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Wildwood Fiber Strategy

Rural Internet Access Committee

May 22, 2019



Discussion Topics

- FTTP cost estimates
 - Role of Ameren
 - High, medium, and low density areas
- Range of potential approaches
- Cost of Ownership
 - Dark FTTP Huntsville Model
 - Middle Mile
- Next steps and schedule



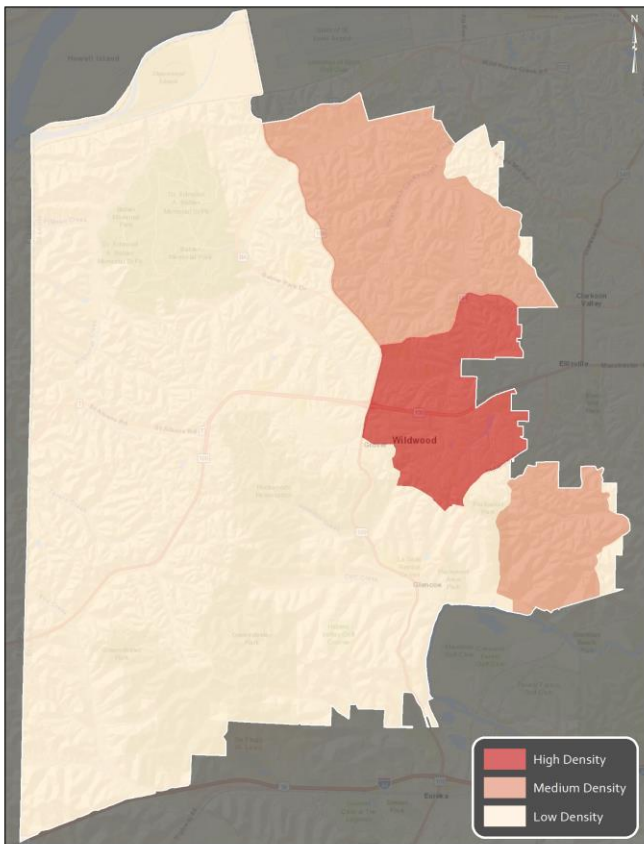
FTTP Cost Estimate



Role of Ameren

- Does not have a need for FTTP
 - Limited drivers for fiber beyond distribution substations
- Supportive but Ameren needs to follow policies and regulations
- Positioned to provide long-haul transport
- Existing fiber on transmission does not support FTTP
 - Adding mid-span splice points not practical
- Pole attachments
 - Attacher must be registered with the Missouri Public Service Commission
 - Ameren attachment fee is regulated
 - Ameren required to charge pole make ready expenses

Segments (premises density)



	High	Medium	Low
Street Miles	59.33	79.88	259.67
Total Passings	5,904	3,544	3,473
Average Passings per Mile (PPM)	99.51	44.37	13.37
Median PPM	101.82	46.51	13.33

FTTP and Backbone Costs

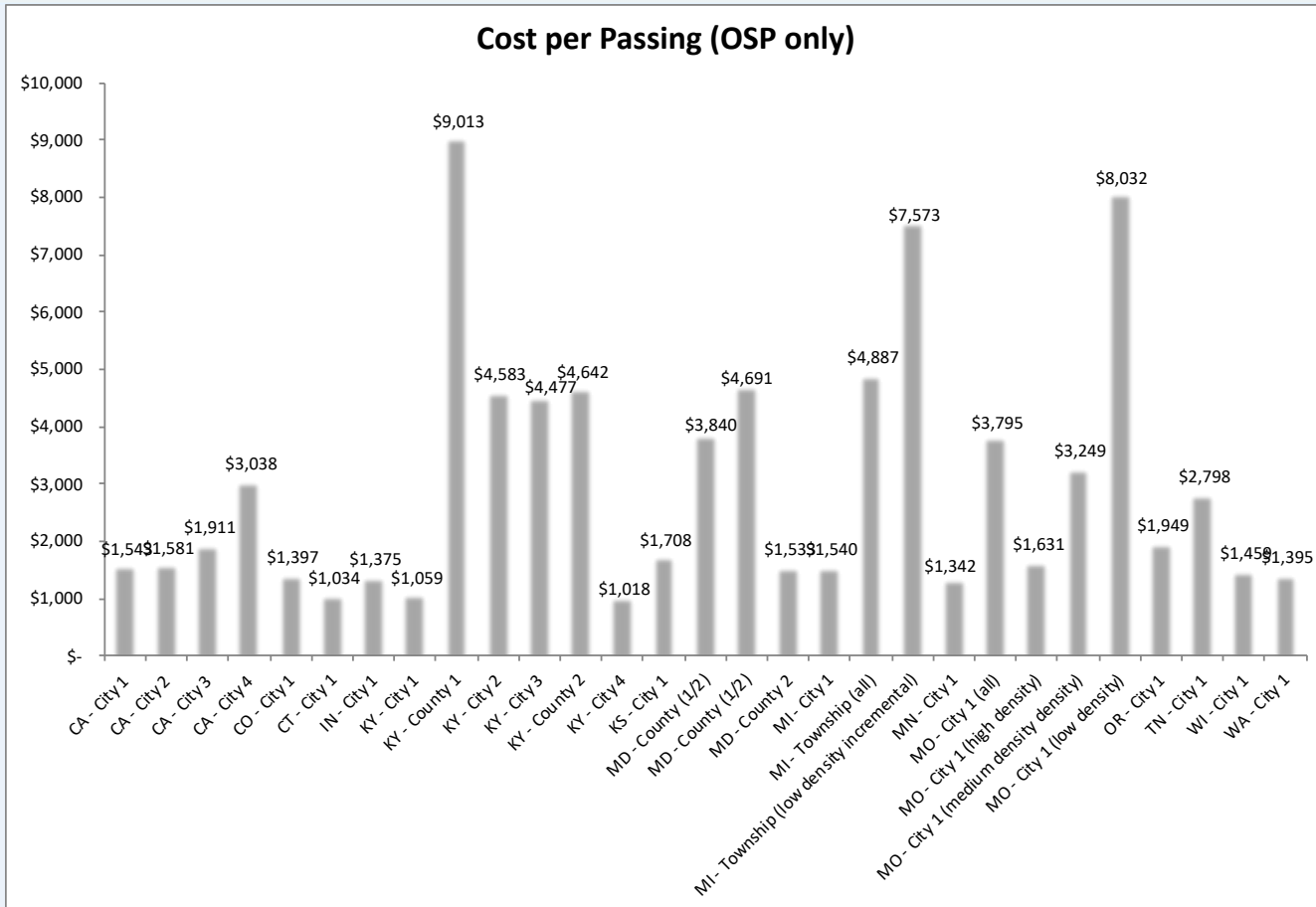
Phase	Distribution Plant Mileage	Total Cost (without drops)	Passings	Cost per Passing (Distribution Only)	Cost Per Plant Mile (Distribution Only)
High Density	63	\$8,190,000	5,900	\$1,390	\$131,000
Medium Density	84	10,077,000	3,540	\$2,840	\$120,000
Low Density	256	26,458,000	3,470	\$7,620	\$103,000
Backbone	Shared Routes (116)	4,315,000	-	na	na
Total	403	\$49,040,000	12,920	\$3,800	\$120,000

Estimated Lit FTTP Cost

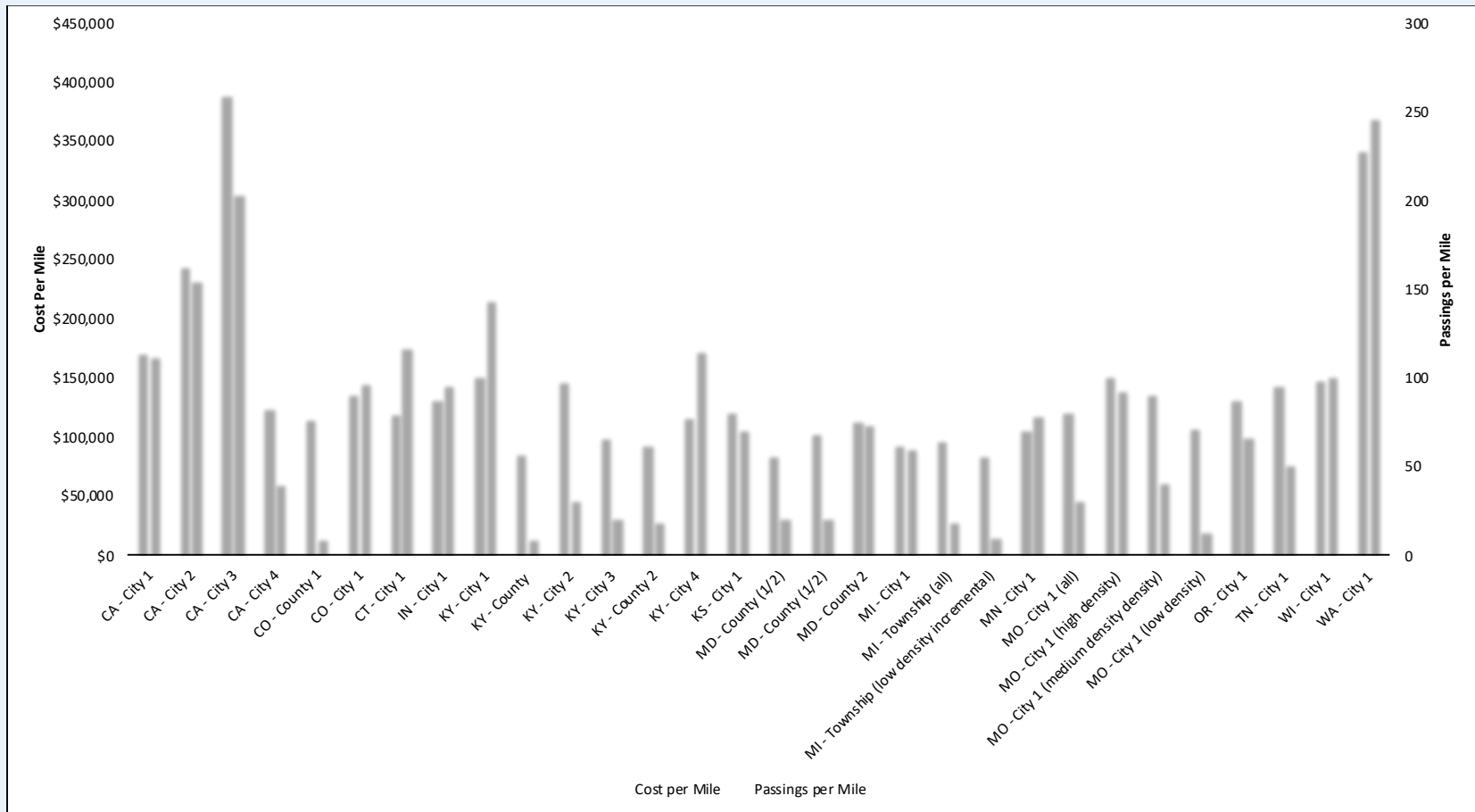
Cost Component	Total Estimated Cost
OSP	\$49.0 million
Central Network Electronics	2.3 million
FTTP Service Drop and Lateral Installations	10.0 million
CPE	2.9 million
Total Estimated Cost:	\$64.2 million

Above estimate assumes a 35 percent take rate

FTTP Cost Comparison



FTTP Cost Comparison





Range of Potential Approaches

FTTP Approaches

FTTP Approach	Capital Expense	Impact on Broadband Availability	Likelihood Financial Success	Likelihood of Meeting Service Goals
<p>A: City Offers Retail Services In addition to the FTTP network, the city owns and operates the network electronics and runs a business providing retail services</p>	\$64.2 million citywide (or \$31.4 for low-density areas), at a 35 percent take-rate including drop costs	High	Low	High
<p>B: City Enables Open Access Same as A, except the City does not provide retail services; rather, it enables open-access services to approved ISPs</p>	\$64.4 million citywide (or \$31.6 for low-density areas), at a 35 percent take-rate including drop costs (includes addition of management software)	High	Low	Moderate
<p>C: City Enables Private Open Access Provider Same as B, except that a third-party owns and operates the electronics and enables open-access services to ISPs</p>	\$49.0 million citywide (\$30.8 million, low-density only) assuming City does not pay drop costs	High	Low	Moderate
<p>D: City Leases Dark FTTP The City only leases the dark FTTP to a private provider who owns and operates all electronics and provides retail service</p>	\$49.0 million citywide (\$30.8 million, low-density only) assuming City does not pay drop costs	High	Low	Moderate

Middle Mile or Incentive Approached

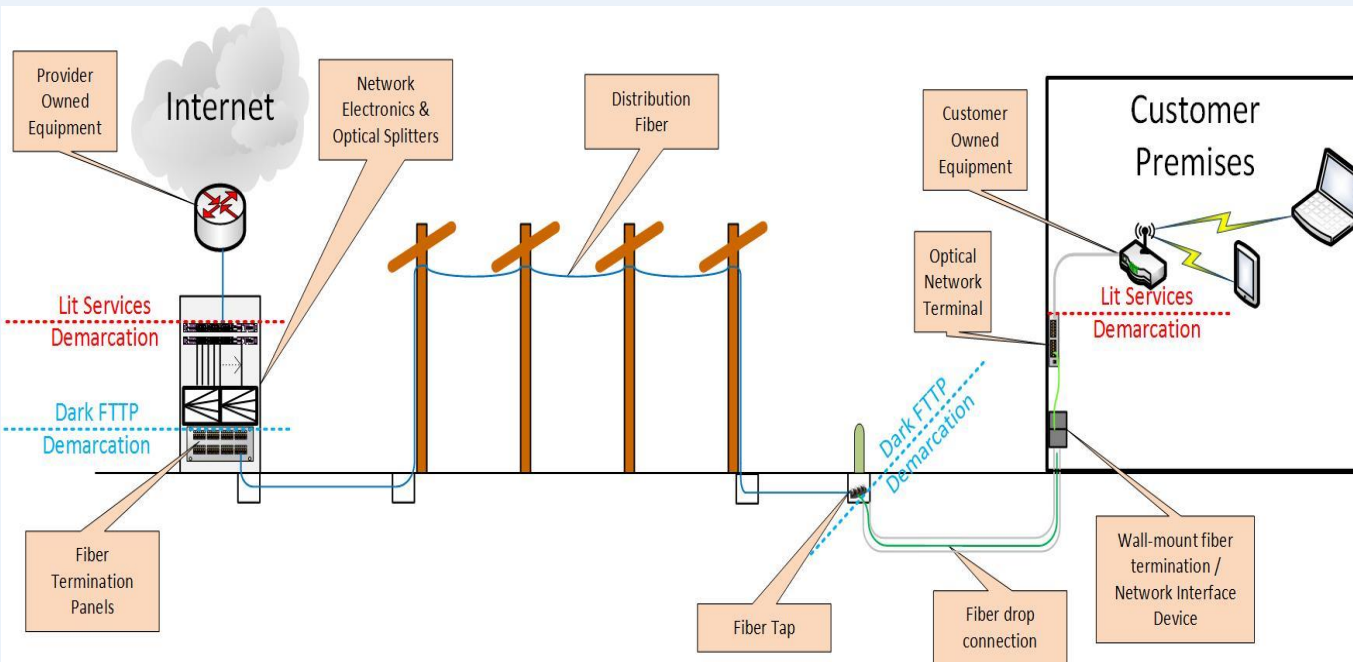
Approach		Capital Expense	Impact on Broadband Availability	Likelihood of Financial Success	Likelihood of Meeting Service Goals
Middle Mile Fiber	E. City Leases Dark Middle Mile City provides access to middle-mile fiber to third parties. The third parties own and operate last mile infrastructure—OSP and electronics—and provide retail services	\$4.3 million	Low to Moderate	Low to Moderate	Low to Moderate
Incentives	F: City Offers Cash Incentives The City issues an RFP offering funds for any ISP willing to provide coverage guarantees with broadband service. Spectrum would be expected to respond, others might	\$2.5 million to \$3.5 million (estimate based on discussion with Spectrum)	Moderate to High	Moderate	Moderate
	G. Expand Wireless Assets The City expands placement of poles and other assets for WISPs and streamlines permitting and other processes for underground fiber placement	Minimal	Low	High	Low
	H: Continue on Same Path The City supports pole additions as requested and streamlines permitting and other processes for underground fiber placement	Minimal	Low	High	Low



Cost of Ownership

Dark FTTP – Huntsville Model

Dark FTTP – Huntsville Model



- **City**
 - Installs FTTP OSP
 - Maintains FTTP OSP
- **Partner**
 - Installs drops
 - Installs electronics
 - Sells services



Dark FTTP – Wildwood Low Density

- Investment \$29.01 million
 - Includes test equipment and fiber management software
 - Includes 55 percent of middle-mile
- Initial borrowing \$31.33 million
- Debt service payment of \$2.39 million per year
- Operating & maintenance expenses of \$450,000 per year
- Depreciation reserve of \$29,360 per year

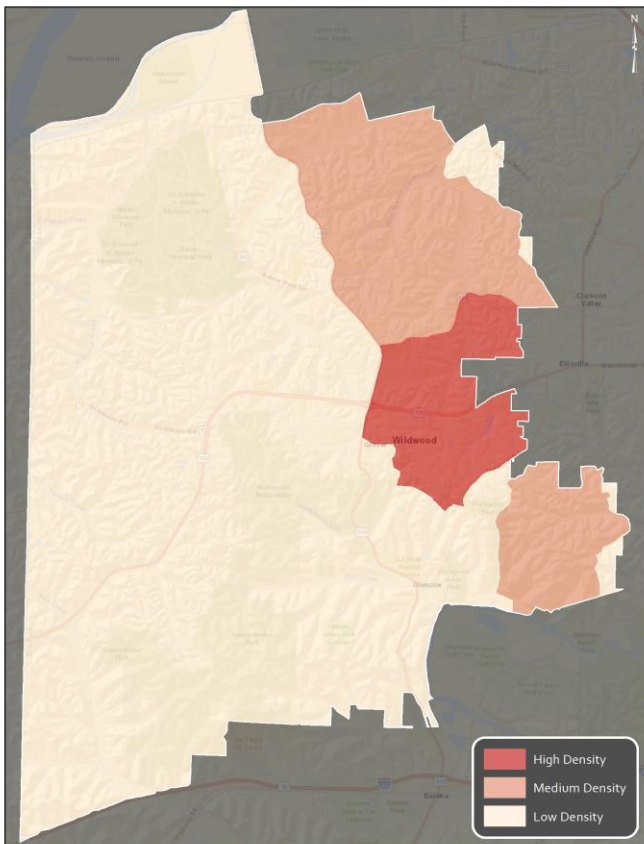


Dark FTTP – Wildwood Low Density

- Required fee in order to maintain positive cash flow
 - \$69.00 per passing per month
 - Does not include drop cost
 - Does not include service fees

Google pays Huntsville Municipal Utilities an equivalent of \$7.50 per passing per month

Segments (premises density)



	High	Medium	Low
Street Miles	59.33	79.88	259.67
Total Passings	5,904	3,544	3,473
Average Passings per Mile (PPM)	99.51	44.37	13.37
Median PPM	101.82	46.51	13.33



Cost of Ownership Middle Mile



Middle Mile Fiber

- Investment \$4.40 million
 - Includes test equipment and fiber management software
- Initial borrowing \$4.42 million
- Annual cost of \$434,300
 - Debt service payment of \$336,300 per year
 - Operating & maintenance expenses of \$82,000 per year
 - Depreciation reserve of \$16,000 per year



Next Steps and Schedule



Next Steps

- Collect feedback
- Prepare draft report
 - Submit to City first week of June
- City review and comment
 - Second week of June
- Release final report
 - End of June



Discussion & Questions