WILDWOOD

June 27, 2016

The Honorable City Council
City of Wildwood, Missouri
16860 Main Street
Wildwood, Missouri 63040

Re: Update on the City's Rural Internet Access Project

Council Members:

The City has received a number of updates from the two (2) providers over the last few weeks relating to their progress in bringing high-speed internet to the rural areas of Wildwood that are currently not served or underserved. Much of this activity has been spurred by the recent allowance by St. Louis County, Missouri to allow the two (2) contracted providers to the City to access the emergency communication towers that are located in Babler State Park and the St. Louis Community College's Campus in Wildwood. A summary of this activity is as follows:

- **Bays ET** (please see the attached sheet) –
  1. Upgrading all current equipment on the City-owned poles to improve coverage and bandwidth (speeds).
  2. Upgrading equipment on backhaul locations to meet current and expected demands on bandwidth.
  3. Analyzing planning solutions to last mile service locations, where the households do not have any other internet options. This planning process will identify locations in the south half of the City needing additional smaller heighted poles to act as relays to these hard-to-serve households. This information is to be provided to the Department of Planning within the next three (3) weeks.
  4. Working with St. Louis County's Emergency Communications Commission on the requirements for installation of equipment on the community college tower location.
- **Wisper ISP** –
  1. Working with St. Louis County's Emergency Communications Commission on the requirements for installation of equipment on the Babler State Park tower location.
  2. Requesting financial assistance from the City to install LTE equipment on the tower located within Babler State Park for service to a currently unspecific number of leads (households). This proposal is attached to this letter. The Rural Internet Access Committee met on June 22, 2016 to discuss this matter, and others, and supported this expenditure, but asked that Wisper ISP provide greater information on anticipated

coverage and potential customers that could be served by this location. This information is to be provided by Wisper ISP sometime over the next three (3) weeks.

3. Identifying locations within the north half of the City needing additional smaller heighted poles to act as relays to these hard–to-serve households. This information is to be provided to the Department of Planning within the next three (3) weeks.

All of these items represent the providers attempting to find solutions for these last mile locations that are presenting the biggest challenge to date for service access. The Rural Internet Access Committee was supportive and appreciative of these efforts, as well as those initiatives from the past, and agreed to meet at the beginning of August to discuss this new information and how to proceed with its implementation within the City.

At tonight's meeting, for discussion, is the agreement with St. Louis County, Missouri for the City's lease of space on their two (2) Wildwood towers for this purpose. The City Attorney and the attorney representing St. Louis County have been working together to ensure the agreement is appropriate for all parties. If the City Council concurs with the agreement's content from the Work Session discussion upon it, the Department will request the necessary legislation receive first reading during the Regular Session of tonight's meeting. This agreement represents a major breakthrough for the City in terms of accessing these two (2) towers for service purposes to Wildwood residents.

During the aforementioned meeting of the Committee on June 22, 2016, the following information was provided by the two (2) providers, which indicates progress in addressing the needs for high-speed internet service in the rural areas of the City:

- 300 households are being served by Bays ET in Wildwood
- 107 households are being serviced by Wisper ISP in Wildwood
- Approximately $45,000.00 is available in the City's Capital Improvement Budget for the rural internet access project.
- Approximately another $45,000.00 will be needed to fund all the components of the most recent plans of the two (2) providers (Department of Planning estimate, which is to be verified by the information to be provided by the two (2) providers).

An estimate of approximately 200 to 300 households remain in Wildwood that have poor or no service options and are actively seeking such from a provider. This amount is approximately 900 to 1,000 households less than the City's original estimate of unserved or underserved households from the start of this process in December 2007.

If any of the City Council members should have questions or comments in this regard, please feel free to contact the Department of Planning at (636) 458-0440. Thank you for your continued support of this project and the efforts to address the needs of rural Wildwood residents.

Respectfully submitted,
CITY OF WILDWOOD

Joe Vujnich, Director
Department of Planning

Cc: The Honorable James R. Bowlin, Mayor
Ryan S. Thomas, P.E., City Administrator
John A. Young, City Attorney
Kathy Arnett, Assistant Director of Planning and Parks
Chris Bay, Malinda Heuring, and Nathan Stooke, Service Providers – Bays ET and Wisper ISP

Network upgrade road map – 63069 – Customer Access June 2016

Sites planned:

63069.ATC-Gray-summit (Pending)

- 63069.melrose (complete)
  - +++Add cambium 450i 900 for woodland hills+++ (pending)
- 63069.hawksrest (complete)
  - 63069.small-hawkrest (complete)
  - 63069.whiskey-creek (complete)
  - 63069.tamara-trail (completed)
- 63069.fox-creek (stage 1 complete, pending 2 and 3)
  - 63069.vixon (pending)
- 63069.deer-hallow (completed)
  - 63069.vixon2 (pending)
  - 63069.stoval completed)
- 63069.fox-mountain (pending)
- 63069.mystic-valley (pending)
- 63069.henken (complete)

63069.south-pacific (complete)

63069.west-pacific (complete)

63069.east-pacific (complete)

63069.allenton-hemmer (in progress, stages 1 & 2 complete, 3 pending)

63069.allenton pole New install (complete)

63069.stones throw new install (complete)

63069.east-melrose new install (complete)

Bays-ET High-Speed
517 W Osage
Pacific, MO 63069

PHONE (636) 334-9353
E-MAIL sales@bays-et.com
WEB SITE http://www.bays-et.com

Work overview

63069.ATC-gray-summit

Core:

PTP to 63069.south-pacific (complete)
PTP to 63089.ATC-west-boles (complete)

Customer edge: replace all UBNT edge access gear with cambium (pending)
Wimax access, retire (inprogess)

Wildwood PTP links: replace all UBNT links:
1: combine poles to 2 poles per point of access (complete)
2: install all new cambium links, (in-progress) 3 of 10 complete

Future, 6 to 12 mths: add major PTP to stl county EMS tower (no hard date), off load hencken and east Melrose poles.

Expand cambium access bandwidth (pending removal of all UBNT edge access)

Review network access capacity, possible increases to speed offerings.

Design and begin small pole implementations and or technology additions to reach un-served wildwood residents

Replace all repeaters with cambium

Add tower ATC Apke
Add tower BW Nike Missile

Future over 12-18 mths:

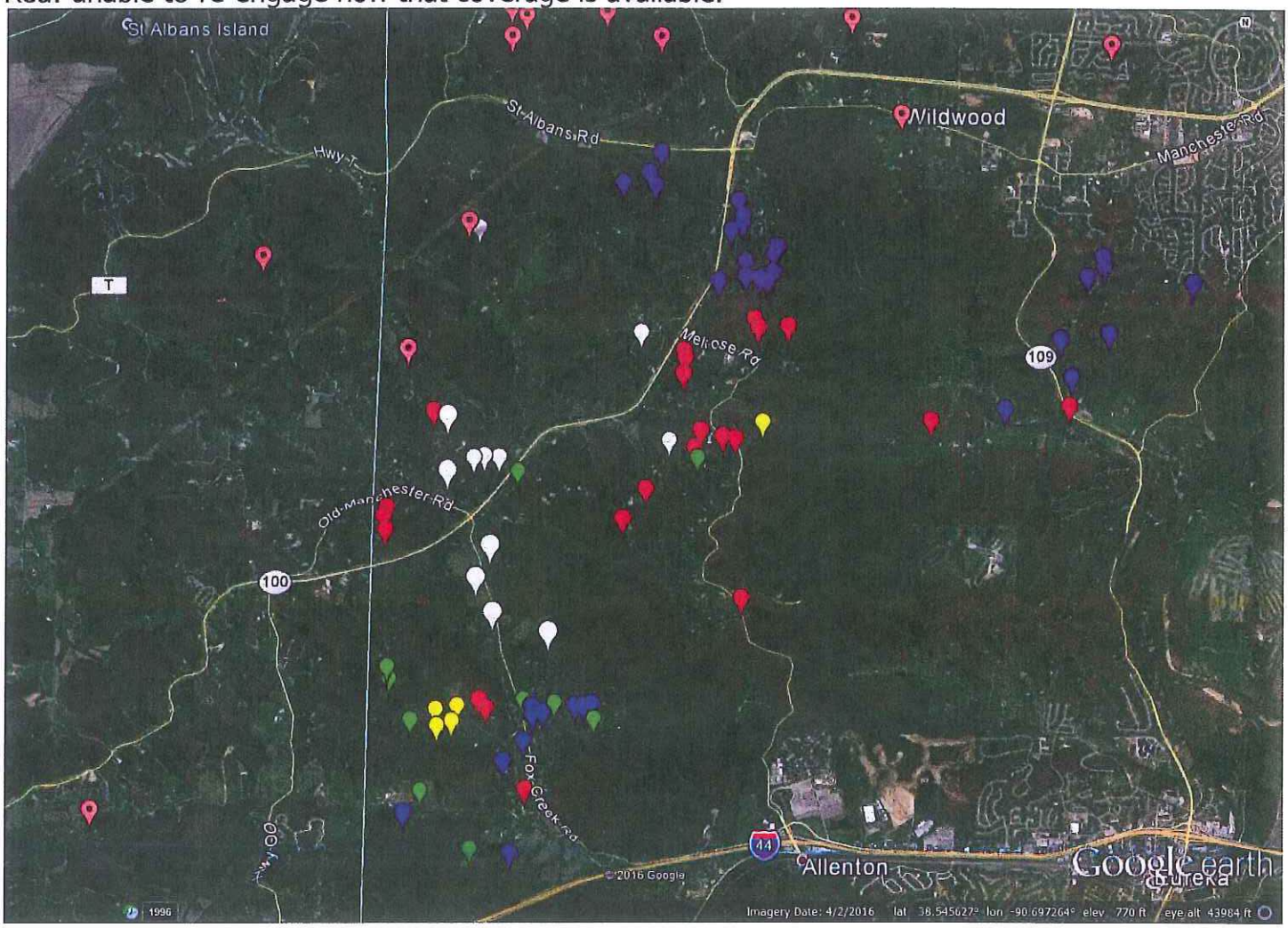
All existing network expansion, upgrades and modifications complete 63069

Introduce new services.

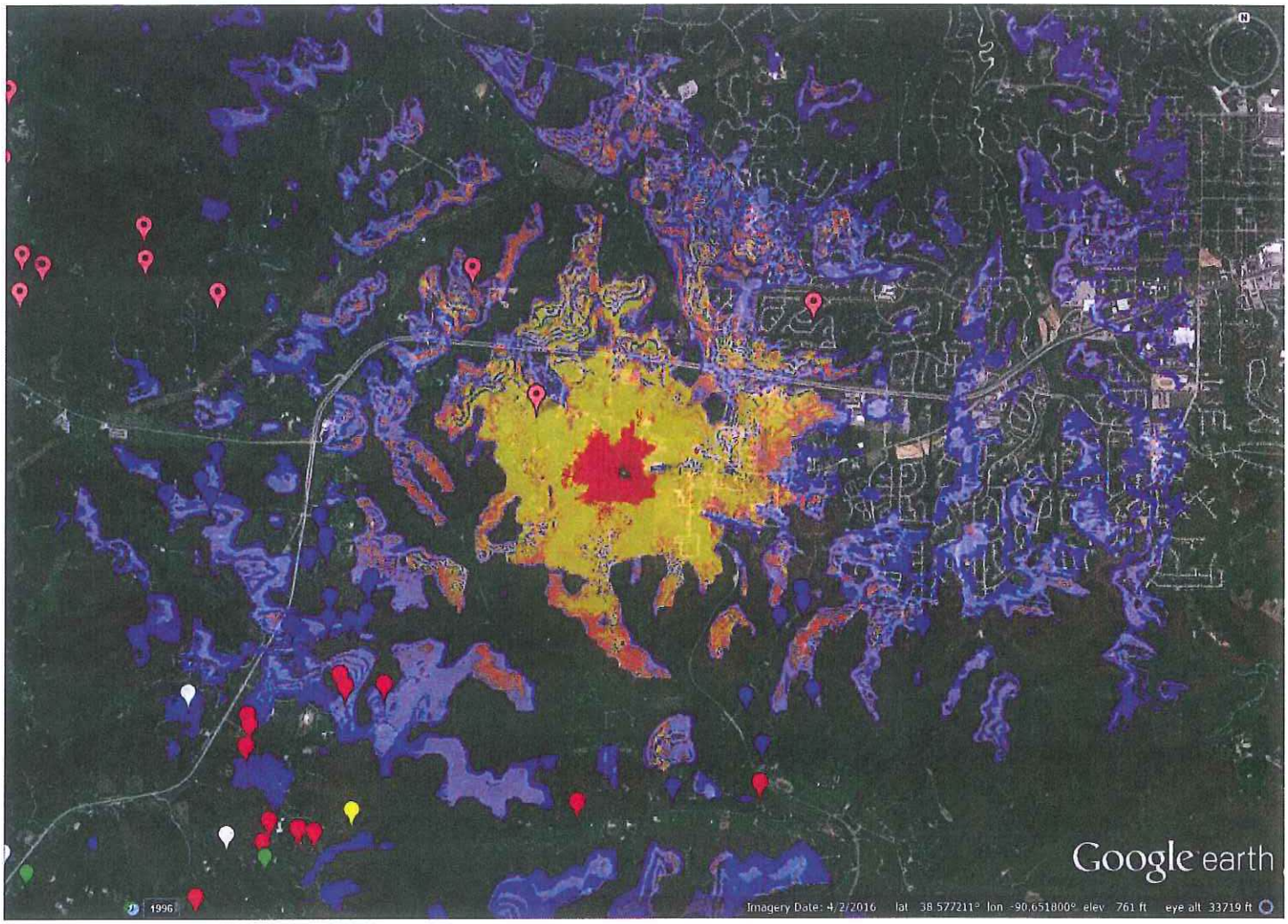
Notes:
Wildwood customers served:

total pole customers: 233
total free: 14
ATC or other towers: 50
Total serviced: 297

Map of pending leads:
White: confirmed gone to ATT or other provider
Blue: special action needed to serve
Green: expected to connect after Cambium conversion
Yellow: special install needs
Red: unable to re-engage now that coverage is available.



Coverage from college tower at 155′



LTE from Israel:

Project has been abandoned, performance was substantial less than expected. Could not maintain performance at lower RSSI as required. FCC pulled certification of CPE equipment.

Cambium 450i will be used in its place, forecast penetration isn't comparable, but worth equipment investment. Cambium operates as promised and delivers as expected.

From: **Nathan Stooke** nstooke@wisperisp.com
Subject: St Louis County Tower
Date: June 14, 2016 at 12:29 PM
To: Joe Vujnich JVujnich@cityofwildwood.com, Larry McGowen mcgwildwood@att.net
Cc: Malinda Heuring mheuring@wisperisp.com

Hello,

It looks like the county tower is going to happen. This is great news. I can not wait to get installed on that tower. It will help all of the existing customers as we will bring in more bandwidth to the tower and then distribute it to the other poles in the area. It will also allow us to get service to many of the people still waiting for service.

Even though we have a little bit of time before we can install on the tower I wanted to start the planning process with you. In the past we talked about the city helping pay for the non line of sight gear we need to install on the tower. In the attached proposal from Nov 2014, wow that is a long time ago, we were asking for $44,000 for the 2 poles. We are planning on installing the same equipment on the St Louis County tower. It did not work well enough on the poles back then so we did not install it. Now we can install it in LTE mode and the software on the radio has been upgraded a ton since 2014. The poles were too short to get to the customer's in the area around the pole that really needed it. The taller St Louis County tower should have a much better shoots to the customers and in this case being a little further away from the customer will help.

We are going to install more equipment on the tower then we where planning on putting on the 2 poles. We still need about $16,000 for the customer gear. We will need to buy about $36,000 in equipment that is installed on the tower, not $28,000. This would be a total of $52,000 we need for the gear. In the past the plan was to have Wisper buy and install the gear and then invoice the city for reimbursement. Cash is tight at Wisper as July is a 3 payroll month for us, so I was wondering if we could get a check before the install. This would allow us to order the gear now and be ready for the install as soon as the tower is available. I do not want our cash flow to delay the install, any further, on the tower given how long we have all been working on this.

After we install on the county tower we will do testing to see if we need to install a short pole in the Wild Horse Creek subdivision. This would be a pole that could be the same height as the trees and used to get people on the South side of the Wild Horse Creek subdivision. We will keep you posted once we can do the testing.

Thanks

WildwoodNLOS[2].docx

Wildwood, MO, Non Line Of Sight

25 November 2014

Wisper is always looking for the best solution to provide service to our customers. The challenges of providing Internet service in Wildwood are known. Wisper currently provides service to about 100 customers; however, we are aware of more than 100 customers still needing high-speed Internet service.

There are several ways to help close the gap on the 100+ customers who still need service--repeaters, new wireless gear, the counties tower, and fiber. Each option has its own benefits and drawbacks and realistic timeframe. Sometimes the best solution is not chosen due to the length of time or cost needed to deploy. Wisper's driving force in our decisions has always been how do we get the most people the most reliable service the soonest. It does no good to wait four years for the best solution.

With the delays in gaining access to the new tower in Babbler Forest State park and the loss of the Wild Horse Creek pole location, Wisper has been limited in its options to provide service to a large number of the residents who still need service. Wisper has been testing a new non line of sight solution that we feel will provide service to about 60 of the approximately 100 residents who have contacted us that still need service. This equipment is significantly more expensive then our line of sight equipment, however it will allow us to provide service to the residents we cannot with our line of sight service, taking everyone one step closers to providing everyone with a high-speed Internet option.

Instead of funding the Wild Horse Creek pole install and several small repeaters, Wisper is requesting the city help fund the purchase of the new non line of sight equipment. Wisper would start by deploying the equipment on two poles, Grand Meridien and Reiger Road, helping about 60-70 residents gain access to reliable high-speed Internet. The cost of the equipment is about $28,000 total for the two poles and $16,000 for the equipment needed in the customers' homes. Wisper is prepared to install the equipment before the end of the year, weather permitting.

Wisper understands the City has already gone above and beyond helping us provide service to the people that live and work in Wildwood. With the continued support from the City of Wildwood, Wisper is excited to move one step closer to providing 100% of the residents of Wildwood service.

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