

# A SUGGESTED FLORIDA BROADBAND POLICY AND STRATEGY



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*Note: Since the original Policy and Strategy discussion begun last spring, a number of developments have taken place. We have reviewed, as a state and individually, the first round of stimulus proposals affecting Florida for NTIA/BTOP grants. The has reached almost the three-quarters point in developing the required National Broadband Strategy due February 19, 2010. Many of its inquiries are bearing fruit and provide significant data. In addition, many public and private partnerships have emerged, and more are developing, to capture the power for transformation of our economy and societal institutions provided by ubiquitous [access](#). As noted, however, by Christopher Sullivan at a recent DMS working group meeting, we must look to the emerging national strategy, emerging applications and also sustainability beyond stimulus. We consider this a “work in progress” that will continue until all segments of our economy and society are working together for their own improvement and the common good.*

## **BROADBAND AND OUR NATIONAL (and STATE) ECONOMY**

Broadband as an essential utility has become the central nervous system of our economy; an individual or entity can not fully participate in our society without broadband access. *“Broadband networks provide a fundamental platform on which many different entities can build to offer valuable goods and services that will benefit Americans as consumers, workers, and citizens.”* As recognized by Congress and the Federal Communications Commission, broadband networks are now seen as a

vital component of the 21<sup>st</sup> century national infrastructure comparable to canals, railroads and telegraph in the 19<sup>th</sup> century; and interstate highways, telephones and electricity in the 20<sup>th</sup> century.

The universal availability of affordable high-speed access to the Internet has increasingly become essential not only for business, but also for [preparedness](#) and recovery, public safety, research, education, community institutions, [care](#), energy, transportation, protecting our environment, and just about every else that we do. A recent survey found that broadband connectivity to the Internet is considered more valuable than any other form of new communications and entertainment services entering the market.

## A CALL TO ACTION—THE NATIONAL CONTEXT

The President and Congress have set high standards and goals for our country to achieve in the new global economy. While our economy has taken center stage in domestic policy, the President has set out to lead the country on a bold new path designed to stimulate innovation, invest in necessary infrastructure, enhance America's global competitiveness, and bring benefits of the Information Age to all Americans. He has sought to light a fire under those of us with responsibility to take action to improve our sustainability as a leading global economy and society.

President Obama's recognition of America's need for a world-class communications infrastructure is similar to President Eisenhower's recognition in the 1950s that America needed a world-class [system](#). The combination of an overall new tone to the FCC and the initial introduction of Broadband into the President's economic stimulus package empower all of us to act boldly to achieve **The Commander's Intent** "to return the [States](#) to its leadership role in the global economy."

## FLORIDA AS A MEGATREND STATE—THE STATE CONTEXT

Florida is the 4<sup>th</sup> most populous state in the Union and was nationally recognized for its innovative governmental leadership beginning in the late 1960s and through the latter part of the 20<sup>th</sup> Century.

Although only average in its funding commitment to [services](#), it was a recognized national leader in many areas through establishing a public-private infrastructure that provided the foundation for an economy that flourished throughout the last third of the 20<sup>th</sup> Century. It was a leader in granting local authority for the creation of [-private partnerships](#) and relies heavily on public-private partnerships to drive its economy and governmental services.

As a peninsular state, as well as its diversity of populations and regions, Florida provides a perfect “test bed” for national pilot programs. Florida’s is second only to New York in state density of International and Domestic fiber connections with Miami’s International Gateway, “NAP of the Americas,” as one of the world’s largest gateways. Its population and state gross economic product match or better many countries and are among the top four in the United States, far behind California but matching Texas and New York. *“If it works in Florida, it often works everywhere else.”*

## **FLORIDA’S BROADBAND STRATEGIES and CONTEXTS**

### **THE “NEXT LARGER” CONTEXT**

Everyone who is contemplating requesting stimulus funds, or even building their local “business plan,” should participate in the dialog that goes into the construction of the national and state strategy. Each application should state their conclusions as to what the national, state and local strategies should be as part of their design for their own requests for funding their specific element. Because by considering this next greater context of the national, state or local (regional) plan, as the case may be, it becomes far easier to see what must be done at the community (local neighborhood or city/county) level. An applicant should characterize its response as an “Interim Plan” and submit it as an appendix to its request for funds. Part of this Interim Plan would be to identify exactly how its proposed individual project fulfills a particular aspect of the overall national, state and local plans. This would provide an additional perspective to all as to whether the request adds value, how much value is brought, how it may be replicated in other plans and whether the request should be rethought and resubmitted.

### **PUBLIC-PRIVATE PARTNERSHIPS**

A hallmark of Florida’s success in developing public infrastructure to serve the needs of its economy and communities has been the development of public-private partnerships (“PPP”). Although these

partnerships may take many forms, the essence of a PPP plan for the development of a utility or transportation infrastructure usually works like this:

\* a governmental entity or not for profit is formed, if necessary, to apply for grants of public funds, receive private support, issue debt, hold the real or virtual assets, contract with a managed services company to be the wholesale provider to operate the shared infrastructure plant. The managed services company contracts for construction, repair and maintenance services for outside plant facilities with contractors in each locale until the local (general) governmental entity, if within a singular governmental jurisdiction, assumes responsibility.

\* in the case of broadband infrastructure, multiple retail providers (those who actually sell services to end users; i.e. OSI levels 5–7) buy Ethernet transmission paths from the wholesale provider, but then deliver actual services (Internet access, , , Health and Safety monitoring; emergency services, etc.) to the subscribers. The retail service providers do all the marketing to subscribers, they answer the phone for customer problems and questions, and they bill and collect money from the subscribers. The wholesale provider never competes with the retail providers for subscribers.

### **CURRENT NATIONAL CONTEXT**

As seen from the federal stimulus bill and the FCC National Broadband Notice of Inquiry, Congress and the Administration are moving toward consensus on several **governing principles for a national (and state) broadband strategy**, including the following:

- Multiple-purpose and multi-beneficiary communications networks have many advantages over single-use networks;
- Networks should be open and non-discriminatory to the maximum extent possible;
- The United States should strive for communications capabilities that equal or exceed capabilities based on those of the other leading nations of the world;
- An early priority of federal investments should be to bring broadband connectivity to un-served areas and to improve broadband connectivity in underserved areas and for underserved populations;
- Community anchor centers, including educational, health care, library, public safety, and other community-based facilities, offer not only an opportunity to reach traditionally underserved

populations, but also to develop backbone facilities that can later be expanded to transform public services and serve homes and local small businesses;

- Priority for disaster preparedness and recovery, along public safety during periods of emergency, should be planned and granted;
- Government should assure consumers access to high quality and accurate market information which allows true consumer choice in a competitive market and protects consumers and competing service providers from misleading, confusing and harmful advertising and billing practices; and
- States should strengthen the tie between rural economies and underserved populations with its more urban economic engines.

**To remain competitive in the emerging global economy, the United States must make affordable and ubiquitous access to broadband connectivity at a data-carrying capacity that is not currently available in most of the United States. There is growing recognition that bandwidth speeds of at least 100 Mbps will need to be available to much of America by 2015.**

#### **FLORIDA'S CONTEXT**

Florida has significant assets to assist it in developing its broadband strategy. It is the third most dense fiber area in the U.S. (after New York and Virgin Islands) and has a significant amount of “big and middle pipe” fiber looped throughout the state in the hands of a number of major private providers—our telecommunication and electric utilities, such as: AT&T, Verizon, Level 3, FPL FiberNet—as well as one non-profit public-private partnership in Florida LambdaRail (part of the National LambdaRail system).

Florida has two major network access points or “meet me, peering” points of access in the “Network Access Point (NAP) of Americas” facility in Miami and the national facility in Jacksonville. It also has a significant number of local NAPs and Points of Presence (“POPs”) already established with county and regional facilities throughout the state of Florida.

Florida also has, since its 1968 Constitution, a unique “home rule” power in which local governments can provide all the public services its citizens require, not only individually but in combination. These added powers to enter into inter-local agreements are not only legally available, but have extensively been used over the past decades in financing and building public infrastructure. These same local governments, and the regional entities they can create, can also establish a state-wide support and oversight group, including state government in its structure, with all the necessary powers and authority to provide the necessary state-wide support to the implementation of the Florida Strategy.

### **FLORIDA’S BROADBAND VISION**

Florida’s vision is to achieve a level of broadband connectivity such that sustaining applications are not impeded by lack of connectivity and capacity. Remarkable placing specific metrics on the actual level of broadband speed and capacity is difficult to achieve; yet in keeping with the objectives stated by the FCC and neighboring nations each attempting to establish policy specific stated speeds and capacity help us to stay focused on the goal of removing the current limits of our National Broadband Infrastructure to our economy, security, education, and safety. Thus stated our goal would be to achieve the following advanced broadband capability by 2015:

***100 Mbps to 1Gbps service over fiber to 90% of the residences with an 80% adoption rate; 1Gbps service to 90% of our small/medium public “anchor institutions” and businesses with 1–100 Gbps service to our largest “anchors and businesses” with a 100% adoption rate; and 1–10 Mbps for 90% of our wireless connections.***

Florida also has a priority to provide rural health care providers and schools/libraries and community organizations serving the rural areas and underprivileged components of urban populations the ability to provide their clients access to the most modern technology available and to support economic development in their regions and populations.

Although the overall goal is stated as available to all citizens, Florida recognizes that some availability may be at “community anchor institutions,” as well as serving some homes and businesses initially by wireless alternatives, to make it affordable and usable to all. Florida also recognizes that its “community anchor institutions” and businesses require greater capability; such as the announced state health objective to place at least 1 GB service in every hospital and major

local health center. The same would be true for main libraries, school districts, public safety and governmental centers. Significant services should also be contemplated at “branches or neighborhood centers closest to the target population.”

### **A SUGGESTION FOR FLORIDA’S INITIAL BROADBAND STRATEGY**

As Florida contemplates its best strategy to meet national broadband goals, we suggest focusing attention initially to three equally important elements. See also, FCC requests for comments on Middle Mile/Second Mile access (due 11/4), Broadband Clearinghouse (due 11/16) and connecting “Anchors” to fiber (due 10/28), among others.

- **Establish a Florida Innovation Network (FIN) to support:**
- - Establishment of local and regional Network Access Points “NAPs” designed to provide a neutral point of presence for all network and service provider elements.
  - Establishment of a service and facility based common peering agreement. This is an agreement whereby carriers and networks exchange connectivity. These agreements should be technology agnostic, Fiber, Wireless, Cable, Copper, IPv4, IPv6, and leave room for future technologies. The state should provide support for the development of this public-private “peered” network by encouraging “free” access and installation fees in exchange for use of its own fiber and allowance for all its network connections (“anchor tenants”) to be open, as currently most counties, cities and school districts do.
  - Establishment of a neutral provider or clearinghouse to provide audit and settlement of peering agreements to assure accurate payment of use fees.
  - Lead participants could be Enterprise Florida, DMS and major state agency fiber owners, FLC and FAC, FLR, and leading private providers, including electric utility nets (smart grids); supported by FCC regulations and USDOE/NIST/ NTIA/RUS support within framework set by President and Congress

- **Create a Florida Broadband Support Group** pursuant to FS chapter 163, with its initial subscribers being the regional broadband authorities (where established) or other major local parties of interest. The Group should also include key state and local government agencies; such as the Executive Office of the Governor, Departments of Management Services, Transportation and Environmental Protection, FLC and FAC, and Major Private Provider networks.
- **Develop a number of Local (Regional) Broadband Authorities** pursuant to FS chapter 163, with their initial subscribers being counties, cities, school districts and special districts who agree to dedicate their efforts to build a “multi-service, open access” broadband infrastructure based on public-private partnerships, for those areas that do not have an entity capable of applying for, and implementing, a competitive application.

The Federal Communications Commission is also developing the Metrics and Policies that will lead to the overall governance of these networks and the [Broadband Coalition](#) is working on voluntary agreements to assist the Commission. Florida will adopt and comply with these emerging national standards.

#### **FLORIDA INNOVATION NETWORK (FIN)**

As the national broadband strategy matures it is clear that it will be similar to the Eisenhower Highway system which provided the infrastructure that drove our economy during the last half of the Twentieth Century. The National Backbone will support regional and state networks designed to provide access to communities. It will be the responsibility of each state and its regions to provide its own governance similar to the State Highway and Local Road systems. Peering and exchange systems already exist today and the Florida system supports a strong policy to insure the transparency of such a process during operations. This in fact is one of the key elements to meet emerging federal requirements for a “multi-sectoral and open access (non-discriminatory) architecture” and to insure sustainability in the economics of a Broadband strategy.

#### **FLORIDA BROADBAND SUPPORT GROUP**

Hierarchically, this is listed second but it will actually be achieved after the initial Regional (and Local) Broadband Networks are established, and simultaneous with their development of stimulus grants, to provide state-wide coordination, economies of scale, and begin the process of bringing state assets to the table. We suggest that the local “home rule” authority (and FS Chapter 163) should be used to allow the Regional (and Major Local) Networks to enter into a Memorandum of Agreement, along with key state departments, in which the Florida Broadband Support Group can be established. The Group would be formed to provide support and common operating practices to the Regional and Local Authorities but would not be contemplated to furnish the financing, construction or system maintenance for any network. The Group should also assemble the state assets and direct state commitments to various applications that would build the user communities (especially the public sector “anchor institutions”) in the Regions and make their networks more sustainable.

The Group should not *regulate* or *control* Regional or Major Local Authorities and Private Providers; but state suggestions, assets and grant programs will go a long way toward filling in the holes and provide “matching funds” for stimulus grants to the regions as well as assure better sustainability. Transparency will be needed in order to see that on the current implementation of Florida’s strategy is effective.

The current mapping exercise further supported by the American Recovery and Reinvestment Act program should make clear the hierarchies of the middle/second mile vs. the last mile. One could even imagine a SimScript model exercising the map a bit to illustrate where the queuing phenomena arise and mysteriously rob the national network of effectiveness through unexpected choke points.

How is this different from what is going on right now? The difference is the expanded common understanding of what the Middle Mile/Second Mile means to the Commander’s Intent to provide broadband capability to all Americans and how to measure the real expansion and capability. This importance of the Middle Mile/Second Mile is only a thesis right now in many observer’s minds, needs to be scientifically proven and options for effectively and efficiently provisioning it developed.

### **BUILD REGIONAL BROADBAND AUTHORITIES TO PROVIDE THE BACKBONE TO COMMUNITY ACTION AND SUPPORT LOCAL NETWORKS**

Florida can use its unique set of “home rule” powers to create a series of Regional Broadband Networks that will be large enough to focus on developing a regional infrastructure that meets most

of the public and private needs in its emerging economy. These Regional Networks should focus initially on feeder networks; that is, “wholesale distribution” or “middle/second mile” networks. From studies of the various states, there are two sections of these distribution networks that are important: those from the state level carrier Network Access Points, both meet-me, peering points (zero-mile facilities) and Points of Presence (POPs) to a regional network (“local loop”) within a state, and from the regional network access points to a convenient “access point” in a small community or a neighborhood in a larger city. The reason to distinguish between these two sections is that in many cases they are owned by different organizations, each with a different business case, payment arrangement formula, and administrative domain. From these local access points to the user (fixed or mobile), we have the Last Mile. The Local (Regional) Broadband Network will enable the Last Mile (retail service) to be provided competitively by a diverse group of public and private service providers using both fiber and wireless technologies.

### **EMERGING SOLUTIONS USING FLORIDA’S BROADBAND STRATEGY**

Florida’s current focus is on assisting communities establish their Local (Regional) Networks.

Efforts are underway throughout Florida. In order to demonstrate the emerging solutions, a review of several activities follows [needs input from audience; more discussion of actions being currently taken which implement above strategies!!]:

- Establishment of “peering agreements” among current providers—need wide-ranging discussion pointing out state-wide carriers arrangements, as well as local peering arrangements (focused on county/city provisions of “free” peering ties into their anchor networks), etc. –discuss need to state to open access up to its “anchor” institutions and focus on supporting peering/aggregation and applications adoption.
- The Department of Management Services Broadband Working Group (and its state agencies served) has actively pursued identifying assets and also potential applications for public broadband uses. It has currently focused on working with the rural regions of the state; particularly the three Rural Areas of Critical Economic Concern (RACEC regions) established in 2004. [Need to discuss state-wide planning and mapping activities along with future of the DMS working group; see Appendix suggesting DMS working group role.

- Discuss local arrangements and first round applications as well as future plans for second round and after stimulus actions.
- More on current and proposed Public–Private Partnerships
- Suggestions for more?

PREAMBLE: SUGGESTED ROLE FOR DMS “BROADBAND WORKING GROUP”

After much discussion on numerous conference calls, it appears that the DMS ARRA Broadband Strategy and Planning Group has been unable to fully clarify its new role in the continuing drive forward to deploy advanced communications in the State of Florida. In an attempt to move the process forward, this draft is being presented to the group as a core document, along with a suggested state policy and strategy paper, which can be modified as needed to define the objectives thus move forward with the process.

Our goals should be aligned with the FCC’s National Broadband Strategy. The US Broadband Coalition analyzed, in its September 24<sup>th</sup> report,[\[1\]](#) a number of key goals and metrics to achieve a nation where every American home, business, and public and private institution should have access to affordable high–speed broadband connections to the Internet.

**Specific Direction, Objectives and Activities:**

1. Focus state agency activity on facilitating local multi–purpose network development.
2. Build and/or facilitate local technology planning teams or work with existing teams; e.g. RACECs, Pensacola/Okaloosa/SW/Central/SE FL Innovation Networks, various other regional/county/city/community teams, etc. Provide a monthly report.
3. Conduct an inventory of statewide availability of wireline and wireless broadband facilities at the census tract/block level.
  1. This inventory to be categorized under the following headings (use lowest speed to establish category): ≤ 1 Mbs up/down, 1–2.5 Mbs up/down, 2.5–5 Mb up/down, 5–10 Mbs up/down, 10–100 Mbs up/down and ≥ 100 Mbs.

2. Determine percentage (%) of users, households and businesses based on the category of broadband speed – type – performance.
3. Determine factors of advertised speed verses actual speeds by provider.
4. Determine where all inter-city fiber routes are by owner/service provider and map them including:
  1. Location of all manholes, handholes, splice cases and POPs on said routes; and
  2. Quantity of dark fiber pairs existing between POPs.
  3. Identify all public anchor tenants that do not have access to fiber; said access defined as no non-disruptive access to fiber within 5 miles of the location.
    1. At a minimum, public anchor tenants are defined as:
      1. i. Education facilities– Public and Private
      2. ii. Libraries
      3. iii. Health Care providers – hospitals and clinics, public and private
      4. iv. Economic Development agencies and non-profits
      5. v. Local, County and State agencies
      6. vi. Agricultural Co-Ops
      7. vii. Utility Co-Ops
      8. viii. Emergency Services including EOCs, EMT, Fire and Police
      9. ix. Non-profit Community Aid Organizations
    10. Encourage and facilitate sustainable and statewide infrastructure development initially focusing on unserved and underserved rural and urban areas and populations utilizing existing inter-city and metro fiber in a “peering network arrangement.” Encourage the development of local and regional ties that are based on realistic economic zones; that is, areas the have a current primary exchange of economic activity (hooking up to the regional “economic engines.”)
    11. Develop programs to encourage broadband use in unserved and underserved areas, especially among public anchors, the elderly and impoverished.

1. Develop brochures, handouts, and multimedia advertisements to illustrate what is available on the internet.
2. Develop self help programs
3. Support public computer centers
4. Develop training program and literature to remove the fear of broadband and the Internet.
5. Assist in the acquisition of internet applications for health care, GIS, on-line security, E-learning, and WEB development.

The immediate goal of this activity is to deploy middle mile fiber connectivity with Internet access to the following demographic at the minimum bandwidth shown, promote last mile development and promote use of the infrastructure.

Our goal would be by 2015: Advanced Telecommunications Capability equaling:

[OPTION 1 state-wide]

*100 Mbps to 1Gbps service over fiber to 90% of the residences with an 80% adoption rate; 1Gbps service to 90% of our small/medium public “anchor institutions” and businesses with 1-100 Gbps service to our largest “anchors and businesses;” and 1-10 Mbps for 90% of our wireless connections.*

[OPTION 2 by Incorporated Area]

Household Count	Business Count*	Bandwidth
≤ 5000	≤ 50	5 Mb
5001 - 10,000	51 - 150	10 Mb
	151 - 250	20 Mb
10,001 - 20,000	251 - 500	50 Mb
	501 - 1500	100 Mb
> 20,000	> 1500	500 Mb
Hospital or Clinic	Each	500 Mb Initial

Hospital or Clinic	Each	1 Gb
Schools K - 12	Each	1 Gb
Colleges and Universities	Each Campus	1 Gb

*\*Business count includes private business and government anchors excluding schools and hospitals. Hospital, school and upper level education requirements are in addition to the regular bandwidth.*

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[\[1\]](http://broadbandcensus.com/2009/09/us-broadband-coalition-releases-report-on-broadband-strategy-bringing-160-organizations-together/) US Broadband Coalition Report 9-24-09 may be found at <http://broadbandcensus.com/2009/09/us-broadband-coalition-releases-report-on-broadband-strategy-bringing-160-organizations-together/>