



"Small is Good, Simple is Better"

Metropolitan Broadband: An Alternative for Your Community, Today!

Increasingly, city government leaders - from mayors to city council members, city managers to IT directors - are expressing interest in learning more about metropolitan broadband/municipal wireless options and getting a project started. This new industry beckons to city leaders with the promise of economic development, more efficient delivery of city services, enhanced public safety, and universal access to affordable broadband. Typical first steps by an interested city will include researching options on various websites (we recommend www.metronetiq.com) and attending a conference or seminar.

The Value of Standardization, Demonstration and Community Mobilization

But a number of cities are now ready to take the next step, having moved beyond these initial stages of preliminary education. MetroNetIQ, a niche consulting firm whose specialty is early stage public sector consulting on metropolitan broadband, guides such leaders efficiently, prudently, and quickly to take the next steps to turn their wireless vision into a reality. MetroNetIQ takes advantage of three key steps to enable these visions: 1) a standard process; 2) demonstrations to showcase the potential for community stakeholders; and 3) community mobilization to leverage resources and build project momentum.

Standardization

Consultants in this new industry tend to approach their projects as unique activities - such one-off approaches add unnecessary expense for the city at this early stage. MetroNetIQ believes in a better way: clients save money by leveraging a rational approach and learning from the experience of others. The MetroNetIQ consulting approach is a blend of adapted processes (80% standardized, 20% customized) that provides the client with the lowest cost, lowest risk, and highest return on initial spending. Whether for consulting or pilot projects, it makes sense to contain costs and risks starting out by buying a standardized bundle of products and/or services that fit the needs of the individual community or business group, and when possible to work with neighbors who share that standard approach, so MetroNetIQ encourages regional collaboration as well.

Demonstration

PowerPoint slides and classroom education eventually face diminishing returns - that's when a field demonstration of technology offers added value. Major network equipment and application solution vendors are now sponsoring road shows, which is one option to see for a day how such a system works in real life. Taking that a step further, it's not uncommon for a city to invest in a fixed or mobile demonstration network of their own, perhaps in the city's downtown area, to showcase a technology and gather community feedback over a period of time. Other cities that have a particular application in mind for a particular user group, such as public safety video surveillance, may choose to use a demonstration network to conduct an application pilot, with special focus on one particular task.

Community Mobilization

Finally, because such networks have the potential to transform the way a community operates and interacts, it makes good political and business sense to mobilize the entire community in your network project. That starts with identifying key stakeholders in the community, and engaging in a widespread education and awareness campaign so that a rational, even-handed dialogue and decision-making process can proceed. Taking the extra time and attention to lift up all the stakeholders in the community and forge a consensus on the way to go forward will pay dividends in the future, as the appropriate solution and process enjoys widespread community support from deployment to operation.

Initial Consulting Options for Community Awareness & Project Initiation

Time, Budget and Goals

A city's immediate goals and initial progress, bounded by available time and budget resources, determine the path for a first-step consulting or project engagement. Since cities show wide variance at this stage in the network learning curve, MetroNetIQ presents three alternatives based on the level of progress, unique circumstances, and sense of urgency in the community.

1. **Consensus Building.** A six-month path to education and consensus building relies heavily on remote learning, punctuated by regular facilitated meetings.
2. **Quick Start Consulting.** A three-month path to create a project plan and business plan involves more hands-on consulting and active community awareness development.
3. **Immediate Action.** An immediate demonstration or pilot network project moves a vision beyond talk and study to showcase technology and get the public in on the action.

Hints on Getting Started: Find the Right Fit and Take Action!

1. **Planning.** Begin with a plan. Get together and as a community, answer this fundamental question: "Why do we want a network?" Make a very basic plan and stick to it.
2. **Assessment and Awareness.** Self knowledge and wide-spread community awareness are the keys to sustained activity, project success & new opportunities. The network planning process at the early stages falls somewhere between do-it-yourself and Rocket Science. It makes sense to get help starting out with this step – taking the first step in starting down a new path can be the hardest step of all. We have packaged our consulting services to make things easier – a city can buy a consulting package only, or bundle consulting with a pilot – the key is to show initiative and progress with action!
3. **Network Design.** Radio success is based on environmental and use considerations. Three factors drive the performance of a wireless mesh network: a) coverage area; b) type of environment – flat v. hilly, no trees v. heavily treed, low v. high buildings and straight v. curvy streets; and c) anticipated use of network – heavy bandwidth consumers include video files, "fat" applications, etc., – heavy use will require more nodes and more bandwidth backhaul to the Internet. Start with desired coverage, describe project scope, and let the preliminary consulting process fine tune your network size based on an environmental and usage requirements assessment.
4. **Network Use.** Make the most of the trial by saving some budget resources for applications, to maximize the learning in this process. Assess network signal penetration issues by testing with and without a bridge CPE. Include some voice, video, and consumer applications. These networks gain relevance and acceptance with a much broader user community when they are used for more than just Internet access.

MetroNetIQ Consensus Building Package for Deliberate Planning

Assuming a city is at the initial stages of discussion on a metropolitan broadband project, MetroNetIQ has designed a Consensus Building Package, described below, to raise the awareness and explore the options that a community can consider when getting started. This approach can be delivered in person or remotely, and is meant to support one or more project visionaries who need to expand their community basis of support and generate initial momentum behind a new project. MetroNetIQ's political and business experience and rational engagement process ensure a deliberate and politically sound model for consensus building and ultimately, project success.

1. **Initial Planning Interview.** A project team meets with the consultant to outline an initial project plan, establishing good communication protocols & sound team formation for long-term success.
2. **Background Information Gathering.** MetroNetIQ presents a series of learning modules on its User Manual website, www.wikimetronet.com, which allow a hands-on approach for team members. Using this Wiki software enables users to add to the content themselves and customize it based on their unique learning experience and perspective. In this dynamic field, this website ensures that MetroNetIQ clients can share information and learning as options progress and new solutions are developed, modified and perfected. The website content also draws upon content and best practices from leading consultants and vendors in the field, growing to become an expert database for learning and execution of metropolitan broadband network projects.
3. **Monthly In-House Seminars.** Up to 30 people may attend these once-a-month on-site seminars that offer a chance for a deliberate review of issues and options and a two-way dialogue on how these new technologies may be applied not only to the business of municipal government, but also for other purposes for other community stakeholders (e.g., Digital Inclusion).
4. **Summary Report with Recommendations.** A final in-person debriefing interview with the project team enables joint review, a summary of findings and recommendations for how-to-proceed. An initial plan can lead to further study, an immediate project, an RFQ, or an RFP.

MetroNetIQ Consensus Building Package	Included
Phase One: Consensus Building – 6 months	
Orientation and Introduction Planning Interview	•
Access to WikiMetroNet Website for Background Information Gathering	•
Monthly In-House Seminars	•
Summary Project Report with Debriefing and Recommendations	•
Price: \$9,999 down payment and \$2,500/month for six months	\$24,999

Figure 1. Getting started requires collaboration and consensus: this quick start approach provides shared understanding – fast!

MetroNetIQ Quick Start Consulting Package for Fool-Proof Initial Consulting

Removing much of the complexity and confusion on how to get started, MetroNetIQ has assembled a Quick Start Consulting Package, described below, to avoid initial doubt and indecision and put cities on an automatic path to success with a wireless network project. This approach is designed for the city that has spent some time in research and discussion, but has stalled at the next step. It's fairly basic: together we decide to start on an action plan and schedule a first meeting. MetroNetIQ takes it from there with its standard process and individual interviews, helping you to work together on a proven model for success.

1. **Planning Interviews.** First, a project team is formed to meet with the consultant to outline an initial project plan. The initial project team may include representatives from city government such as city management, economic development, information technology and/or telecommunications, finance, utilities, and public safety. A smaller, dedicated core team is recommended to start. The consultant will first establish good communication and team formation for long-term success.
2. **Municipal Application Assessment.** Initial two-way stakeholder briefings between the consultant and the leadership team for city government and with the city's political leadership provide a shared view and bring government stakeholders to a common understanding of the potential and implications of pursuing a network strategy for the city.
3. **Community Assessment and Awareness Campaign.** The team and consultant identify community stakeholder groups and leadership, then expand awareness of the project and technology potential with initial two-way stakeholder briefings with leading community figures, similar to the meetings with city government above. One or more community demonstrations should be staged, and then regular update meetings throughout the initial engagement period are needed to sustain momentum. ***Self knowledge and wide-spread community awareness will lead to sustained activity, project success & new opportunities.***
4. **Project and Business Plan.** With input from initial consulting assessments, the consultant and the team put together a customized project plan with achievable milestones and a realistic schedule. Finally, an initial business plan outline reflects the needs and desires of the community, as well as the best strategy to meet project constraints and market opportunities, pointing the way forward, whether with further study, engagement with a vendor, or preparation of an RFQ or RFP.
5. **Options for Engagement.** Basic, Standard, and Deluxe packages are offered in the table below, providing flexibility on both the level of activity and budget, ranging from \$4,000 to \$8,000/month for a three-month, high-impact consulting engagement. The key difference in the packages is the level of involvement by the consultant and the number of hours spent with the client.

MetroNetIQ Quick Start Consulting	Basic	Standard	Deluxe
Phase One: Community Mobilization – 3 months			
Orientation and Introduction Meeting	●	●	●
Access to WikiMetroNet Website	●	●	●
Initial Project Plan	○	●	●
Municipal Briefings (Staff & Council)	Group	Group/Indiv	Individual
Community Stakeholder Awareness Campaign		○	●
Public Event(s) Coordination			●
Project Planning - Refinement	○	○	●
Initial Business Plan	○	○	●
Regional Collaboration		○	●
Total Consulting Hours	60	120	240
Total Price, Quick Start Consulting Package	\$11,999	\$17,999	\$24,999

Figure 2. Getting started requires action and focus: this quick start approach provides flexibility and results – fast!

MetroNetIQ Packaged Starter Kits for Demonstration & Pilot Projects

Having studied the industry and options, some cities will determine that they need more hands-on experience, in the form of a demonstration or pilot network. Working with leading vendors, MetroNetIQ has assembled four standard MetroNetIQ Starter Kits, detailed below to remove much of the complexity and confusion on how to get started. This approach is designed for the client who has a considerable amount of technological experience and sophistication and is far along in its research and preparation in network planning.

Getting started is fairly basic: the client picks one of these four kits based on the size of the desired network and MetroNetIQ will ship it to you, or bring it out in person, then work with you or a designated deployment vendor to help you get going, in a matter of days (typically, the network is installed and operational less than a week after receiving the equipment). The prices for optional equipment in the table below, while accurate, are intended as estimates; based on actual equipment and vendor type selected, the price may vary slightly.

MetroNetIQ Starter Kit Components	Nano	Micro	Mini	Maxi
Required Coverage Area (no. of square blocks)	0.5	2	4	10
Required Coverage Area (no. of square miles)	0.02	0.1	0.2	0.5
Preliminary Consulting (no. of hours)	5	10	15	30
Hosted Community Website Package (no. of websites)	2	5	10	20
Wi Fi Mesh Nodes (no. of nodes)	1	4	6	10
Required Internet Connection (T-1 = 1.5 Mbs)	1.5 Mbs	1.5 Mbs	3.0 Mbs	3.0 Mbs
Power Supply & Rooftop or Streetlight Mounting	required	required	required	required
Deployment	included	included	included	included
One-year of hosting and maintenance services	included	included	included	included
Total Price, Starter Kit	\$10,000	\$25,000	\$35,000	\$60,000
Optional / Recommended Additions / Est'd Prices	Nano	Micro	Mini	Maxi
Consumer Premise Equipment (CPE) – bridge unit to bring wireless signal inside the home or business	10	30	50	100
Est'd Price, CPEs (per bundle)	\$2,200	\$6,000	\$9,500	\$18,000
VOWiFi phone handsets – handset to allow free communication within the network coverage area	2	10	15	25
Est'd Price, VOWiFi phone handsets (per bundle)	\$600	\$2,750	\$4,000	\$5,500
Video camera packages – wireless cameras	1	2	4	10
Est'd Price, VOWiFi camera (equipment only, per bundle)	\$1,250	\$2,000	\$3,500	\$8,000

Figure 3. Getting started requires demonstrations and this starter kit approach is the lowest cost / lowest risk way to engage!