

THE MERTON GROUP

Municipal Broadband Networks

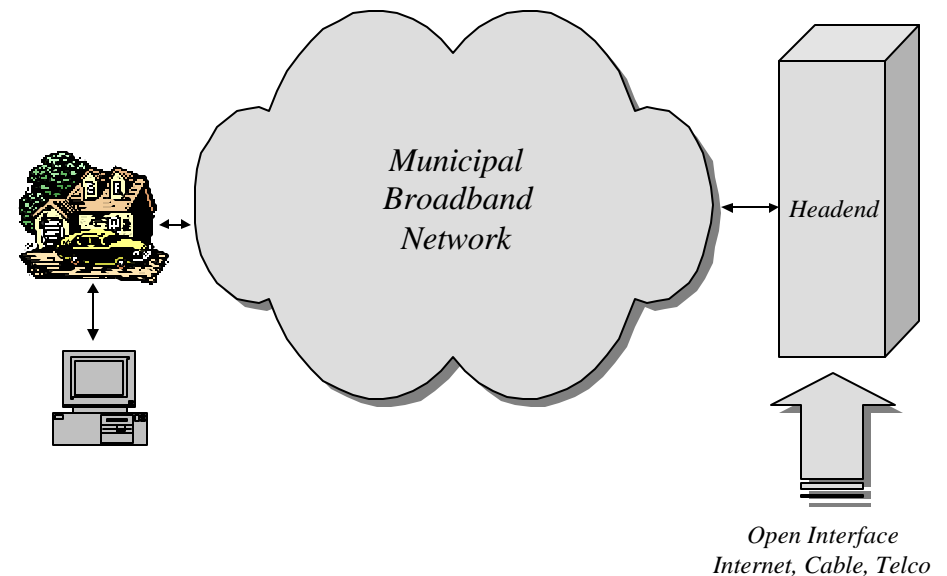
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Overview

- *What are the Services?*
- *Why is it Being Offered?*
- *How Does it Differ?*
- *What is Being Asked For?*

What is Municipal Broadband?

- *Optical fiber network*
- *Fiber connectivity to homes and commercial properties: 100 Mbps service, Fiber to the Home (FTTH)*
- *Integration of school, fire, police, public safety, healthcare*
- *Open access network allowing any service provider/ISP or video provider access.*
- *Merton provides “bit” backbone only; service provider owns end-users*



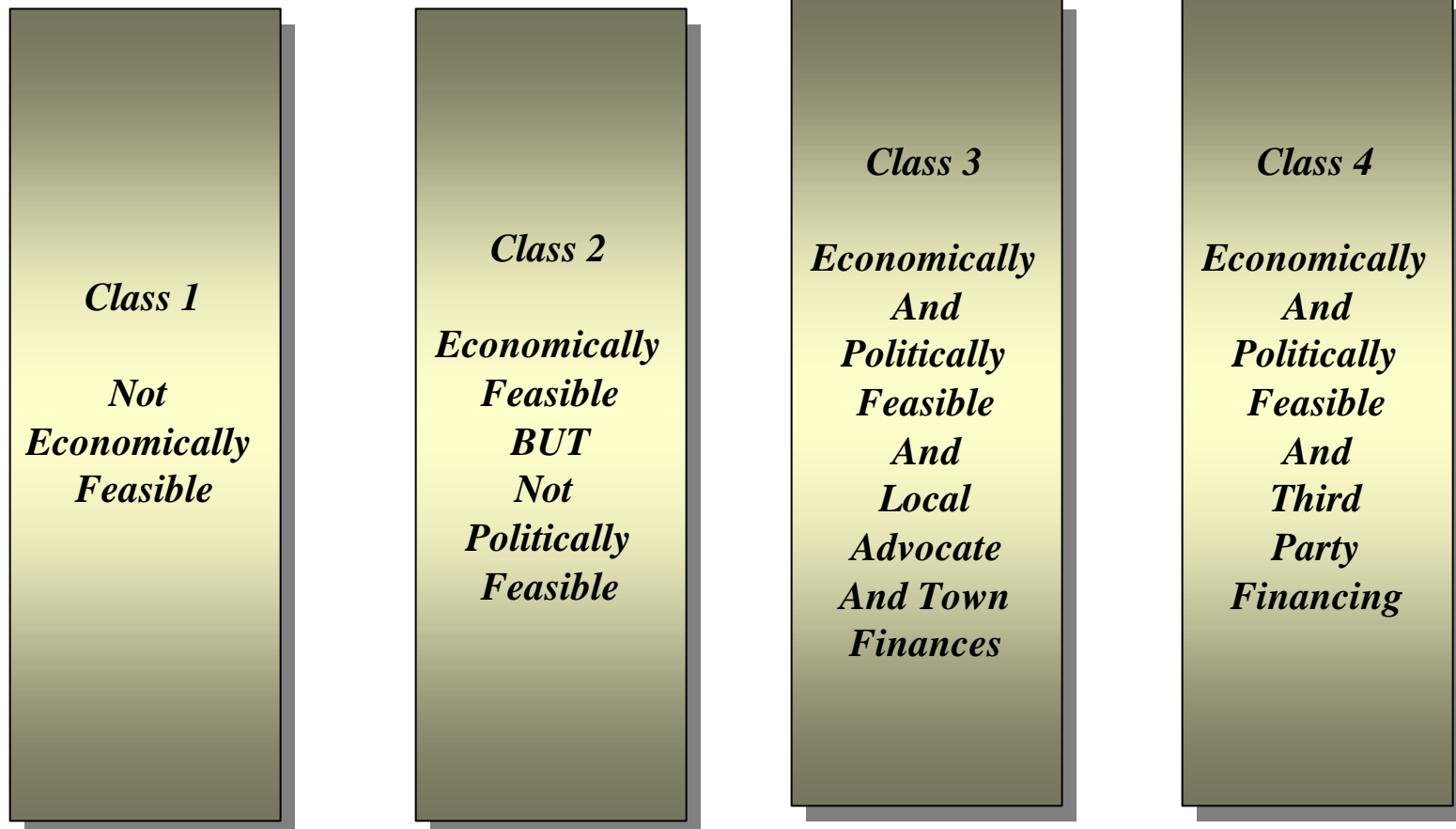
Summary of 26 Towns

- *Some work and some do not*
- *Most have high interest in both broadband and video*
- *In those that “work” the costs per household, HH, are between \$1,500 and \$3,800 per HH*
- *Video is a strong driver*
- *Broadband is still in the eye of the beholder, there is no “killer” application*
- *Financing options are varied*
- *Cable companies, especially Comcast, have strongly opposed any alternative*

Definitions

| <i>Type/Characteristics</i> | <i>Dial Up</i> | <i>DSL</i> | <i>Cable Modem</i> | <i>FTTH</i> |
|-----------------------------|------------------------------|--|--|--|
| <i>Speed</i> | <i>12-56 Kbps</i> | <i>128-512 Kbps</i> | <i>256-1,500 Kbps</i> | <i>10-1,000 Mbps</i> |
| <i>Price</i> | <i>\$10-25 per month</i> | <i>\$25-55 per month</i> | <i>\$45-60 per month</i> | <i>\$40-50 per month</i> |
| <i>Costs</i> | <i>None</i> | <i>Telco must use DSL in CO and home</i> | <i>Cable modems and headend equipment</i> | <i>New fiber, wireless is not ready yet for any true penetration</i> |
| <i>Access</i> | <i>Closed</i> | <i>Closed</i> | <i>Closed</i> | <i>Open: Community and regional networking</i> |
| <i>Usages</i> | <i>Email and web surfing</i> | <i>Email, web access, video down load and other quasi real time apps</i> | <i>Email, web access, video down load and other quasi real time apps</i> | <i>All of others plus real time video, communications, networking etc.</i> |
| <i>Provider Options</i> | <i>Multiple</i> | <i>ILEC and resellers. Only ILEC has infrastructure unless facilities based CLEC exists.</i> | <i>CATV only</i> | <i>Town, third party, incumbent</i> |

Classes of Municipalities



Fiber-to-the-Home Services






*Video Services: Standard
And enhance video services
With HDTV digital TV
entertainment*

*Telephone Services: Access
To multiple telephone
services providers,
offering choice
And cost savings*



*Broadband Internet Access: 100 Mbps or greater; A secure, ultra high
speed network for family, municipal, medical, educational, public safety.*

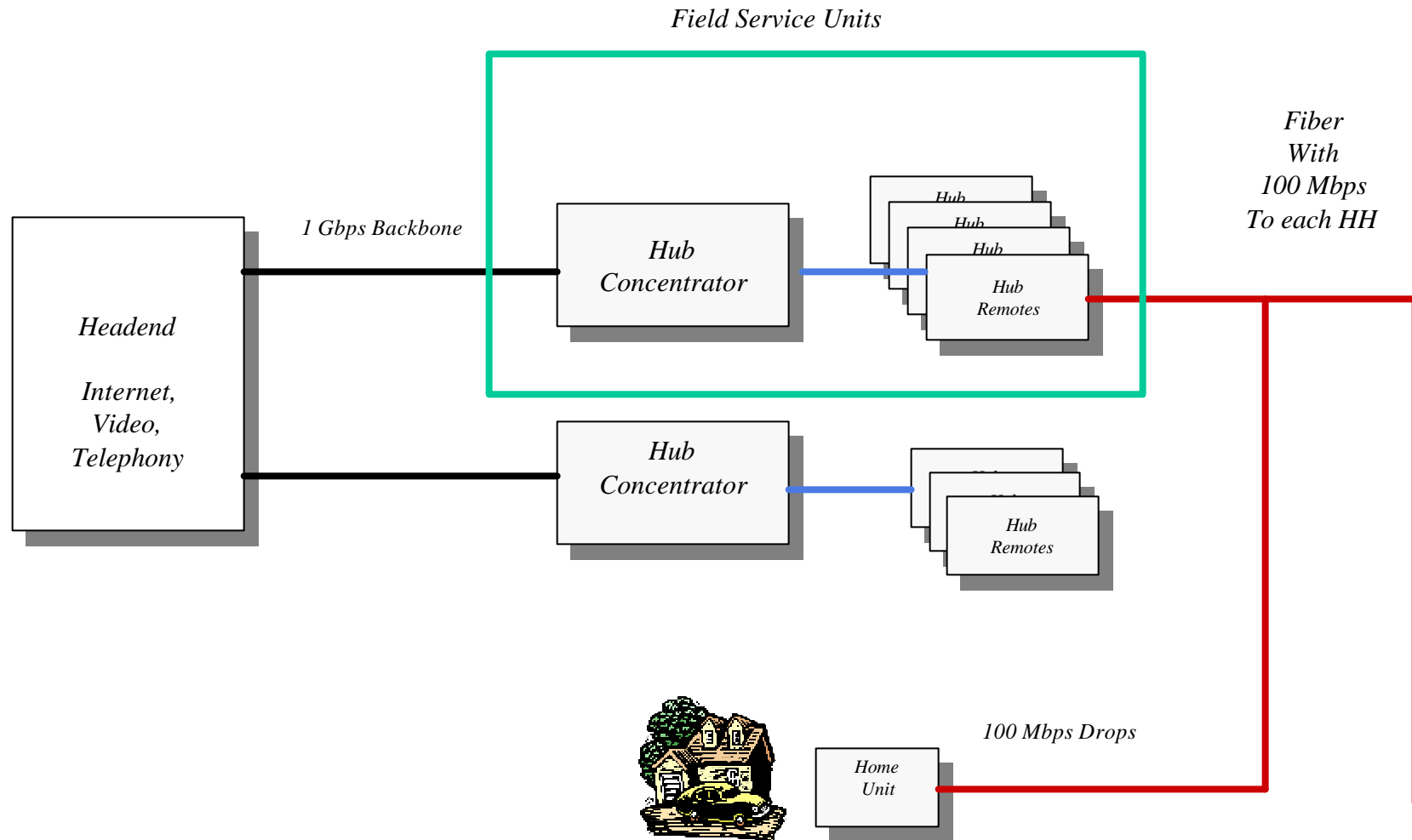
Current Options for Broadband

| | <i>Strengths</i> | <i>Weaknesses</i> |
|--|--|---|
|  | <ul style="list-style-type: none"> ✍ <i>Incumbent network provider</i> ✍ <i>“Owns” all of the local customers</i> | <ul style="list-style-type: none"> ? <i>High borrowing cost of capital</i> ? <i>Unbundling of broadband poses business risk to existing services</i> ? <i>Significant cuts in budget</i> ? <i>Politically complex</i> |
|  | <ul style="list-style-type: none"> ✍ <i>Local CATV presence</i> ✍ <i>“Owns” the CATV customer</i> | <ul style="list-style-type: none"> ? <i>Very bad cash position</i> ? <i>Need to upgrade cable plants to support two-way broadband in outlying areas</i> |
|  | <ul style="list-style-type: none"> ✍ <i>Some broadband in larger cities and towns</i> ✍ <i>Some backbone infrastructure</i> | <ul style="list-style-type: none"> ? <i>Limited to no financial capability</i> ? <i>Serious negative cash flow</i> |
| <p style="text-align: center;">Municipal Network</p> | <ul style="list-style-type: none"> ✍ <i>Capable of raising financing at low cost of capital</i> ✍ <i>Capable of local and targeted deployment</i> ✍ <i>No local regulatory problems</i> | <ul style="list-style-type: none"> ? <i>No network operational skills, but can be easily outsourced</i> ? <i>No infrastructure support capabilities, but can be easily outsourced</i> |

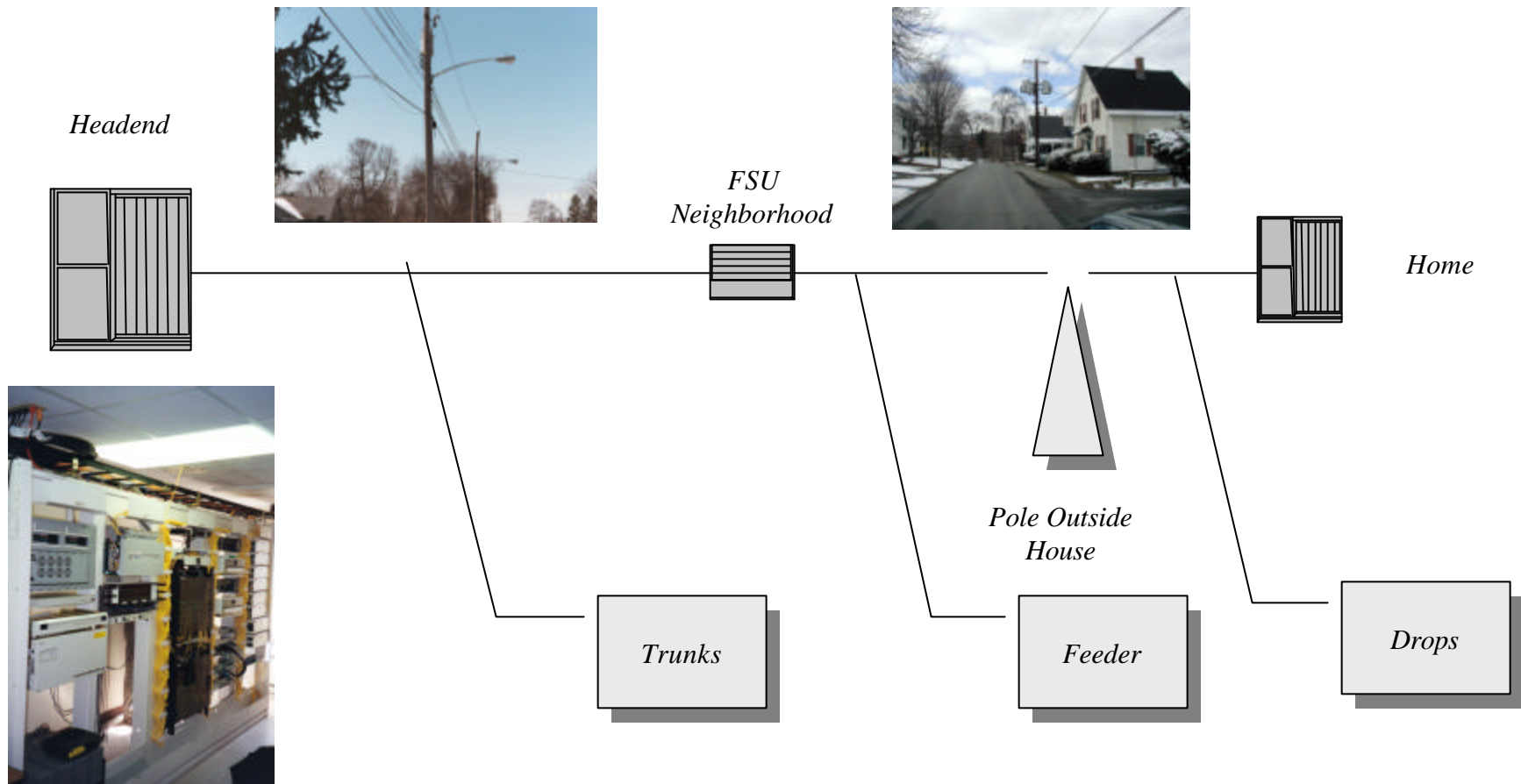
What are the Services?

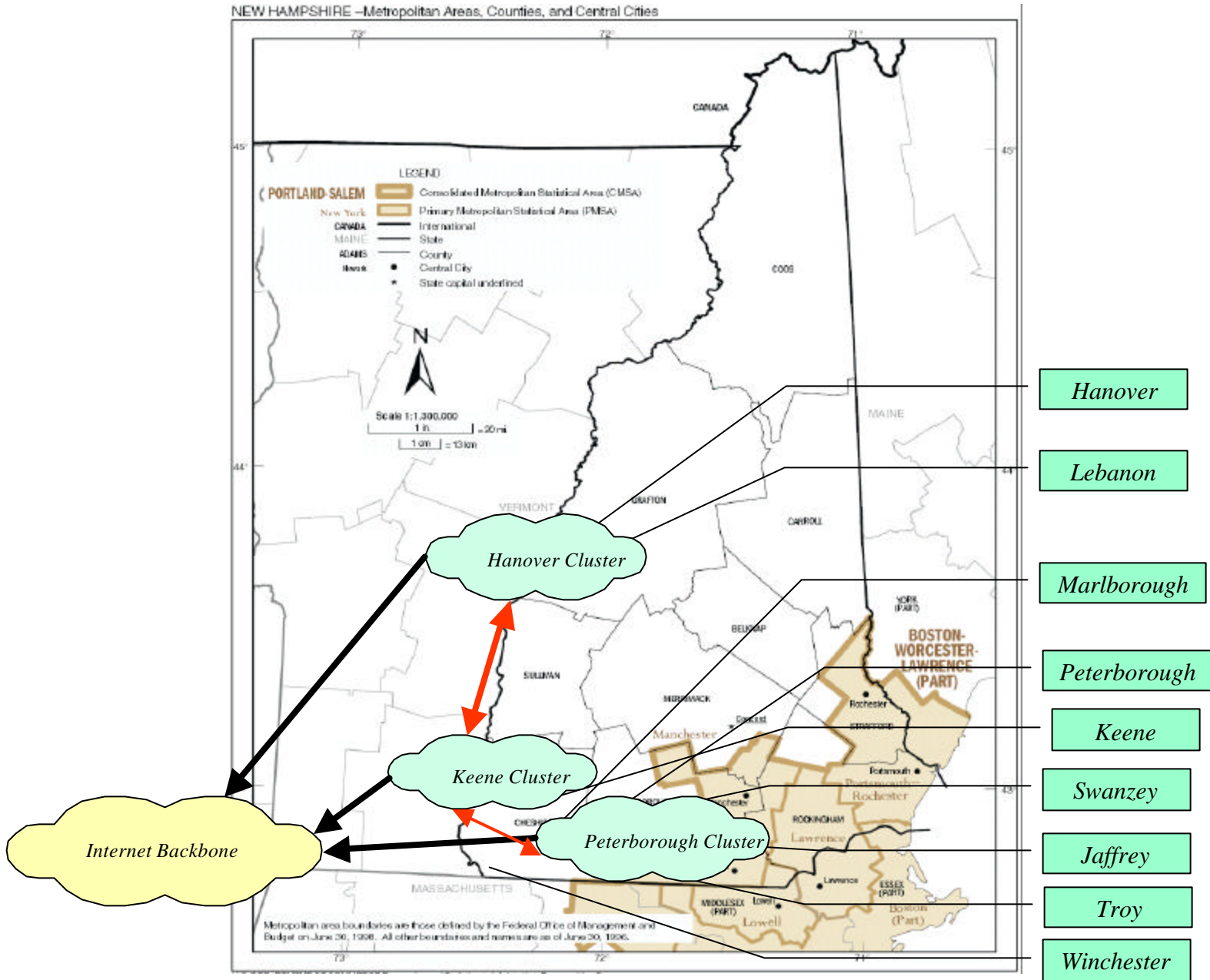
- *Fiber to the Home, FTTH. Fiber cable to each subscribing home or location.*
- *Provides Broadband Internet, Video (analog and digital), etc*
- *Up to 1 Gbps capacity with typical home interconnect being 100 Mbps. Fiber has capability to provide near infinite capacity, Terabits per second.*
- *Offered to All of Hanover*
- *Includes Network for town, schools, public safety, libraries*

Network Elements



Network Elements





Why is it Being Offered?

- *Market research had shown high demand*
- *Working with Valley Net showed real customer base and acceptance*
- *Working with town showed viability and interest*
- *USDA provides 80% financing, Merton does rest, first time US Government provides financing for New England Infrastructure*
- *No costs to town, does not require any town financial commitment*

What is Being Asked For?

- *Merton offering to town ownership/membership interest in Hanover Broadband Network, LLC, at no cost*
- *Town would have “seat at the table” and access to details of build-out and operations*
- *Town would have direct voice in deployment and integration*
- *Merton, based upon RUS financing, will proceed. Decision deadline is October 15, 2003*

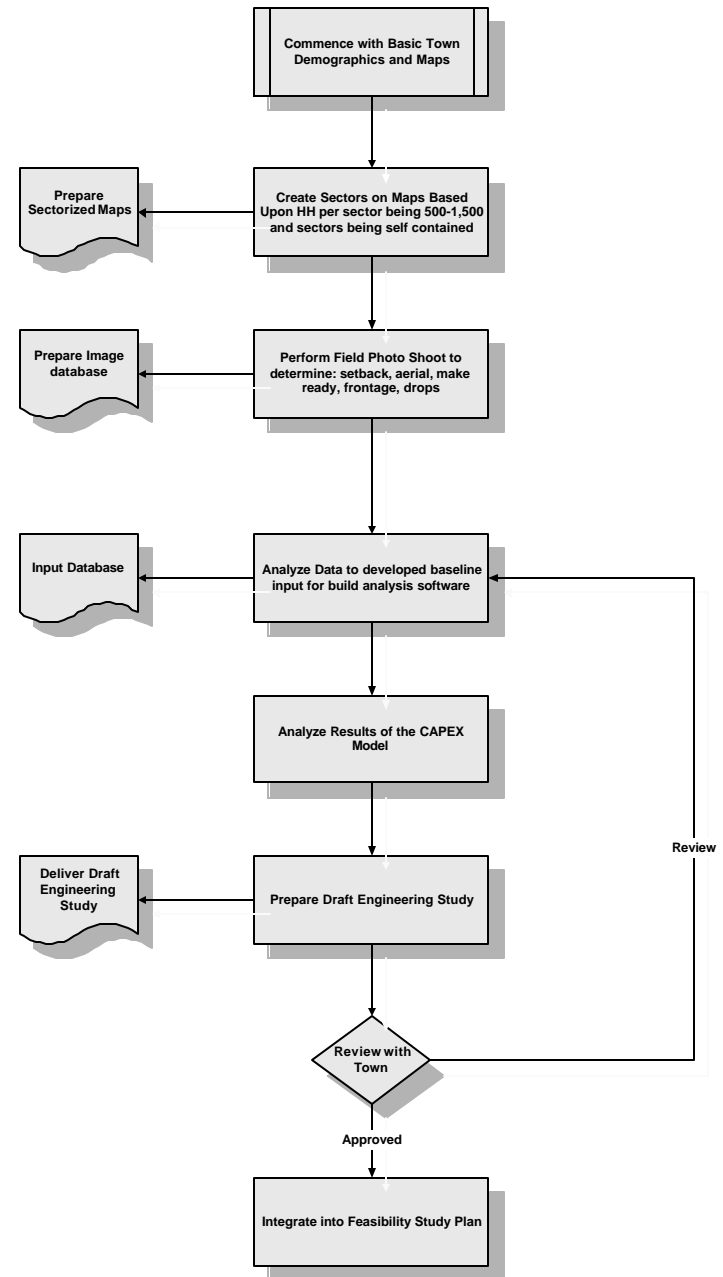
Capital Costs Estimates

| <i>Capital Cost</i> | <i>Assumption</i> | <i>Result</i> |
|--|---|--------------------------------|
| <ul style="list-style-type: none"> • <i>Fiber Installation, New Trenching: \$50,000 per mile</i> • <i>Fiber Installation, Existing Conduits/ Aerial: \$20,000 per mile</i> | <i>10%-90% split between new trenching and existing conduits/aerial</i> | <i>\$23,000 per mile</i> |
| <i>Fiber Cost: \$150 per mile per strand</i> | <i>48 strands on backbone 2 strands per home drop</i> | <i>\$7,800 per mile</i> |
| <i>Optical equipment and buried installations: \$7,000 per mile</i> | <i>Gigabit Ethernet Network architecture</i> | <i>\$7,000 per mile</i> |
| <i>FTTH drop and home electronics: \$900 per home</i> | <ul style="list-style-type: none"> • <i>Home has 100 foot frontage, or 60 homes per mile</i> • <i>30% penetration of homes, or 18 homes per mile serviced</i> | <i>\$16,200 per mile</i> |
| <i>TOTAL</i> | | <i>\$54,000 per mile</i> |
| <i>TOTAL per Home</i> | <i>18 homes per mile serviced</i> | <i>\$3,000 per Home</i> |

Feasibility Study

- *Phase 1: Engineering Study*
 - *Market Study*
 - *Financial Study*
 - *Bonding Study*
 - *Regulatory Study*
- *Phase 2*
 - *RFP*
 - *Bond Discussions*
 - *“Socializing”*

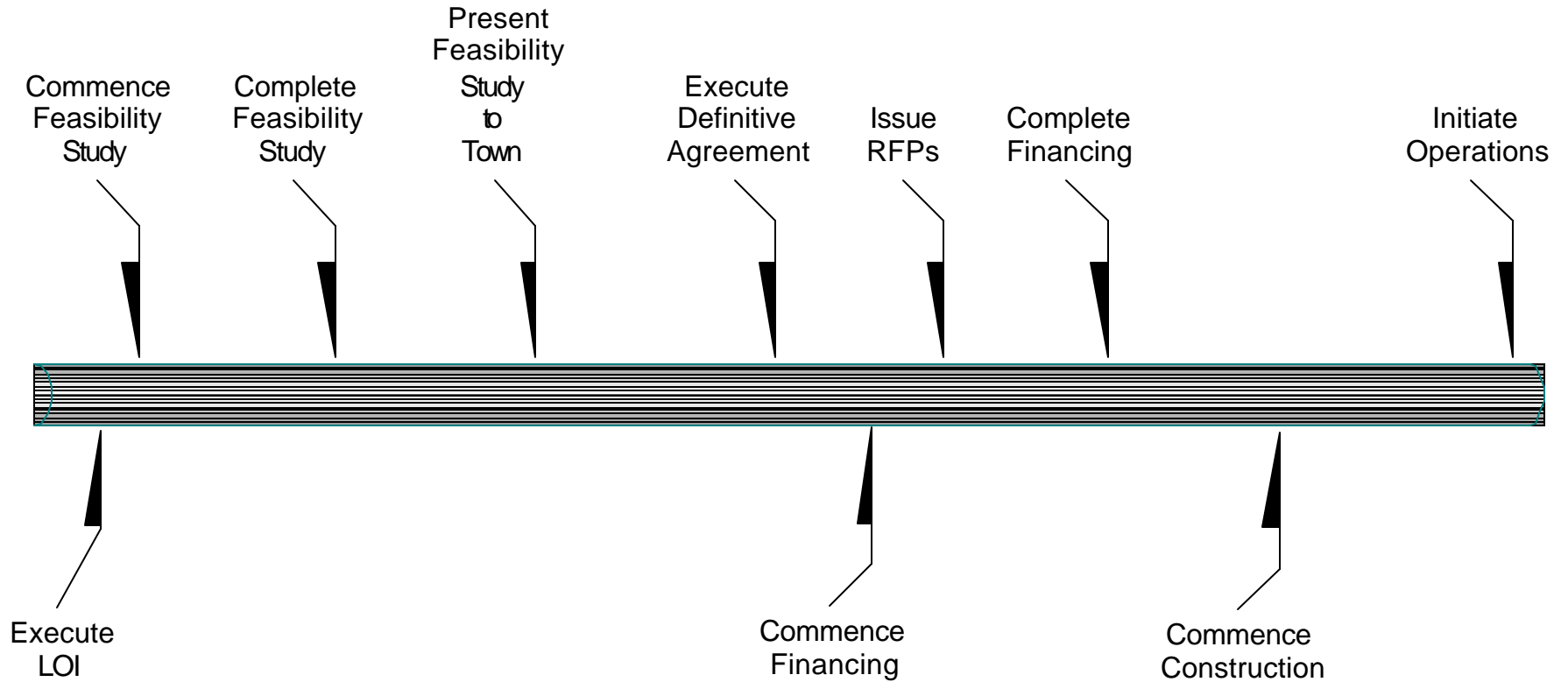
Engineering Methodology



Poles



Schedule



What Does Merton Do

Municipal Broadband Planning, Financing, Buildout and Operations

Project Management
• *Feasibility & Planning*
• *Financial Management*
• *Installation Management*

Operations Support
• *Network Operations Center (NOC)*
• *Backbone/backhaul Support*

Sales Support
• *ISPs, CLECs*
• *Cellular Carriers*
• *Network Service Providers*
• *Enterprises*
• *Video Providers*
• *Telco*

Merton also Provides for all Financing

The Merton Group

Who we are:

- *Merton Group is a financial and operations management company focusing on development of enhanced Municipal Broadband Networks and services infrastructures*
- *Merton provides turnkey financial and operational advisory, management, and operations support facilities and services to finance, install, and operate fiber-optic broadband*
- *Merton is a “service integrator”*
- *Merton Principals are former executives from NYNEX/Verizon and CATV (Warner, now AoL Time Warner) and Goldman Sachs*

Our past experiences:

- *Financed, constructed and operated largest IP fiber network in Central Europe*
- *Structured and executed over \$1 billion of municipal bond financings*
- *Constructed and operated first Cellular network in New York and New England*
- *Constructed and operated multiple Operations Support Systems in US and Europe*
- *Initiated and successfully achieved regulatory change for interconnection from FCC*
- *Financed, constructed, and operated one of first CLECs in New England*
- *Successfully raised over \$200,000,000 in financing for start ups*
- *Successfully performed turn around operations on over two dozen companies*