice and data services over a wide area.

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Ethernet

A standard bus network for local area data networks developed by Xerox, Digital Equipment Corporation and Intel. Ethernet formed the basis for the IEEE 802.3 standard.

-F-

Facsimile (FAX)

The process of transmitting text and images via telecommunications to a remote location where hard copy of the transmitted material is reproduced.

FDMA (Frequency Division Multiple Access)

The division of the frequency band allocated for wireless cellular communication into 30 channels, each of which can carry a voice conversation or, with digital service, carry digital data.

Federal Communications Commission (FCC)

A board of commissioners appointed by the President of the United States under the authority of the Communications Act of 1934, having the power to regulate radio, telephone, cable television and all other interstate communication systems.

Fiber Optics

Hair thin filaments of transparent glass or plastic that use light to transmit voice, video or data signals.

Frame Relay

A telecommunication service designed for data transmission between local area networks (LANs) and between end-points in a wide area network (WAN). Frame relay puts data in a variable-size unit called a frame and leaves any necessary error correction (retransmission of data) up to the end points, which speeds up overall data transmission. For most services, the network provides a permanent virtual circuit, which means that the customer sees a continuous, dedicated connection without having to pay for a full-time leased line. Frame relay generally falls within the category of packet switching, sometimes referred to as “fast packet” switching.

Frequency

The number of cycles or events per unit of time. When the unit of time is one second, the measurement unit is the Hertz (Hz).

Frequency Division Multiplexer

A device which combines multiple channels of information by assigning different frequency bands to each segment of information and then combining them into one signal.

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Frequency Modulation (FM)

A process in which the intelligence of a signal is represented by variations in the frequency of the oscillation of the signal.

FTTC (Fiber to the Curb)

A broadband technology that combines fiber optics and DSL or coax technologies to deliver multimedia services at the residential level.

FTTH (Fiber to the Home)

A broadband technology for delivery of multimedia services at the residential level by providing the subscriber with a fiber optic connection to the network.

Full-Duplex

A type of operation in which simultaneous two-way conversations messages or information may be passed between any two given points.

-G-

Gbps

Billion (giga) bits per second.

GEO (Geostationary Orbit)

The orbit position where communications satellites will rotate at the same speed as the surface of the Earth and appear to be stationary over the same Earth location (about 22,500 miles above the earth's equator).

GHz

Billion (giga) cycles per second.

-H-

HDSL

High bit-rate Digital Subscriber Line.

Head-end

The control center of a cable television system where incoming television, radio and satellite signals are amplified, converted, processed and combined into a common cable for transmission to subscribers.

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Hertz (Hz)

A unit of measurement for frequency; formerly called cycles per second.

HFC (Hybrid Fiber Coax)

A broadband technology that combines fiber optic and coaxial cable for delivery of two-way CATV and multimedia services.

-I-

Index of Refraction

A property of material indicating the amount of refraction (i.e. “bending”) that light will undergo when passing through the material. A reflective surface is created at the boundary of two materials with differing indices of refraction.

Information

Processed data (as opposed to raw data).

Interconnect Equipment

The equipment at each end of a channel. Also called terminal customer-premises equipment.

Interexchange Carrier (IXC)

A carrier engaged in telecommunications (long-distance access and transport area boundaries).

Internet

A network of computer networks which originally began as the ARPANET (for Advanced Research communication equipment and interexchange across local Projects Agency NETwork). This DOD commissioned project originally linked universities and research facilities for the quick and easy exchange of data. The ARPANET was commissioned in 1969 and officially ceased existence in 1990. As the Internet has matured, it has become increasingly commercial and is growing at an unprecedented rate.

Intraexchange

Within the local access and transport areas, See Local Access and Transport Area (LATA).

Intranet

An internal network that allows the employees of a company, or students within a campus environment, to access company data via tools that are similar to the “public” Internet. Intranets typically make use of the World Wide Web by utilizing web browsers as the interface. Software “firewalls” keeps access restricted to internal use. Intranets allow for inexpensive, ubiquitous communication with remote offices and employees.

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IP (Internet Protocol)

A protocol within TCP/IP used for computers to communicate over the Internet.

ISP

Internet Service Provider.

-K-

Kbps

Thousand (kilo) bits per second.

KHz

Thousands (kilo) cycles per second.

-L-

Latency

A measure of the time delay in the transmission of a message or signal across a network.

LEO (Low Earth Orbit)

Refers to a satellite orbit that is closer to the earth than a geosynchronous orbit (GEO). LEO satellite systems employ fleets of satellites orbiting within a few hundred miles of the earth to provide worldwide coverage.

LMDS (Local Multipoint Distribution System)

A broadband wireless technology that can provide multimedia services in the 27 to 31 GHz range.

Local Access and Transport Area (LATA)

One of the 161 local telephone servicing areas in the United States established as a result of the Bell divestiture that now distinguish local from long- distance service. Circuits with both ends inside the LATA are generally the sole responsibility of the local exchange telephone company. Circuits that cross the LATA boundaries are the responsibility of interexchange carriers.

Local Area Network (LAN)

A configuration of telecommunications facilities designed to provide internal data communications within a limited area, such as a building.

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Local Exchange Carrier (LEC)

A company that provides telephone service for subscribers in a geographical area encompassing one or more LATAs.

-M-

Major Trading Areas (MTA)

Geographical areas established by Rand McNally based on population and economic factors. There are 51 MTAs in the United States. Each MTA is subdivided into Basic Trading Areas (BTAs). The FCC sometimes uses MTAs as boundaries for the allocation of radio frequency spectrum sold through an auction process.

mbps

Million (mega) bits per second.

MHz

Million (mega) cycles per second.

Microwave Radio

Line-of-sight radio transmission using very short wavelengths, corresponding to frequencies above 1,000 MHz.

MMDS (Multichannel Multipoint Distribution Service)

This service, which is also known as “Wireless Cable,” provides traditional cable television and other broadband services over microwave frequencies.

Modem

A word that combines modulator and demodulator. A device that converts digital data to an analog signal for transmission on phone lines and other analog circuits. Converts analog signals at the receiving end into a digital format.

Modulation

The process of varying certain characteristics of a signal in accordance with a message signal to be transmitted (e.g., varying the amplitude, frequency or phase).

Multimode

A type of optical fiber that is characterized by a large core that allows more than one mode of light transmission.

Multiple System Operators (MSO)

An organization operating more than one cable television system.

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Multiplexer

A device that combines a number of low-speed data channels into one higher speed channel at one end of a transmission system and divides it into low-speed data channels at the other end.

-N-

NAP (Network Access Point)

A junction point where major Internet service providers interconnect with each other. Also known as Internet Exchange (IXS), connection at one or more of these NAPs means “connected to the Internet.”

Network

A series of points, nodes or stations connected together by communication channels.

Node

A terminal of any branch of a network or a terminal common to two or more branches of a network.

NZ (Non-zero dispersion shifted fiber)

Optical fiber that is designed to limit the effects of chromatic dispersion and nonlinear distortion when operating in the 1550 nanometer wavelength window. These fibers are most often used for long distance networks requiring DWDM.

-O-

OC-N (N = 1, 3, 12, 48, 96, 192), or [Carrier Level N]

Refers to standard Synchronous Optical Network (SONET) line rates, where N is an integer. Data rates are multiples of 51.84 MHz. Each OC can carry a DS-3, or sub-components, as payload (throughput).

Open Wire Pairs

A communication transmission facility comprised of pairs of bare wire conductors supported on insulators, which are mounted on poles to form an aerial pole line. (Still used today in some rural areas for telephone service.)

OPGW (Optical Ground Wire)

A transmission line ground or shield conductor containing optical fibers for telecommunications.

Optical Fiber

See fiber optics.

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OSI Seven-Layer Model

A standard architecture for data communications. Layers define hardware and software required for multi-vendor information processing equipment to be mutually compatible. The seven layers from lowest to highest are: physical, link, network, transport, session, presentation, and application.

Overhead

Extra bits in a digital stream used to carry information besides actual message signals.

-P-

Packet

A sequence of data, with associated control information that is switched and transmitted as a whole.

Packet Switching

A means of transferring data messages across a network. The data message is divided into packets, and then each packet is sent across the network independently. The data message is reassembled at the receiving location. Each packet making up a data message may take a different route to the destination.

PBX (Private branch exchange)

A private telephone exchange located on the user's premises and connected to the public network.

PCM (Pulse Code Modulation)

A process of converting analog signals to a digital bit stream through a quantizing process.

PCS (Personal Communications Service)

A form of cellular communications using frequencies in the lower microwave spectrum. Systems can provide voice and data communications to hand-held telephone and computing devices.

PEG (Public, Educational and Governmental access channels)

Channels that the franchising authorities have authority to require.

PON (Passive Optical Network)

A technology that allows optical signals to be passively split and combined in a manner similar to electrical signals. PON will be a key element in the success of Fiber to the Home (see "FTTH").

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Pop

Short for population, this term is generally used when describing or comparing the population of one market area to another.

POP (Point of Presence)

Typically refers to the location of a switch operated by an interexchange carrier at which the IXC relays calls to or from the local exchange carrier's network.

Protocol

Communication rules that must be followed for a successful transmission to take place.

PSTN (Public Switched Telephone Network)

Traditional telephone network using copper wires to transmit signals between end users.

Public Access Channel

A non-commercial public cable channel available on a first-come-first-served, non-discriminatory basis.

-R-

Repeater

Generally, a device that amplifies an input signal or, in the case of a regenerating digital repeater system, amplifies, re-times and reshapes the electronic pulses preparing the signal for re-transmission.

Response Time

In a data system, the elapsed time between the end of transmission of an inquiry message and the beginning of the receipt of the response message, measured at the inquiry originating station.

-S-

SCADA (Supervisory Control and Data Acquisition)

Systems that allow for remote monitoring and control of facilities.

Simplex

A circuit affording communications only in one direction. Conventional radio systems usually incorporate two simplex frequencies to allow communication in either direction, but in only one direction at a time.

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Single mode

A type of optical fiber characterized by a small core that allows only one mode of light transmission.

SMR (Specialized Mobile Radio)

Two-way radio systems that are owned and operated by a third party who leases airtime to subscribers.

SONET (Synchronous Optical Network)

A form of synchronous transmission of information originally designed for fiber optic systems and now available in newer microwave radio equipment. Now a world standard, SONET allows the transmission of a wide range of data speeds with a minimum of interface equipment.

Synchronization

The process of determining and maintaining the correct electronic timing for transmitting and receiving information.

Synchronous Transmission

Data communications in which characters or bits are sent at a fixed rate maintained by electronic clocking devices at both the transmitting and receiving ends of the circuit.

-T-

T-Carrier

A digital transmission service from a common carrier (T1, T3). Introduced by AT&T in 1983 as a voice service, its use for data has grown steadily. T-carrier lines use four wire cables. One pair is used to transmit, the other to receive.

T-1 Carrier

A multiplexed digital transmission system that provides 24 voice-grade channels on one pair of copper wires. (See also DS-1.)

Tandem Office

A telephone company switching office that provides connections between end offices.

Tb

10 (tera) bits per second.

TCP/IP (Transmission Control Protocol/Internet Protocol)

The standard communications protocol required for computers that communicate on the Internet.

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Telco

A generic abbreviation for telephone company.

Telecom

A generic abbreviation for telecommunications.

Telecommunication

Any transmission, emission, or reception of information of any kind (sound, voice, images, or data) over a distance by electrical or electromagnetic methods.

Telecommunication Service Provider

An entity (common carrier) that offers telecommunications for a fee directly to the public.

Telecommunications Act of 1996

A far-reaching amendment to the Communications Act of 1934 which eliminates barriers to market entry for many different types of telecommunications companies and which may provide new opportunities for public power systems.

Terminal Equipment

Communications equipment at each end of a circuit.

Time Division Multiplexer (TDM)

A device that transmits data via multiple independent channels on a single high-speed circuit by interleaving the data from each channel on a time- shared basis.

Token Ring Network

A form of local area data network where network access is allocated by the reception of the network's token packet. The token circulates among the network's nodes.

Transponder

A combination receiver-transmitter that receives a signal amplifies it and retransmits it at a different frequency. Communications satellites include multiple transponders.

Trunk (Cable TV)

Main video lines from the head-end of the cable television system to feeder lines that distribute signals to subscribers.

Trunk (Telephone)

A single transmission channel between two points which are switching centers, nodes or both. Commonly used to describe channels between PBXs or telephone company central offices.

-U-

UHF

Ultra High Frequency, typically considered to be 300 to 3000 MHz.

Uplink

The communications link used to transmit information from the Earth to an orbiting satellite.

Upstream

In a cable system, the direction from the subscriber terminals to the head-end.

UTP

Unshielded Twisted Pair. Copper twisted-pair cable containing no individual pair shielding.

-V-

Value Added Network (VAN)

Data network operated by a firm that obtains basic transmission facilities from common carriers and adds “value,” such as error detection, data storage, directories or sharing and then resells the service.

VHF

Very High Frequency, typically considered to be 30 to 300 MHz.

Virtual Circuit

A digital communications channel that behaves like a dedicated channel but in which no real dedicated connection exists between the endpoints.

Virtual Network

A carrier-provided service that uses the PSTN to provide custom configurations, such as conditioning, error testing and higher speed, full duplex transmissions.

VOD (Video on Demand)

A CATV service that provides video entertainment such as movies on demand as opposed to on a predetermined time schedule.

Voice Channel

A channel on an electronic communication system capable of transmitting voice band frequencies.

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Voice band

The range of frequencies used by telephone companies and private telecommunication systems to transmit the human voice, typically from about 300 Hz to 3,000 Hz.

VSAT (Very Small Aperture Satellite Terminal)

A small satellite station, usually less than three meters in diameter, capable of transmitting and receiving data via satellite.

-W-

Web TV

Service which allows a user to browse the Web using a hand held control and optional keyboard without the need for a PC. The TV serves as the graphical user interface.

Wide Area Network (WAN)

A telecommunications configuration that links computers or other electronic devices that may be geographically distant.

Wideband

A communications channel offering bandwidth greater than a voice-grade channel. There is no specific definition of wideband in terms of data rates but typically speeds in excess of 28.8 kbps are considered wideband data rates.

Wireless Web

Mobile Internet access via PCS.

World Wide Web (WWW)

The World Wide Web (WWW) is an Internet service that is graphical in nature. It enables a user to work not only with text, but with graphics and even audio, to establish a “multimedia” connection. One must load special software called a “browser” to access the full potential of the Web.