



Office: 270.542.4121
Fax: 270.542.4800
10725 Bowling Green Road, P.O. Box 97
Auburn, KY 42206

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DEC 22 2017

PUBLIC SERVICE
COMMISSION

Gwen R. Pinson
Executive Director
KY Public Service Commission
211 Sower Boulevard
P.O. Box 615
Frankfort, KY 40602-0615

Case No. 2017-00476

December 21, 2017

Re: In the Matter of the Application of Logan Telephone Cooperative, Inc. for a Certificate of Public Convenience and Necessity for Construction of a Fiber-to-the-Premise Network

Dear Director Pinson,

Attached for your review is an Application for a Certificate of Public Convenience and Necessity for the construction of a fiber-to-the-premise (FTTP) network filed on behalf of Logan Telephone Cooperative, Inc.

As noted in paragraph 7 of the application, the company is still working to complete loan application documents that would otherwise provide information requested in 807 KAR 5:001 Section 15(e). To the extent that the Commission deems this information necessary, the company requests that this filing be deemed a request for waiver of those requirements at this time.

Enclosed are one (1) original application and ten (10) copies. Also enclosed are one (1) copy of the maps, plans, specs and drawings of the proposed construction in pdf format on compact disk and two (2) copies on paper.

If you have any questions about this application please do not hesitate to contact me.

Sincerely,

A handwritten signature in black ink that reads "Gregory A. Hale". The signature is written in a cursive, flowing style.

Gregory A Hale
General Manager/Executive Vice President

Enc.
CC(email): Jim Stevens, KY PSC

COMMONWEALTH OF KENTUCKY
BEFORE THE PUBLIC SERVICE COMMISSION

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DEC 22 2017

PUBLIC SERVICE
COMMISSION

In the Matter of:

THE APPLICATION OF LOGAN TELEPHONE)
COOPERATIVE, INC. FOR A CERTIFICATE)
OF PUBLIC CONVENIENCE AND NECESSITY)
FOR THE CONSTRUCTION OF FIBER-TO-THE-)
PREMISE IN PORTIONS OF LOGAN, SIMPSON,)
BUTLER, MUHLENBERG, TODD, WARREN, AND)
OHIO COUNTIES, KENTUCKY)

Case No. 2017-00476

APPLICATION FOR CERTIFICATE OF PUBLIC CONVENIENCE AND NECESSITY
FOR CONSTRUCTION OF FIBER-TO-THE-PREMISE IN PORTIONS OF LOGAN,
SIMPSON, BUTLER, MUHLENBERG, TODD, WARREN AND OHIO COUNTIES,
KENTUCKY

Logan Telephone Cooperative, Inc. ("Logan"), pursuant to KRS 278.020 and 807 KAR 5:001, hereby submits this application for a certificate of public convenience and necessity ("CPCN") for the construction of Fiber-to-the-Premise ("FTTP") in portions of Logan, Simpson, Butler, Muhlenberg, Todd, Warren and Ohio Counties, Kentucky.

1. Pursuant to 807 KAR 5:001 Section 14(1) The full name, address and email address of Logan is Logan Telephone Cooperative, Inc., P.O. Box 97, 10725 Bowling Green Road, Auburn, KY 42206, ghale@loganphone.com.
2. Pursuant to 807 KAR 5:001 Section 14(2) Logan is a Kentucky Cooperative Corporation in good standing. A certified copy of Logan's Articles of Incorporation is on file with the Commission in Case No. 2016-00081 and is unchanged.
3. Pursuant to 807 KAR 5:001 Section 15(2)(a) Logan provides the following facts relied upon to show that the proposed construction is required by public convenience and necessity.
 - a. Currently Logan members are requesting higher speed broadband services than are available through Logan's existing copper/fiber hybrid network.
 - b. In the FCC's 2016 Measuring Broadband Report¹ the FCC found that the median download speed reached 41 Megabits per second in September

¹ <http://data.fcc.gov/download/measuring-broadband-america/2016/2016-Fixed-Measuring-Broadband-America-Report.pdf> (accessed December 13, 2017) page 15 See Exhibit A

2015. This type of speed, and the speeds Logan members will need in the future, will require a FTTP network.

- c. It is generally known that fiber will be an economic engine for long term growth and will create new opportunities in employment, education, health care and entrepreneurship. Quality of life for members will increase as work-from-home opportunities, entertainment services, cloud computing, and other IP offerings require very high speed broadband only available through FTTP networks like those proposed in this application.
4. Pursuant to 807 KAR 5:001 Section 15(2)(b) Logan does not require franchise approval from any public authority to deploy the facilities described herein. Any highway or railway permits will be obtained prior to start of construction. The majority of this construction will be on private right-of-way.
 5. Pursuant to 807 KAR 5:001 Section 15(2)(c) Logan provides the following description of the proposed location, construction manner and identifies any competitors.
 - a. Logan identified areas to build by examining the number of locations per fiber route mile in its wire centers and prioritizing those wire centers with the highest number of locations per mile.
 - b. The proposed locations for this construction project include wire centers in all of the exchanges of Adairville, Auburn, Dunmor, Lewisburg, Logansport and Rochester. These areas are currently served by copper cable coming from the relevant Central Office or a fiber fed remote location. Maps showing the proposed areas and the effected routes are included with this application.
 - c. This project will enable Logan to provide enhanced broadband services to an additional 2,905 locations. Initially, Logan will offer its members broadband service of up to 1 Gigabit per second through this fiber network. The proposed project will provide members with the most advanced broadband infrastructure available. This infrastructure will allow for the offering of other advanced services in the future.
 - d. Fiber optic cable will be placed between Logan's Central Offices and each inhabitable premise that desires service on the proposed routes. The company expects 98 percent of all construction to be buried with the remaining aerial cable in areas where buried construction is not feasible. Aerial cable will be placed on existing aerial routes. Buried cable will be direct buried at a depth of at least 30 inches. The interface between the buried main line cable and the subscriber cable or drop will be in a below ground level handhole or an above ground pedestal.

- e. In addition to the fiber-optic cable facilities, Logan will place electronic equipment in its Adairville, Auburn, Dunmor, Lewisburg, Loganport and Rochester central offices to transport the optical signal from the central switch and central network to each customer. This optical signal will be converted at the customer's premise to an electrical signal for service to the customer's telephone, computer or other network device.
 - f. The construction will be performed under Rural Utilities Service (RUS) specifications.
 - g. Logan has no competition in fixed broadband services or basic voice services in the proposed areas except for approximately 10 locations in the Logansport exchange. No other companies have deployed FTTP networks in Logan's service areas.
 - h. Logan expects construction to begin in March 2018 and be completed in December 2022. Logan will cutover customers to the fiber network on a continuous basis as each segment is completed and anticipates its first conversions to begin in fall of 2018, completing in Spring of 2023.
6. Pursuant to 807 KAR 5:001 Section 15(2)(d), two copies of the required maps, plan, specs and drawings are being included with this application as well as one copy in pdf format on compact disk.
7. Pursuant to 807 KAR 5:001 Section 15(e) Logan plans to finance its proposed construction, engineering and electronics through a RUS "N" loan for \$30,159,000. Logan has already received RUS approval to proceed under interim financing for certain engineering services. The RUS letter regarding the loan and interim financing is included in Exhibit B of this application.

The company is seeking to finance the project through an 18-year loan from RUS and its application will be submitted following the completion of Logan's 2017 audited financial statements. Because the company does not anticipate receiving the funds before the middle of 2018, rather than lose critical time in its construction schedule, Logan plans to fund the engineering, construction and electronics for 2018 with interim financing. Logan is requesting this interim financing capital through the Rural Telephone Finance Cooperative. Interim financing will be repaid once RUS loan funds are available. Based on its prior experience with such borrowing arrangements, Logan will be selecting the Cost of Money type of infrastructure loan from the USDA Rural Utilities Service. With this type of loan, the interest rate is fixed at current U.S. Treasury rates depending upon loan maturity at the time of each advance from RUS against the loan. Until Logan and RUS complete the execution of the loan documents, however, Logan cannot state with certainty the terms of its loan. To the extent that the Commission deems this information necessary, please consider this a request for waiver of the requirements of 807 KAR 5:001 Section 15(e) at this

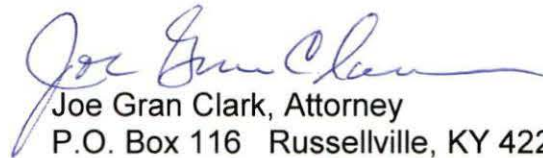
time. The company can provide additional information regarding the terms of the loan as it becomes available. The company currently has no debt.

8. Pursuant to 807 KAR 5:001 Section 15(f) Logan estimates that annual operational costs will significantly decline in the areas where FTTP is deployed. While it is difficult to identify costs savings in just a portion of its network, an FTTP Council study² reports that survey respondents estimate over a 20 percent average savings in operational costs due to active FTTP deployment.
9. At this time, Logan does not anticipate any local telephone rate adjustments due to this project. The company is, however, subject to minimum FCC-determined rate floor levels as a condition of receiving critical universal service support. While such floors are currently suspended, Logan may be required to raise rates in response to future FCC decisions.

² <http://www.ftthcouncil.org/d/do/1136> (accessed December 13, 2017) page 10 *See Exhibit C*

Based on the foregoing, and in accordance with KRS 278.020, Logan Telephone Cooperative respectfully requests that the Commission issue a CPCN to deploy a FTTP network in the included service areas.

Respectfully submitted,

A handwritten signature in blue ink that reads "Joe Gran Clark". The signature is fluid and cursive, with a long horizontal flourish extending to the right.

Joe Gran Clark, Attorney
P.O. Box 116 Russellville, KY 42276
Main: 270.726.2085
Fax: 270.726.2081
jgclarklaw@bellsouth.net

EXHIBIT A

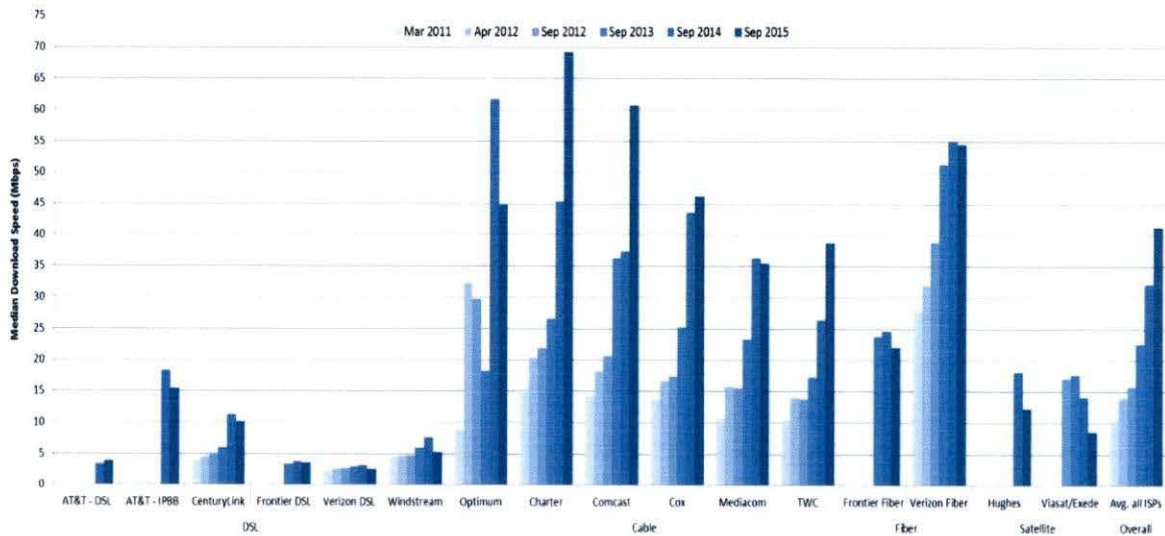
B. MEDIAN DOWNLOAD SPEEDS

Advertised download speeds may differ from that actually experienced by subscribers for several reasons. First, network operational performance of ISPs may vary, with some ISPs more consistently meeting network service objectives than others. Second, speeds experienced by different consumers subscribed to the same ISP and the same service tier may vary across a geographical region. Third, speeds experienced by a particular consumer will vary during the day based on variations in the aggregate Internet usage by all subscribers to that same network. We examine the performance of individual carriers. Unless stated otherwise, all actual speeds are measured only during peak usage periods.

Also this year, in calculating the typical consumer-experienced speed across all subscribers of an ISP that might be offering multiple tiers, we have shifted to using a median speed for each tier and weighing these medians by their subscriber numbers. As noted, data for the appropriate weightings was drawn from the ISPs themselves or secondarily from FCC data. In previous years we computed the mean speed for each tier and weighted the tiers by the number of panelists in each tier.

Chart 3 shows the median download speeds experienced by each participating ISP’s subscribers—averaged across all analyzed service tiers, geography, and time—from 2011 to 2015. As mentioned above, Chart 3 only applies statistical weighting to the data for 2015, while prior year data do not reflect this methodology. As a result, shifts from 2014-2015 may not reflect trends in an ISP’s performance over that period. **The median download speed, averaged across all participating ISPs, has almost quadrupled during this period, from approximately 10 Mbps in March 2011, to approximately 41 Mbps in September 2015. Compared to last year’s unweighted median speed of 32 Mbps, this year’s speed was an increase of approximately 28%.**

Chart 3: Median download speeds by ISP, 2011 to 2015



However, as we observed above when examining advertised download speeds, the increase in median download speeds is not uniform across access technologies. For subscribers to DSL-based broadband service, the increase in median download speeds has varied among ISPs, with most ISPs showing little or no change. For subscribers to each of the participating cable broadband services, there have been fairly

EXHIBIT B



United States Department of Agriculture
Rural Development

September 21, 2017

Mr. Greg Hale
General Manager
Logan Telephone Cooperative
P.O. Box 97
Auburn, Kentucky 42206

Dear Mr. Hale:

We have received and are hereby approving your request to proceed with construction proposed under your "N" loan application in the amount of \$30,159,000. We understand that you plan to use general funds as an interim financing arrangement.

We grant interim financing approval for only those projects that you must perform immediately. We understand that the proposed construction will consist of pre-loan engineering services and post loan engineering services relating to anticipated 2018 construction.

We approve your request to proceed under interim financing in an amount not to exceed \$179,000. This approval is not a commitment from the Rural Utilities Service Telecommunications Program that loan funds will be available for these purposes.

If loan funds become available for these purposes, we will be under no obligation to advance funds to reimburse interim financing unless you comply with all conditions of the Rural Utilities Service Telecommunications Program loans:

1. All construction is consistent with the approved engineering study submitted as a basis for the loan.
2. Our standard procedures for engineering services and construction are followed. This includes obtaining Rural Utilities Service Telecommunications Program approval of plans and specifications, proposals, contracts, and close-out documents.
3. The completed construction conforms fully with our standards and specifications.
4. Construction costs are reasonable and well documented.

1400 Independence Ave, S.W. · Washington DC 20250-0700
Web: <http://www.rurdev.usda.gov>

Committed to the future of rural communities.

"USDA is an equal opportunity provider, employer and lender."
To file a complaint of discrimination, write USDA, Director, Office of Civil Rights,
1400 Independence Avenue, S.W., Washington, DC 20250-9410 or call (800) 795-3272 (Voice) or (202) 720-6382 (TDD).

5. Construction is performed following REA Bulletin 320-15, "Equal Employment Opportunity in Construction Financed with REA Loans."

6. All requisites to advances established in the loan contract are satisfied.

7. The "Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion -- Lower Tier Covered Transactions" is included in all construction and equipment purchase agreements of \$25,000 or more, and in solicitations for such agreements and purchases. We have enclosed a suggested form of this certification.

8. The "Certification for Contracts, Grants, Loans and Cooperative Agreements" regarding lobbying is included in all construction and equipment purchase agreements of \$100,000 or more, and in solicitations for such agreements and purchases. We have enclosed a suggested form of this certification.

You must include a copy of the enclosed addenda with all "*Requests for Proposals*" to potential suppliers and contractors to inform them that an RUS loan has **not** been made and that Logan Telephone Cooperative will fund the work with its own funds and that arrangements have been made by Logan Telephone Cooperative to ensure the timely payment for work performed under contracts that are approved on an interim basis by RUS.

If you should have any questions on interim financing procedures, please contact our General Field Representative, Mr. James E. Wilson at 859-335-5483 or our Post Loan Servicing Branch at 202-720-0725

Sincerely,



SHAWN B. ARNER
Deputy Assistant Administrator
Loan Origination & Approval Division
Telecommunications Program
Rural Utilities Service

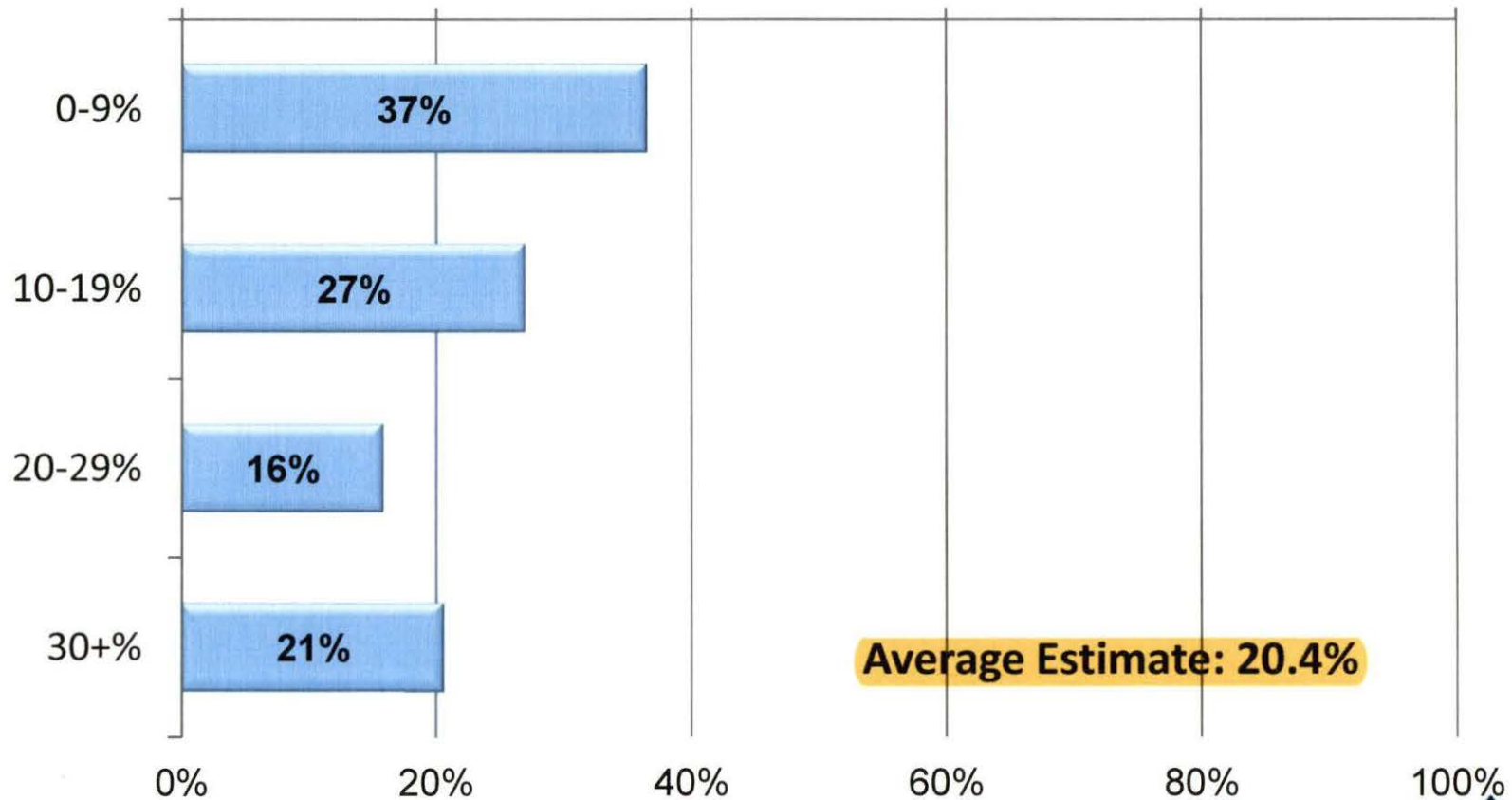
Enclosures

cc:
Mr. Jeffrey Swan, Finley Engineering

EXHIBIT C

FTTH Reduces Operations Costs

Estimated Opex Savings among Those with Active FTTH Customers



**Building Fiber-to-the-Home
Communities Together**



Logan Telephone Cooperative

2018 – 2022 FTTP for Adairville, Auburn, Dunmor, Lewisburg, Logansport, and Rochester Exchanges

Plans and Specifications

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Logan Telephone Cooperative (Logan) plans to construct Fiber-To-The-Premise (FTTP) facilities passing 2,905 premises in portions of Butler, Logan, Muhlenburg, Ohio, Simpson, Todd and Warren Counties. The Plan is to deploy an active Ethernet FTTP system to specifically increase the broadband speeds available to customers. This construction will provide State-of-the-Art broadband facilities to this area.

Within and immediately adjacent to the Logan service area, there are five (5) other internet service providers – those with any substantial coverage are 3 satellite and 1 fixed wireless providers while the cable provider has an insignificant footprint of much less than 0.1%. Only one provider can even meet the minimum FCC broadband definition and thereby call themselves a “broadband provider.” In summary, existing competitors lack one or more of the following: data speeds, coverage area, affordability and reliability and there are no known plans by any provider to upgrade their respective networks.

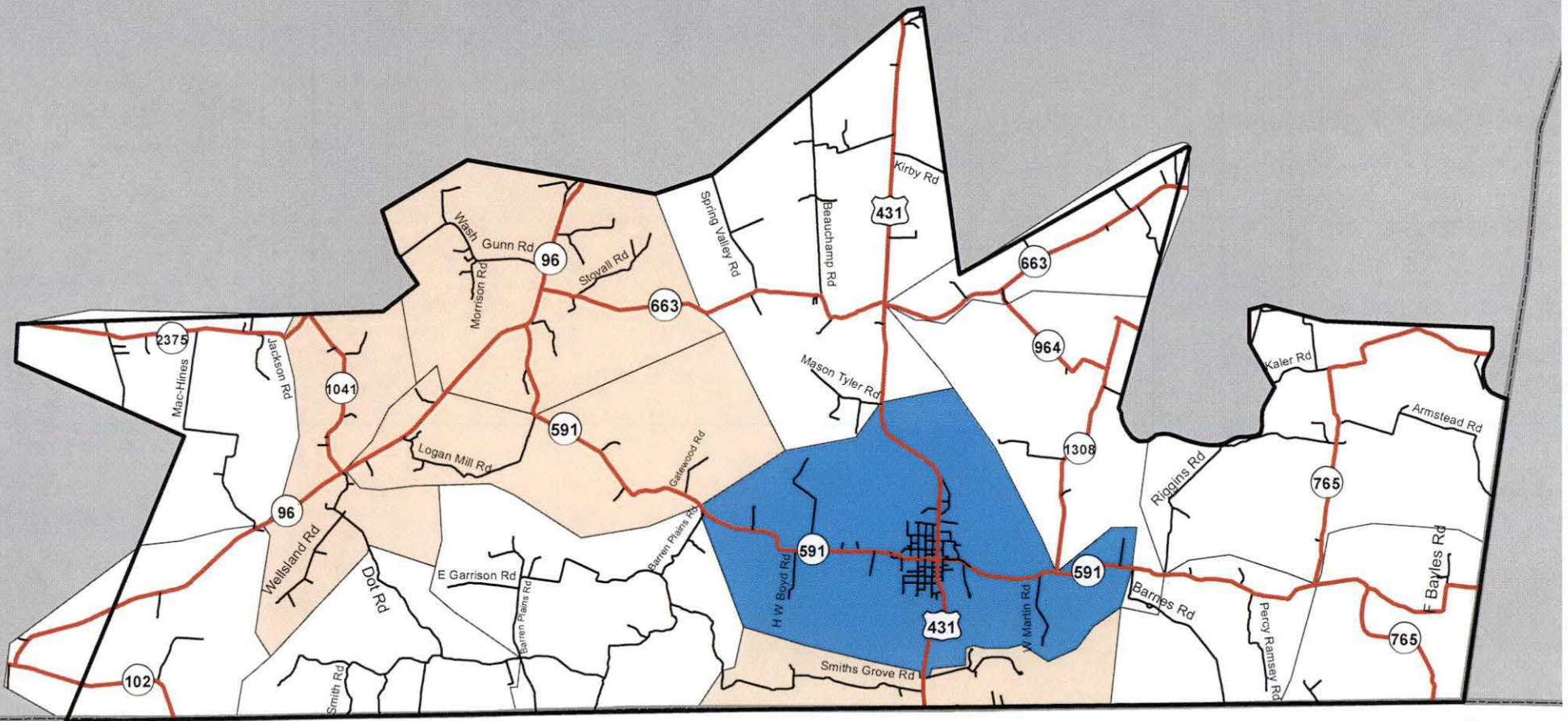
Logan’s fiber optic cable will be placed between the respective central office and each inhabitable residential premise and each business premise covered in this construction plan. For reliability, the fiber cables will be predominately direct buried at a minimum depth of 30 inches. When there is no economical alternative, a small part of the fiber cable construction will be aerial installation. The interface between the buried main line cable and the subscriber cable will be either in a below ground level handhole or an above ground pedestal.

In addition to the fiber-optic cable facilities, Logan will place additional electronic equipment in each central office to aggregate, administer, manage, monitor and transport optical signals downstream to each customer and upstream to the higher order interconnecting network. The downstream optical signal will be converted at the customer premise to Internet Protocol (IP) electrical signal for connection to the customer computer or other network device.

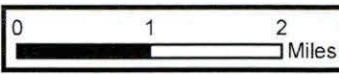
Construction will be performed under Rural Utilities Service (RUS) specifications for direct buried plant and for customer premise cable. Construction is expected to start in March 2018 and complete by December 2022. All required highway permits will be obtained prior to construction start. The majority of this construction will be on private right-of-way.



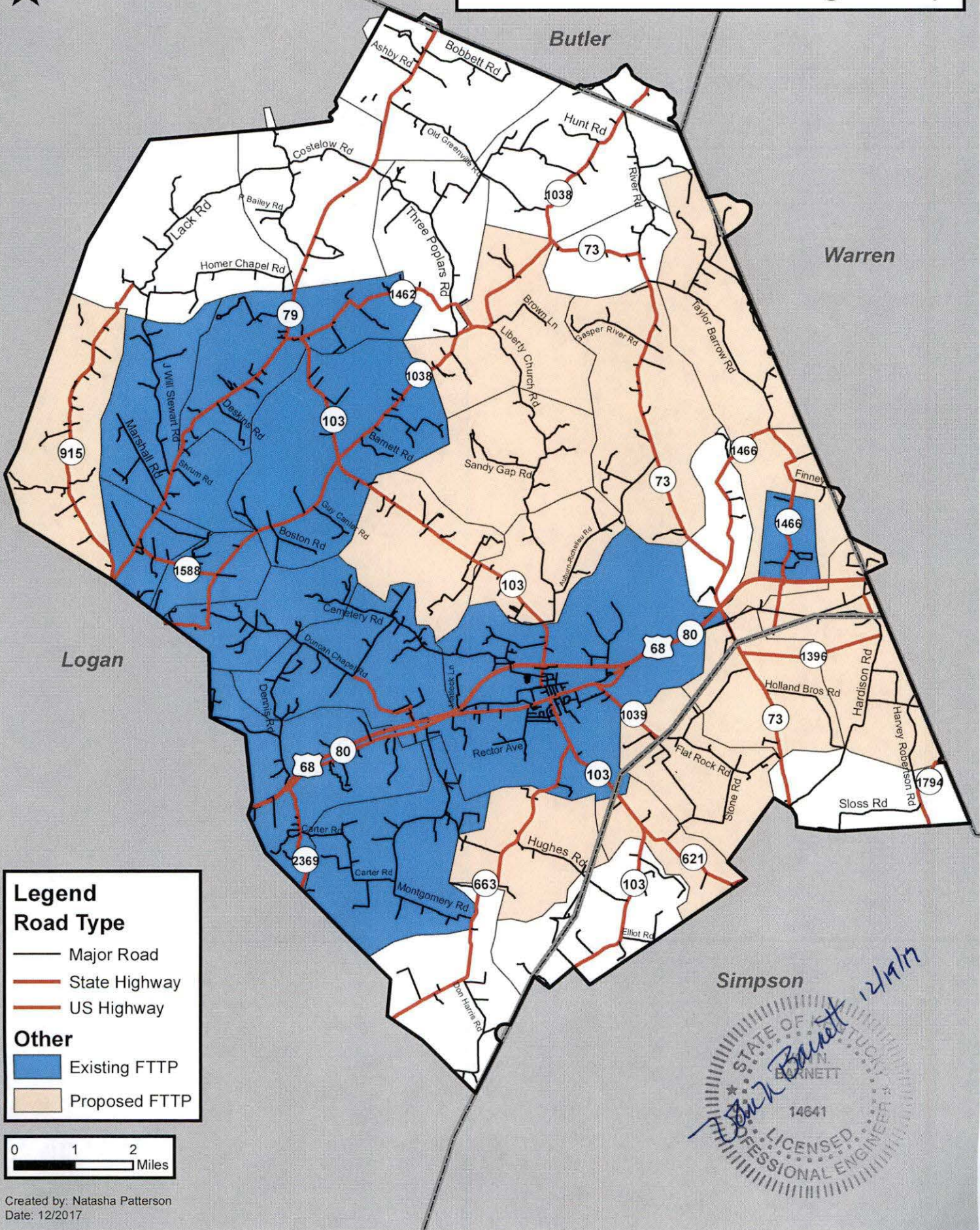
Adairville N Loan Design Map



Legend		Other	
Road Type			
	Major Road		US Highway
	State Highway		Existing FTTP
			Proposed FTTP



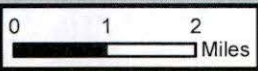
Auburn N Loan Design Map



Legend

- Road Type**
- Major Road
 - State Highway
 - US Highway

- Other**
- Existing FTTP
 - Proposed FTTP



Created by: Natasha Patterson
Date: 12/2017

Simpson
John Barnett 12/17/17
STATE OF MISSISSIPPI
JOHN BARNETT
14641
LICENSED PROFESSIONAL ENGINEER

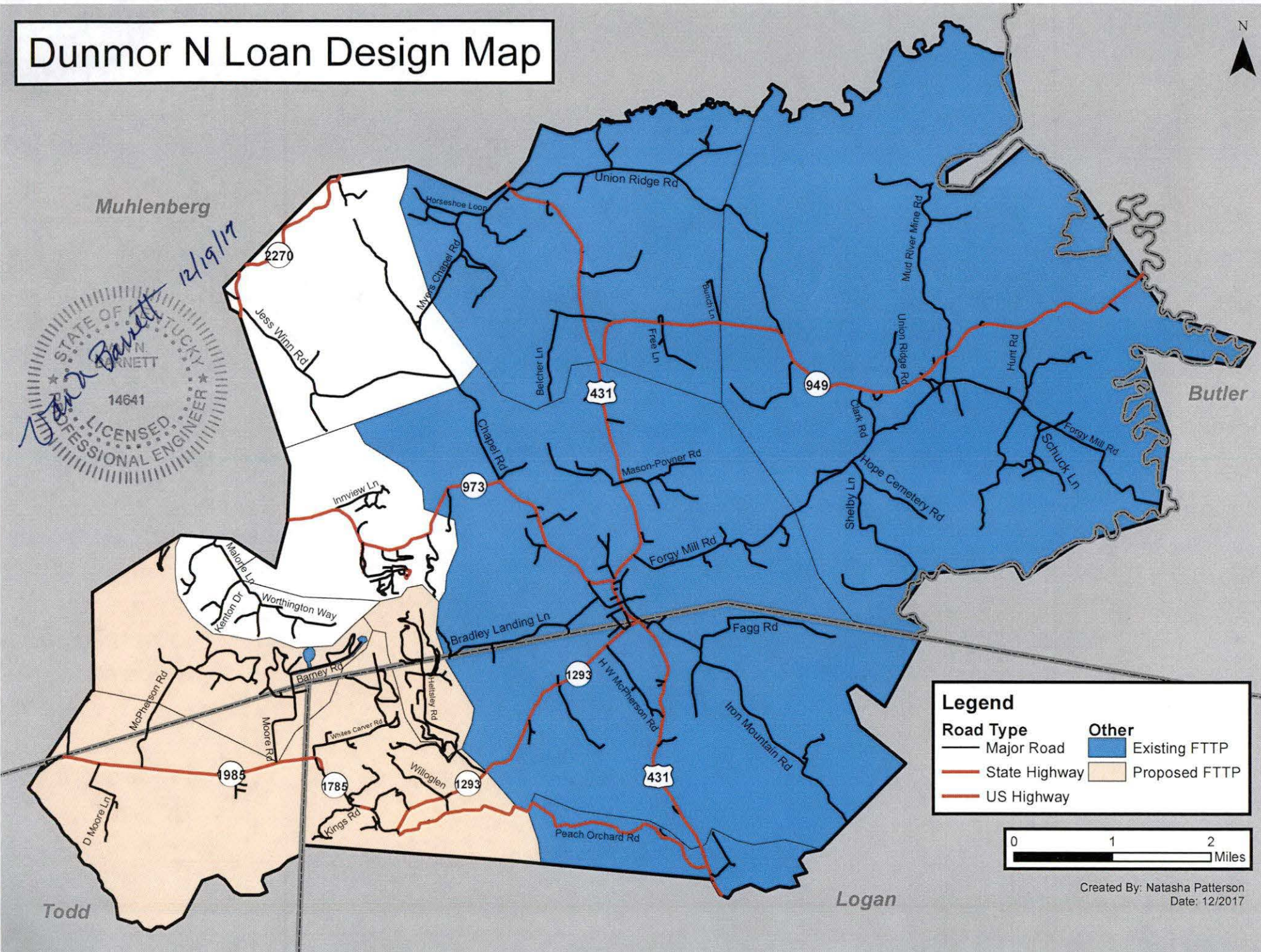
Dunmor N Loan Design Map



Muhlenberg

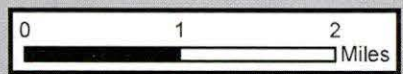
12/19/17

STATE OF KENTUCKY
J. BARNETT
14641
LICENSED PROFESSIONAL ENGINEER



Legend

Road Type	Other
Major Road	Existing FTTP
State Highway	Proposed FTTP
US Highway	



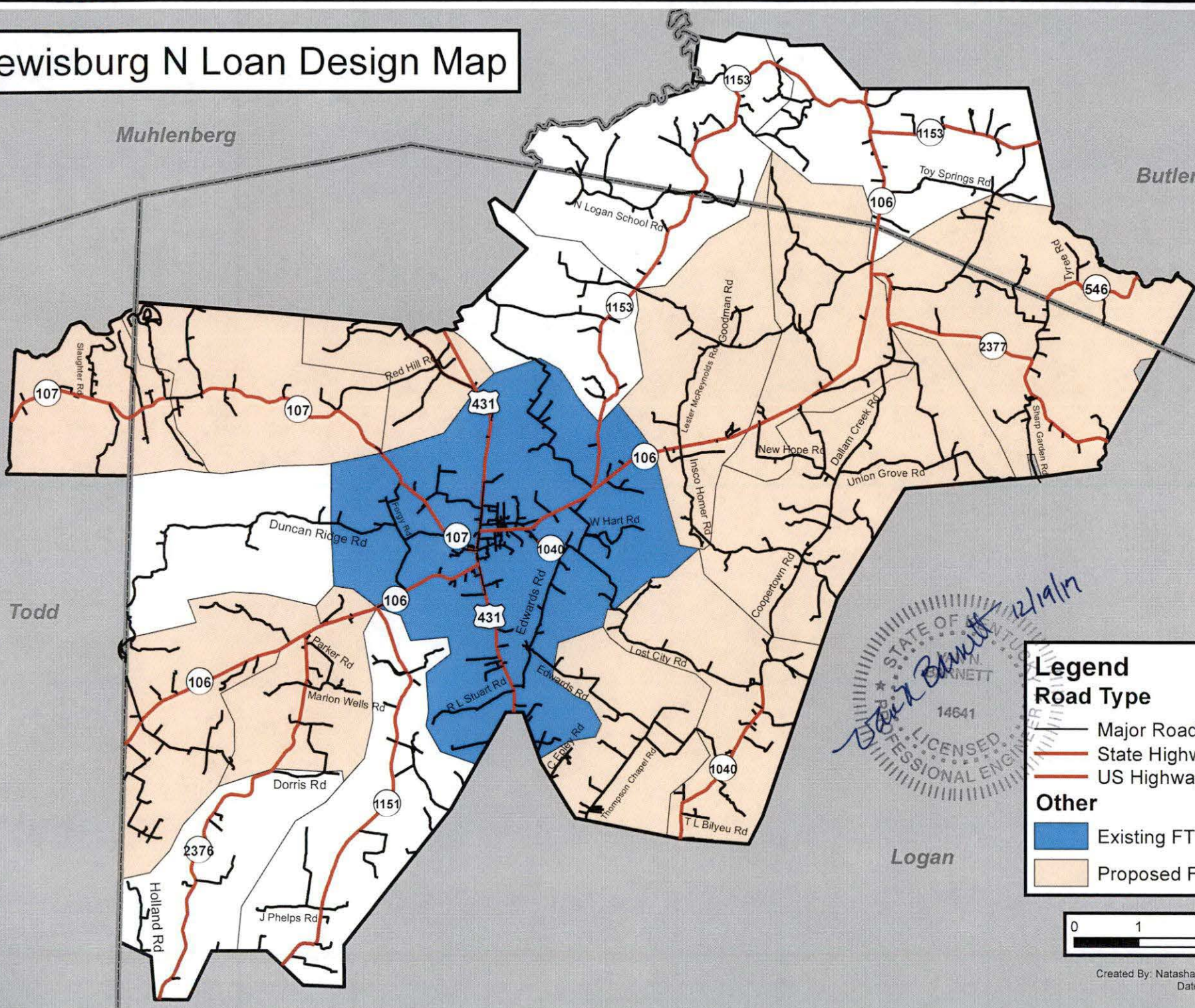
Created By: Natasha Patterson
Date: 12/2017

Lewisburg N Loan Design Map



Muhlenberg

Butler



Todd

Logan

Handwritten signature: David Barnett
 12/19/17
 STATE OF KENTUCKY
 BARNETT
 14641
 LICENSED PROFESSIONAL ENGINEER

Legend

Road Type

- Major Road
- State Highway
- US Highway

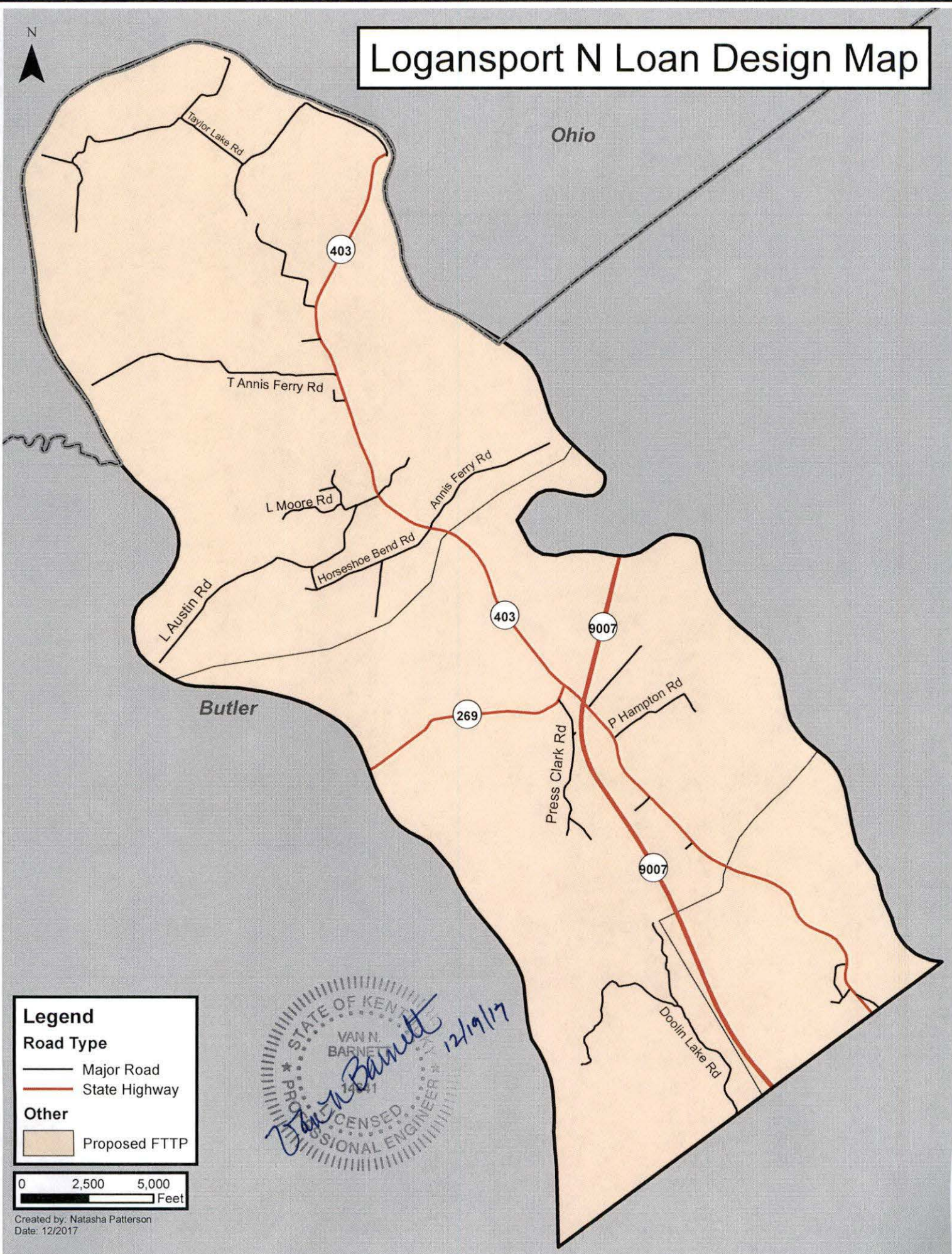
Other

- Existing FTTP
- Proposed FTTP



Created By: Natasha Patterson
 Date: 12/2017

Logansport N Loan Design Map



Legend

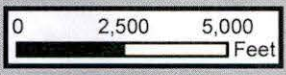
Road Type

- Major Road
- State Highway

Other

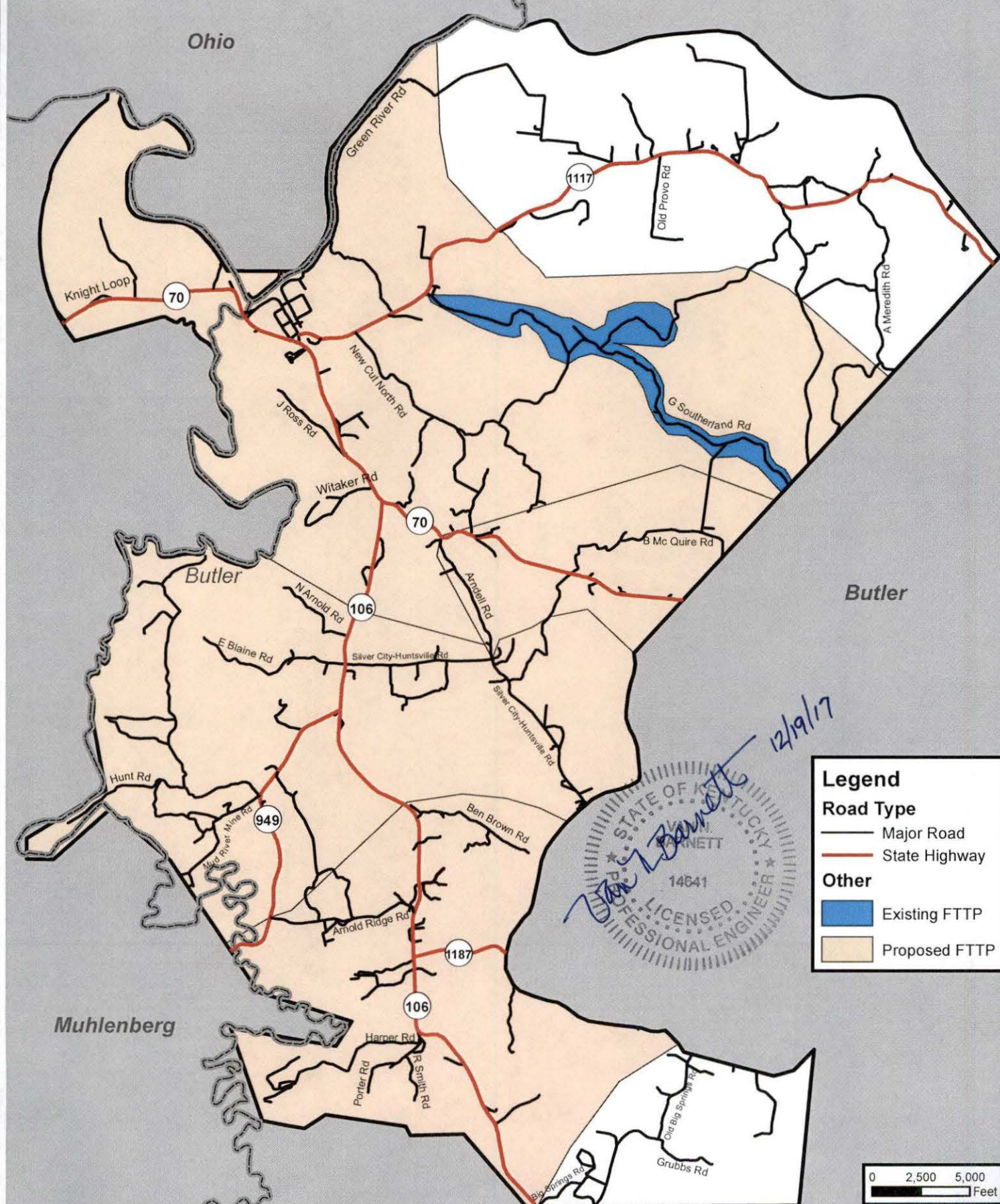
- Proposed FTP

STATE OF KENT
VAN N. BARNETT
1961
PROFESSIONAL ENGINEER
12/19/17



Created by: Natasha Patterson
Date: 12/2017

Rochester N Loan Design Map



Legend

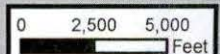
Road Type

- Major Road
- State Highway

Other

- Existing FTTP
- Proposed FTTP

Joe Barnett 12/19/17
STATE OF KENTUCKY
JOE BARNETT
14641
LICENSED PROFESSIONAL ENGINEER



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LOGAN TELEPHONE N LOAN FTTP DESIGN COST ESTIMATES

Application Id : 3003603 Borrower Name : Logan Telephone Cooperative, Inc.		
Work Book : Logan Telephone - Rochester		
Network and Access Equipment		
Project Assets	Description	Rus Funded Costs
Access	FTTP Access and ONT Equipment	\$299,054.14
Outside Plant		
Project Assets	Description	Rus Funded Costs
Cables	Buried Planet - Fiber Mainline	\$2,716,857.19
Cables	Buried Plant - Fiber Drops	\$515,968.60
Professional Services		
Project Assets	Description	Rus Funded Costs
Engineering Design	Engineering and Design Services	\$507,800.28
Work Book : Logan Telephone - Logansport		
Network and Access Equipment		
Project Assets	Description	Rus Funded Costs
Access	FTTP Access and ONT Equipment	\$190,557.82
Outside Plant		
Project Assets	Description	Rus Funded Costs
Cables	Buried Planet - Fiber Mainline	\$1,389,307.64
Cables	Buried Plant - Fiber Drops	\$226,278.08
Professional Services		
Project Assets	Description	Rus Funded Costs
Engineering Design	Engineering and Design Services	\$254,243.78
Work Book : Logan Telephone - Lewisburg		
Network and Access Equipment		
Project Assets	Description	Rus Funded Costs
Access	FTTP Access and ONT Equipment	\$463,319.98
Outside Plant		
Project Assets	Description	Rus Funded Costs
Cables	Buried Planet - Fiber Mainline	\$7,251,839.88
Cables	Buried Plant - Fiber Drops	\$1,038,849.84
Professional Services		
Project Assets	Description	Rus Funded Costs
Engineering Design	Engineering and Design Services	\$1,307,640.74

Work Book : Logan Telephone - Dunmor		
Network and Access Equipment		
Project Assets	Description	Rus Funded Costs
Access	FOTP Access and ONT Equipment	\$174,097.50
Outside Plant		
Project Assets	Description	Rus Funded Costs
Cables	Buried Planet - Fiber Mainline	\$1,636,280.01
Cables	Buried Plant - Fiber Drops	\$370,133.68
Professional Services		
Project Assets	Description	Rus Funded Costs
Engineering Design	Engineering and Design Services	\$314,090.32
Work Book : Logan Telephone - Auburn		
Network and Access Equipment		
Project Assets	Description	Rus Funded Costs
Access	FOTP Access and ONT Equipment	\$534,288.63
Outside Plant		
Project Assets	Description	Rus Funded Costs
Cables	Buried Plant - Fiber Drops	\$1,096,865.55
Cables	Buried Planet - Fiber Mainline	\$6,404,158.12
Professional Services		
Project Assets	Description	Rus Funded Costs
Engineering Design	Engineering and Design Services	\$1,177,995.84
Engineering Design	Loan Application	\$25,000.00
Work Book : Logan Telephone - Adairville		
Network and Access Equipment		
Project Assets	Description	Rus Funded Costs
Access	FOTP Access and ONT Equipment	\$138,517.00
Outside Plant		
Project Assets	Description	Rus Funded Costs
Cables	Buried Planet - Fiber Mainline	\$1,569,204.00
Cables	Buried Plant - Fiber Drops	\$268,478.96
Professional Services		
Project Assets	Description	Rus Funded Costs
Engineering Design	Engineering and Design Services	\$288,424.42

Total Number of Drops	2905
Total Number of Route Miles	365.8
Total Number of Drop Miles	192.58
Total Miles	558.38
Total OSP Construction	\$24,484,221.55
Total Electronics	\$1,799,835.07
Total Engineering and Inspection	\$3,875,195.38
Total Loan Amount	\$30,159,252.00