



Bowdoinham

ConnectMe Planning & Design

A Multi-Phase Public/Private Approach

- to meet the needs of under-served residents
- & expand broadband alternatives throughout Bowdoinham

Presentation to Select Board – 1.29.19

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Scope of Work

- Focus on a design for fiber optic network in the Town of Bowdoinham, that will be funded and built out over multiple years.
- Minimum standard (consistent with Maine's new Broadband Action Plan - June 2018)
 - Target -- 100 x 10 Mbps is the new overall broadband target
 - Unserved – defined as less than 25 x 3 Mbps
 - Goal – future capability of 1 gigabit (up & down) or greater if desired.
- Plan and design will include:
 - middle mile network mapping,
 - street level mapping,
 - multi-year construction plans and cost estimates
 - business model (multi-year estimated annual revenue & operating costs)

LCI Project Team

- Executive Team Members:
 - Rick Manning, VP Business Development & Engineering
 - Alan Hinsey, Director of Marketing & Sales
 - Seth Robertson, Controller
- Engineering/Network Design Team Members:
 - John Pfahler, IT Manager
 - Benjie Ladabour, Network Engineer
 - Jim Corbett, Network Engineer

Planning & Design Project Phases

- Project Initiation with LCI Team & Bowdoinham staff
- Review and refresh as needed previous survey data collected
- Fiber Transmission Options research
- Backhaul and Middle Mile design work
- Street Level Fiber distribution strategy and mapping
- Develop construction plans and costs estimates
- Sustainable Business Model analysis
- Meetings with Bowdoinham officials:
 - Numerous phone and onsite meetings during design phase
 - Draft document review with Town Mgr. Econ Devel Dir & Sel. Bd Chair
 - Met with Dresden Broadband Cmte, Bowdoinham staff & LCI
 - Met with Heather Johnson (DECD Commissioner designate), Brooke Johnson (ConnectME), LCI & Bowdoinham staff

Fiber Transmission Options:

Short Term:

1. **Use existing Power Distribution Corridors** - Not an available option
2. **Collocate in Consolidated CO (Richmond) – 10 Gig Lit Service**
 - \$4,000/mo + \$700/mo Colo cost
 - Would only provide one path thru Bangor (not redundant)
3. **Collocate in Consolidated CO (Richmond) – 1 Gig Lease Internet**
 - \$2,316/ mo (1 yr term) + \$700/mo Colo cost -Cheaper if multi-yr terms
 - Lease 1 Gig for service to Unserved areas while provider is building own fiber to region

4. **Collocate in Consolidated CO (Richmond) – 1 Gig Lit Service**
 - \$1,848/mo + \$700/mo Colo cost - Cheaper if multi-yr terms
 - Would provide one path to our 10 gig NNI (Network to Network Interface) in Wiscasset

Long Term: Provider build transmission – thru Dresden to Richmond CO

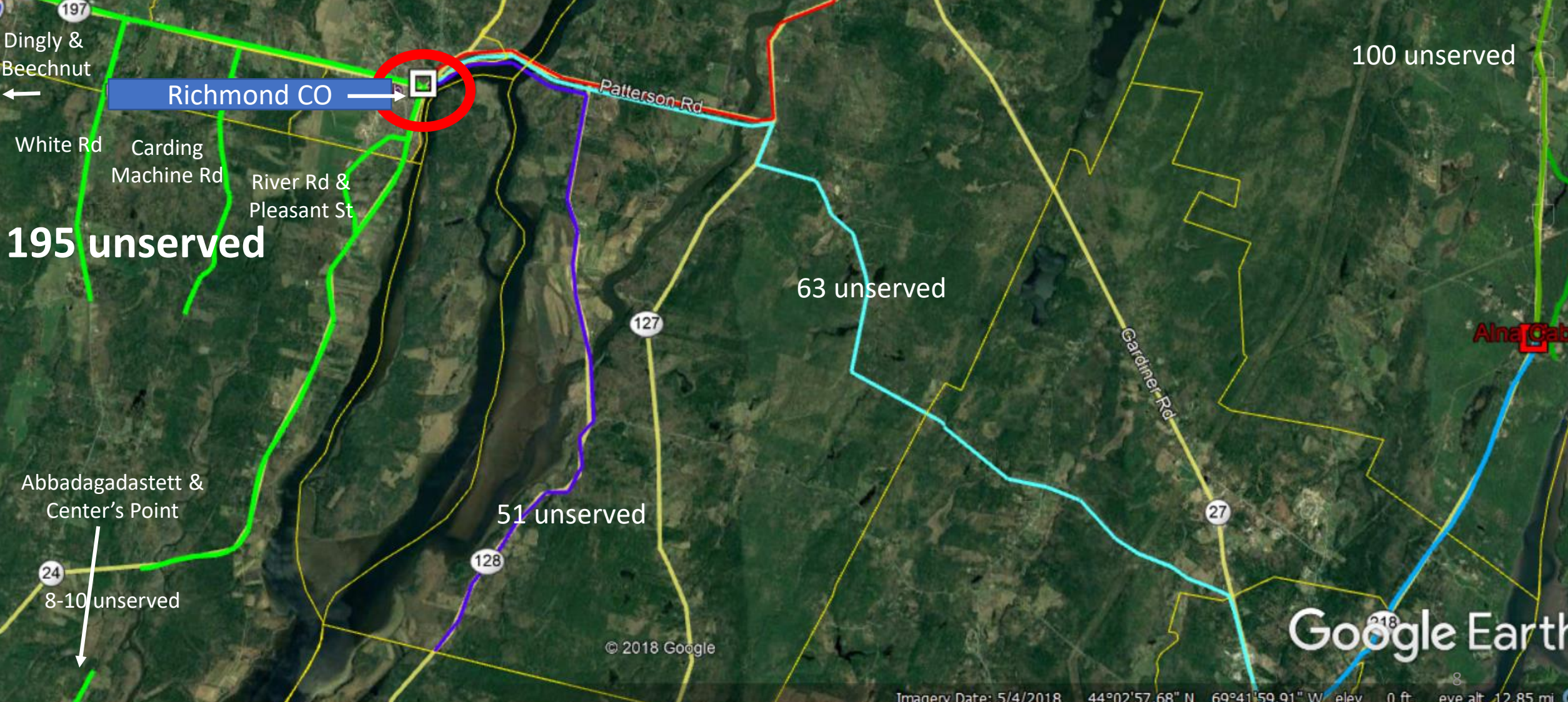
3 Options being considered –

- Rte 218 Alna – thru Dresden to Richmond CO
- Rte 27 Wiscasset – thru Dresden to Richmond CO
- Rte 128 Woolwich – thru Dresden to Richmond CO

LCI building direct Fiber transmission

1. Rte 218 Alna – thru Dresden – to Richmond CO
 - Approx \$547,000 (\$187,000 + \$360,000)
 - 320 homes passed
 - 120 homes ConnectMe eligible
2. Rte 27 Wiscasset – thru Dresden – to Richmond CO
 - Cost unknown at this time
 - 63 known unserved in Dresden
3. Rte 128 Woolwich – thru Dresden – to Richmond CO
 - Cost unknown at this time
 - 51 known unserved in Dresden

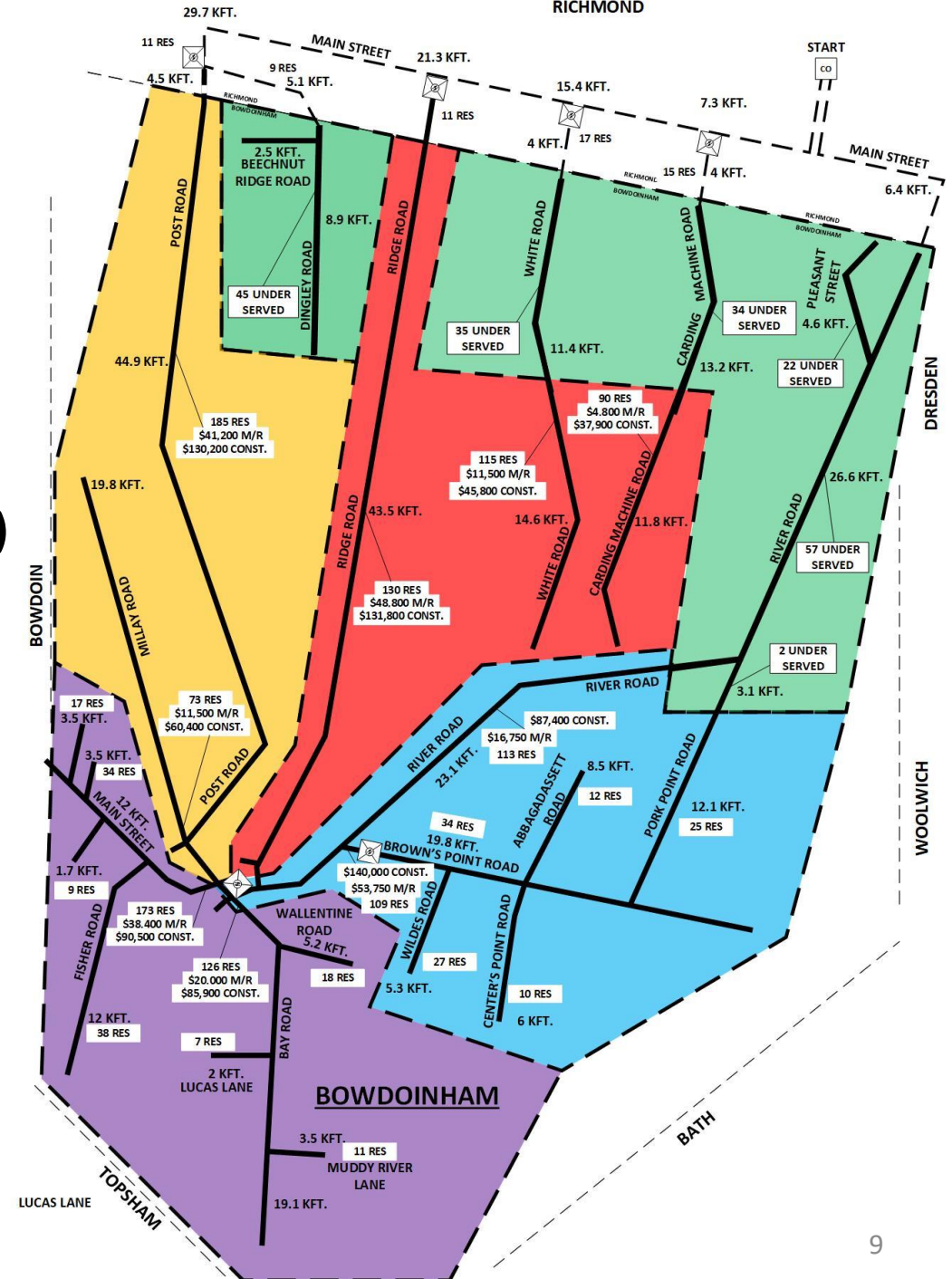
LCI – 3 Direct Fiber Build Options to Explore



Google Earth

Local Fiber Distribution Options

- Richmond Main St feeder (220 homes)
- GREEN: ConnectMe areas
 - Dingley Rd + Beechnut Ridge (45 homes)
 - White Rd (35 homes)
 - Carding Machine Rd (34 homes)
 - River Rd + Pleasant St (81 homes)
- Yellow: Post Rd area (258 homes)
- Red: Ridge Rd area (335 homes)
- Blue: Brown's Pt Rd area (631 homes)
- Purple: Bay Rd area (433 homes)



Fiber Local Distribution Bld Cost

Area	# Unserved	# Served	Make Ready & Build Cost	Cost per Homes Passed
ConnectMe areas*				
Dingley (Beechnut)	45	0	\$164,428.00	\$2,442.93
White Rd	35	0	\$ 86,730.00	\$2,376.86
Carding Machine	34	0	\$ 83,190.00	\$2,550.88
River Rd (Pleasant)	81	0	\$109,032.00	\$2,029.98
Yellow (Post Rd area)	0	258	\$243,300.00	\$ 943.00
Red (Ridge Rd area)	0	335	\$283,600.00	\$ 847.00
Blue (Brown's Pt area)	0	631	\$297,900.00	\$ 472.00
Purple (Bay Rd area)	0	433	\$234,800.00	\$ 543.00
Total Fiber Bld cost	195	1,852	\$1,502,980.00	\$ 743.25
		\$900/install	\$1,842,300.00	
		Total FTTP Cost	\$3,345,280.00	



*ConnectME area builds include build cost for Richmond Main St feeder build

Local Fiber Distribution & New Customer Install Cost

Bowdoinham ConnectMe								
Roads	Unserved	Served customers	Feet	Fiber Count	Fiber Build/ft	Make Ready/ ft	Splicing per ft	Total
River Rd (& Pleasant St)	81	100	40,700	144	\$3.30	\$0.39	\$0.35	\$164,428.00
Carding Machine Rd	34	40	24,500	96	\$2.80	\$0.39	\$0.35	\$86,730.00
White Rd	35	40	23,500	96	\$2.80	\$0.39	\$0.35	\$83,190.00
Dingley Rd (& Beechnut Ridge Rd)	45	40	30,800	96	\$2.80	\$0.39	\$0.35	\$109,032.00
Fiber build cost	195	220	119,500					\$443,380.00
New customer install cost	98	55						\$137,250.00
							TOTAL Project Cost	\$580,630.00

Distribution Build Costs assumptions	
Fiber count 144	\$3.30 perKft
96	\$2.80 per ft
48	\$2.40 per ft
Splice & enclosures: \$41,445/119,500ft =	\$0.35
Make Ready: \$47,000/119,500ft =	\$0.39
New Install cost assumptions	
Install cost (ONT/Drop/Labor) per unit	\$900.00
50% take unserved - 25% take served	152.5

Project Funding Option:		
Bowdoinham (TIF)	\$350,000	60.3%
ConnectME	\$100,000	17.2%
LCI	<u>\$130,630</u>	<u>22.5%</u>
Total	\$580,630	100%

ConnectME
 - Avg Cost
 per Unserved
 Home passed
\$ 512.82

LCI Business Model and Assumptions – Short Term (1-3yrs)

LCI Business Model - 1 Gig Lit Lease and Collocation in Richmond CO				
Take rate ConnectME (Unserved)	50%	97.5	Total take	152.5
Take rate (Served)	25%	55		
Minimum product 50 x 10Mbps	\$49.95			
1 gig LIT - MRC cost (12 mo term)	\$2,548.00	(includes \$700./mo colo fee)		
LCI's annual cost - 1 Gig	\$30,576.00			
LCI CoLo - NRC	\$1,500.00			

LCI Net Revenue

Annual: \$60,833	Monthly: \$5,069
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LCI Pre-Sell Goal (prior to fiber build):

50% of take rate 76.25 Units

LCI Broadband Product Options



- 50 x 10 Mbps - **\$49.95/month**
- 100 x 20 Mbps - **\$69.95/month**
 - \$100 install fee
 - 3 yr Price Lock Agreement

Phone - **\$19.95/month**

- 1 residential line
- 1,000 mins long dist. (US & Canada)
 - Call waiting, Caller ID, Call Forwarding
 - Keep current phone #



Tier 1

- 50 hrs DVR & 1 Stream **\$79.99/month**

Tier 1 - *Family Plan*

- 50 hrs DVR & 3 Streams **\$85.99/month**
 - App- based Live Streaming TV
 - 40 popular cable channels in Tier 1
 - including all Locals, MPBN, NESN, Sports Boston
 - All HD
 - Additional Channels available in Tier 2 package
 - Premium Channels available (HBO, Showtime, etc)
 - Additional Streams & DVR hrs. available

Future funding – ConnectMe & RUS

➤ **ConnectME – next round: \$475,000**

- probably \$400,000 for Infrastructure – statewide)
- Apps available end of Feb – decisions announced in May

➤ **ConnectME – FY 2019-2020: Unknown at this time**

- But ... 2 Broadband bonds are in front of Legislature (would be administered by ConnectME)
 - a \$20 mil bond & a \$100 mil bond – maybe one will make it to voters in Nov
 - Also – there may be direct budget funding to ConnectME to increase it's grant program
(even if bond funds do not come through)

➤ **RUS (Rural Utilities Service) of the USDA**

- federal grants, loans, and grant/loan combos
- \$600 mil “e-Connectivity” broadband pilot program nation-wide 2019

Next Steps for Bowdoinham

- Make decision re Spring 2019 ConnectME application process.
- If Bowdoinham decides to go forward with a ConnectME application
 - & IF they decide to partner with LCI, we will need to begin the joint application process as soon as possible.
- Bowdoinham (town officials, businesses, residents, etc)
 - Will need to actively support the joint ConnectME effort.
 - Assist with Pre-sell marketing
 - Assist and support LCI's efforts to secure RUS funding
 - Support LCI's efforts to secure other ConnectME funding that will allow LCI to build fiber transmission directly to the region.