

# **PUBLIC SAFETY AND INFRASTRUCTURE AND DEVELOPMENT COMMITTEE**

## **AGENDA**

February 18, 2020

7:30 PM

304 E. Grand River, Board Chambers, Howell MI 48843

**1. CALL MEETING TO ORDER**

**2. APPROVAL OF MINUTES**

Minutes of Meeting Dated: January 21, 2020

**3. APPROVAL OF AGENDA**

**4. REPORTS**

**5. CALL TO THE PUBLIC**

**6. RESOLUTIONS FOR CONSIDERATION**

**6.1 Department of Public Works**

Resolution Authorizing an Agreement with Battery Solutions, LLC. to Provide Battery Recycling Services

**6.2 Central Dispatch**

Resolution Authorizing the Purchase and Installation of Additional VHF Microwave Equipment for the Fire and EMS Paging System and a Supplemental Appropriation

**6.3 Central Dispatch**

Resolution Authorizing the Realignment of the Overall Project Budget for the New 911 Central Dispatch Facility

**6.4 Planning Department**

Resolution Authorizing the Honorary Naming of Park Features at Fillmore County Park

**6.5 Planning Department**

Resolution Authorizing Lutz County Park UNSP Application for Recognition

**6.6 Planning Department**

Resolution to Adopt Fillmore County Park Rules

**6.7 Planning Department**

Resolution to Adopt Amended Lutz County Park Rules

**6.8 Board of Commissioners**

Resolution Affirming the Livingston County Board of Commissioner's Support of Constitutional Rights  
(also known as 2A Sanctuary)

**7. CALL TO THE PUBLIC**

**8. ADJOURNMENT**

# **PUBLIC SAFETY AND INFRASTRUCTURE AND DEVELOPMENT COMMITTEE**

## **MEETING MINUTES**

**January 21, 2020**

7:30 PM

304 E. Grand River, Board Chambers, Howell MI 48843

Members Present:

Robert Bezotte, Dennis Dolan , Carol Griffith, Gary Childs

### **1. CALL MEETING TO ORDER**

The meeting was called to order by Commissioner Robert Bezotte at 7:30 pm.

### **2. APPROVAL OF MINUTES**

Minutes of Meeting Dated: December 16, 2019

Minutes approved as presented.

Motion to approve the minutes as presented.

**Moved By** D. Dolan

**Seconded By** C. Griffith

Yes (4): R. Bezotte, D. Dolan , C. Griffith, and G. Childs

**Motion Carried (4 to 0)**

### **3. APPROVAL OF AGENDA**

Motion to approve the Agenda as presented.

**Moved By** G. Childs

**Seconded By** C. Griffith

Yes (4): R. Bezotte, D. Dolan , C. Griffith, and G. Childs

**Motion Carried (4 to 0)**

### **4. REPORTS**

**Public Safety Complex:** Comm. Bezotte advised that he had received many calls with regard to meetings no longer being held at the Public Safety Complex. Cindy Catanach advised that she had as well and would be speaking with Chairman Parker.

### **5. CALL TO THE PUBLIC**

**Bob Potocki** - 8420 Woodland Shore Drive, Brighton MI: Provided hand-out and comments regarding widening of Old US-23 between Spencer and Lee Roads.

## 6. RESOLUTIONS FOR CONSIDERATION

### 6.1 Public Defender

Resolution Authorizing an Agreement with the Michigan Indigent Defense Commission (MIDC) Department of Licensing and Regulatory Affairs (LARA) to Provide Funding to Comply with the Michigan Indigent Defense Act, Public Act 214 of 2018

Public Defender, Karen Groenhout, addressed the Committee regarding the Resolution.

**Moved By** C. Griffith

**Seconded By** G. Childs

Yes (4): R. Bezotte, D. Dolan , C. Griffith, and G. Childs

**Motion Carried (4 to 0)**

### 6.2 Building Department

Resolution Authorizing Feasibility Study to Add Additional Communities to Building Department Oversight

Jim Rowell, Building Official, introduced the Resolution.

**Moved By** D. Dolan

**Seconded By** G. Childs

Yes (4): R. Bezotte, D. Dolan , C. Griffith, and G. Childs

**Motion Carried (4 to 0)**

### 6.3 Emergency Management

Resolution Authorizing Livingston County to Participate in the 2020 Statewide Tornado Drill

Therese Cremonte appeared before the Committee.

**Moved By** C. Griffith

**Seconded By** D. Dolan

Yes (4): R. Bezotte, D. Dolan , C. Griffith, and G. Childs

**Motion Carried (4 to 0)**

### 6.4 Emergency Management

Resolution Authorizing Livingston County to Participate in the FY 2019 Homeland Security Grant Program (HSGP), and to Submit FY-2019 HSGP Agreements – Emergency Management

Emergency Manager, Therese Cremonte, addressed the Committee regarding the Resolution.

**Moved By** D. Dolan

**Seconded By** G. Childs

Yes (4): R. Bezotte, D. Dolan , C. Griffith, and G. Childs

**Motion Carried (4 to 0)**



**6.5 Central Dispatch**

Resolution Authorizing Approval for the Revised Tentative Livingston County E911 Service Plan

911 Director, Chad Chewning, introduced the Resolution.

**Moved By** G. Childs

**Seconded By** D. Dolan

Yes (4): R. Bezotte, D. Dolan , C. Griffith, and G. Childs

**Motion Carried (4 to 0)**

**6.6 Central Dispatch**

Resolution Authorizing the Elimination of a Full-time Dispatcher Position and Creation of a Part-time Quality Improvement Specialist Position

Chad Chewning, 911 Director appeared before the Committee.

**Moved By** G. Childs

**Seconded By** C. Griffith

Yes (4): R. Bezotte, D. Dolan , C. Griffith, and G. Childs

**Motion Carried (4 to 0)**

**7. CALL TO THE PUBLIC**

**Jeff Warder**, Undersheriff: Off-site Medical is over what was budgeted by \$85,000; simply advising the Committee.

**8. ADJOURNMENT**

**Moved By** G. Childs

**Seconded By** C. Griffith

Yes (4): R. Bezotte, D. Dolan , C. Griffith, and G. Childs

**Motion Carried (4 to 0)**

  
\_\_\_\_\_  
Carol Sue Jonckheere, Recording Secretary

RESOLUTION

NO: [Title]

LIVINGSTON COUNTY

DATE: Click or tap to enter a date.

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**Resolution Authorizing an Agreement with Battery Solutions, LLC. to Provide Battery Recycling Services - Drain**

**WHEREAS,** Livingston County coordinates a battery recycling collection and disposal program as an objective of its Solid Waste Management Plan; and

**WHEREAS,** in accordance with the County's Procurement Policy, a formal bid process was performed and submitted proposals were evaluated; and

**WHEREAS,** Battery Solutions, LLC. of Wixom, Michigan submitted a proposal to provide battery recycling collection and disposal services per the itemized Attachment A BAFO proposed rates in RFP-LC-19-06 for a (3) three-year term beginning March 1, 2020 to March 1, 2023 with up to (2) additional one-year renewals for a total contract period not to exceed (5) years; and

**WHEREAS,** Battery Solutions, LLC. has agreed to extend this pricing to the Michigan Association of Counties CoPro+ program as a statewide cooperative agreement that will extend the contracted services to other government municipalities and school districts in Michigan; and

**WHEREAS,** expenses for battery recycling collection and disposal services will vary by collection quantities and will not exceed the approved annual budget. Historically, these costs have not exceeded \$15,000.

**THEREFORE BE IT RESOLVED** that the Livingston County Board of Commissioners hereby authorizes entering into a contract with Battery Solutions, LLC. located at 4930 Holtz Drive, Wixom, MI 48393 for battery recycling collection and disposal services per the itemized Attachment A BAFO proposed rates in RFP-LC-19-06 for a three (3) year term commencing on March 1, 2020 to March 1, 2023, with up to (2) additional one-year renewals for a total contract period not to exceed (5) years subject to the availability of appropriated funds.

**BE IT FURTHER RESOLVED** that the expenses for battery recycling collection and disposal services will not exceed the amount that has been budgeted and approved by the Livingston County Board of Commissioners.

**BE IT FURTHER RESOLVED** that the Chairman of the Livingston County Board of Commissioners is authorized to sign all forms, assurances, contracts/agreements, renewals and future amendments for monetary and contract language adjustments related to the above as prepared by Civil Counsel.

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MOVED:  
SECONDED:  
CARRIED:

## Attachment A: Pricing Form

### RFP-LC-19-06 BATTERY RECYCLING SERVICES

For each item, please indicate either a credit or item price.

ITEM DESCRIPTION	AVG	CREDIT	ITEM PRICE	TOTAL
BUTTON CELLS-101	81	\$ -	\$ 2.75	\$ -
ALKALINE-102	27,163	\$ -	\$ 0.40	\$ -
LI-ION CELLS-104	64	\$ -	\$ 0.05	\$ -
LI-ION PACKS-105	4		\$ 0.05	\$ -
LITHIUM PRIMARY-106	218	\$ -	\$ 2.75	\$ -
NICAD CELLS-108	723	\$ -	\$ 0.15	\$ -
NICAD PACK		\$ -	\$ 0.15	\$ -
NIMH CELLS-111	424	\$ 0.20	\$ -	\$ -
NIMH PACKS	117	\$ 0.20	\$ -	\$ -
SILVER OXIDE-115	1	\$ -	\$ 2.50	\$ -
ZINC-CARBON/ALKA	11,264	\$ -	\$ 0.40	\$ -
ZINC-AIR (W/MERC)	2	\$ -	\$ 7.00	\$ -
VRLA SMALL-201	856	\$ 0.10	\$ -	\$ -
NICAD W POCKET P		\$ -	\$ 0.80	\$ -
LITHIUM THIONYL C	4	\$ -	\$ 2.75	\$ -
LITHIUM SULFUR DIO	4	\$ -	\$ 2.75	\$ -
LI-ION CELLPHONE	48	\$ 0.40	\$ -	\$ -
LI-ION LAPTOP BATTERY	127	\$ 0.50	\$ -	\$ -
BALLAST NON-PCB-512	83	\$ -	\$ 0.50	\$ -
LITHIUM ION DAMAGED - 130		\$ -	\$ 4.25	\$ -

### RFP-LC-19-06 BATTERY RECYCLING SERVICES

For each of the following questions, please mark either Yes or No with an X.

1. TRANSPORTATION FEE? YES ☒ NO ☐

If YES, please indicate the fee per load: \$150.00

2. MINIMUM LOAD REQUIREMENT? YES ☐ NO ☒

If YES, please indicate the minimum weight per load:

3. SORTING REQUIREMENT OR FEE? YES ☐ NO ☒

If YES, please indicate the sorting fee per load:

4. HANDLING REQUIREMENT OR FEE? YES ☐ NO ☒

IF YES, please indicate the fee and provide a description of the service:

5. COLLECTION SUPPLIES INCLUDED? YES ☒ NO ☐

If NO, please complete the following:

DESCRIPTION	QTY	ITEM PRICE	TOTAL
55 GALLON PLASTIC DRUM	16	0	
4x4 PALLETS	4	0	

6. OTHER FEES NOT LISTED ABOVE? YES ☒ NO ☐

IF YES, please list and indicate the fee for each:

Lithium Taping fee \$.60 per lb

Non Conforming Waste Disposal/Waste Liquid \$20.00 per gallon



**Bid Synopsis  
For  
Battery Recycling Services**

Lead Public Agency: Livingston County

RFP Issued & Publicly Posted: 10/25/19

Solicitation: RFP-LC-19-06

Public Postings: Livingston Co. Website (livgov.com)  
BidNet (bidnetdirect.com/mitn)

RFP Due Date: 11/21/19

Proposals Received: 1

The Evaluation Committee has completed evaluation of the proposal received for the Request for Proposals referenced above. Below is a recap of the bid evaluation.

Even though only one proposal was received, the RFP was publicly posted on two websites. As a result, over 100 qualified companies were notified of the solicitation, and the bid documents were downloaded by 16. Even though only one (1) qualified submission was received, the Evaluation Committee believes that the process created a system of free and open competition and should be considered valid.

The response was received from Battery Solutions. Battery Solutions provided their response within the timeframe outlined in the RFP. They are the incumbent contractor, and the County has been satisfied with their services.

The evaluation consisted of a review of the response to the Request for Proposals Scope of Work, and the Attachment A price submission. A review of the minimum requirements in Section 1.1 revealed that Battery Solutions met the minimum mandatory requirements. An evaluation was then made on the remainder of Section 1, the Company Profile in Section 2.1, References in Section 2.2, and Pricing information from Attachment A. The PA 517 certification was completed and notarized, and the bidder certifications were completed and signed per the bid instructions.

After a review of the pricing submitted by Battery Solutions, although the pricing was reasonable, it was decided to request "best and final offer" pricing in an attempt to reduce the County's costs for these services and provide a better value to the taxpayers. Battery Solutions responded to this request by reducing their price on six items.

Based on this evaluation, it is recommended that a contract be offered to Battery Solutions to provide battery recycling services for a three-year base contract with two one-year renewal options for a total contract renewal period not to exceed five years.



**LIVINGSTON COUNTY, MICHIGAN**  
**DEPARTMENT OF PUBLIC WORKS**

2300 E. Grand River Ave., Suite 105, Howell, MI 48843

Phone 517-545-9609 Fax 517-545-9658

Web Site: <https://www.livgov.com/dpw/Pages/default.aspx>

## Memorandum

**To: Livingston County Board of Commissioners**  
**From: Robert Spaulding, DPW/Solid Waste Coordinator**  
**Date: February 12, 2020**  
**Re: Resolution Authorizing an Agreement with Battery Solutions, LLC. to Provide Battery Recycling Services - Drain**

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The Livingston County Department of Public Works is requesting Board of Commissioners' approval to contract with Battery Solutions, LLC. to provide battery recycling collection and disposal services. The 2020-budgeted amount for these services is \$15,000 and the current contract for this service has expired.

Per the County Procurement Policy, a competitive bid process was performed in which the bid was posted on the Michigan Inter-governmental Trade Network (MITN), the County website, and (1) one company was sent the solicitation directly. As a result, the solicitation reached a large group of qualified companies and even though one (1) submission was received, the evaluation committee (EC) believes the process created a system of free and open competition and should be considered valid. Please find the attached Bid Summary.

Prior to the expiration of the contract, Battery Solutions, LLC. provided exemplary customer service, quality collection and recycling services. As a result, we are requesting the attached resolution be approved which authorizes a contract with Battery Solutions, LLC. to provide battery recycling services for a period of three (3) years with up to (2) one-year renewal options for a total contract period not to exceed five (5) years.

Thank you for your consideration. If you have any questions regarding this matter, please contact me.

**From:** [Robert Spaulding](#)  
**To:** [Elizabeth Young](#)  
**Subject:** 2020 Budget for battery Recycling  
**Date:** Thursday, February 13, 2020 8:43:06 AM

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Elizabeth

The amount that we budgeted for the Battery recycling in 2020 was \$15,000.

Thanks

Robert A. Spaulding  
Livingston County DPW Coordinator  
2300 E. Grand River Ave. Suite 105  
Howell MI 48843  
Office: 517-546-0040  
Direct: 517-552-6781  
Cell: 517-404-6428

RESOLUTION

NO: [Title]

LIVINGSTON COUNTY

DATE: Click or tap to enter a date.

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**Resolution Authorizing the Purchase and Installation of additional VHF Microwave Equipment for the Fire and EMS Paging System and a supplemental appropriation – 911 Central Dispatch**

**WHEREAS,** As part of the established dispatching system, the Livingston County 911 center sends alert tones through a VHF system to EMS and/or fire department personnel when a call for service is requested, and this is most important when responders are on-call or work 24-hour shifts which require them to sleep, or when a department is already working a call and need to be notified of a new reported incident; and

**WHEREAS,** the current VHF paging (alerting) system in Livingston County is consistently experiencing patchy communications and periods of outages in the areas including Hartland, Brighton, Howell, Green Oak, and Hamburg, where the VHF alerting system runs primarily on shared fiber, and that fiber is not dedicated to public safety use nor is it easily accessible for repair in a timely manner when necessary for emergency purposes; and this creates unnecessary liability for Livingston County and its emergency responders; and

**WHEREAS,** a solution to assist in creating a more reliable and robust infrastructure for the VHF alerting system county-wide is to install additional VHF microwaves throughout the affected areas creating a link that would tie-in with the existing successfully-operating VHF microwave system; and the areas of shared fiber would then become a means of secondary redundancy to the VHF alerting system; and

**WHEREAS,** Livingston County 911 wishes to waive the Procurement Policy provisions and contract with the original and current Livingston County VHF service provider, Comsource, for the VHF microwave system expansion project in an amount not to exceed \$285,000; and

**WHEREAS,** funding for same is available in Central Dispatch fund 261 reserves.

**THEREFORE BE IT RESOLVED** that the Livingston County Board of Commissioners hereby authorizes waiving the Procurement Policy provisions and allows for purchase order/contract issuance to Comsource for the purchase and installation of the necessary equipment to complete the VHF microwave project in an amount not to exceed \$285,000.

**BE IT FURTHER RESOLVED** that the Livingston County Board of Commissioners hereby authorizes a supplemental appropriation required in Fund 261 to effectuate this project.

**BE IT FURTHER RESOLVED** that the Chair of the Livingston County Board of Commissioners is hereby authorized to sign any and all documents required for this project after review by legal counsel.

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MOVED:  
SECONDED:  
CARRIED:



# Memorandum

**To: Livingston County Board of Commissioners**

**From: Chad Chewning, 911 Director**

**Date: January 17, 2020**

**Re: VHF Microwave Project**

Livingston County utilizes a VHF system of technology to notify EMS and Fire responders of calls for service which are requested in their area. The VHF system is initiated by the dispatch staff who first generate a call for service in the computer, and then send an alert tone to the responders' minitor devices which they carry; this provides an audible alert to the responders advising there is a call for service in their area requiring response. This is most important when responders are on-call or work 24-hour shifts which require them to sleep, or when a department is already working a call and need to be notified of a new reported incident.

Unfortunately, we have consistently experienced problems with lack of reliability for the current VHF system, and have experienced patchy communication and outages in several areas, which creates a liability for Livingston County and the responding agencies for a possible lack of appropriate response to the citizens in need of assistance in our weak-coverage areas. The most significant and consistent outages are in the areas where fiber is not owned by the county and solely dedicated to public safety, which would include areas in Hartland, Brighton, Howell, Green Oak, and Hamburg. The remainder of the county is serviced through a system of microwaves which works very well.

In order to create a reliable and more robust infrastructure for notifications in the affected areas of outages, Livingston County 911 has worked with our current VHF service provider to determine the best solution to the problem. Through several months of research, testing, and time and budgetary constraints, we have determined the most appropriate primary source to run the VHF system for these weak-areas is through microwave links, and to use the current shared fiber as a means of back-up.



Prepared for

# COMSOURSE

**LINE OF SITE PATH SURVEY**  
Central 135' to Brighton 160'

**LOS Completed 11-24-19**  
**By: Metro Wireless**

## Site Data

### Site 1

Site Name: **Central**

Latitude: 42.6106483

Longitude: -83.9546496

Street Address: 300 S

Highlander Way

City, State: Howell, MI

County: Livingston

### Site 2

Site Name: **Brighton**

Latitude: 42.5807729

Longitude: -83.7540619

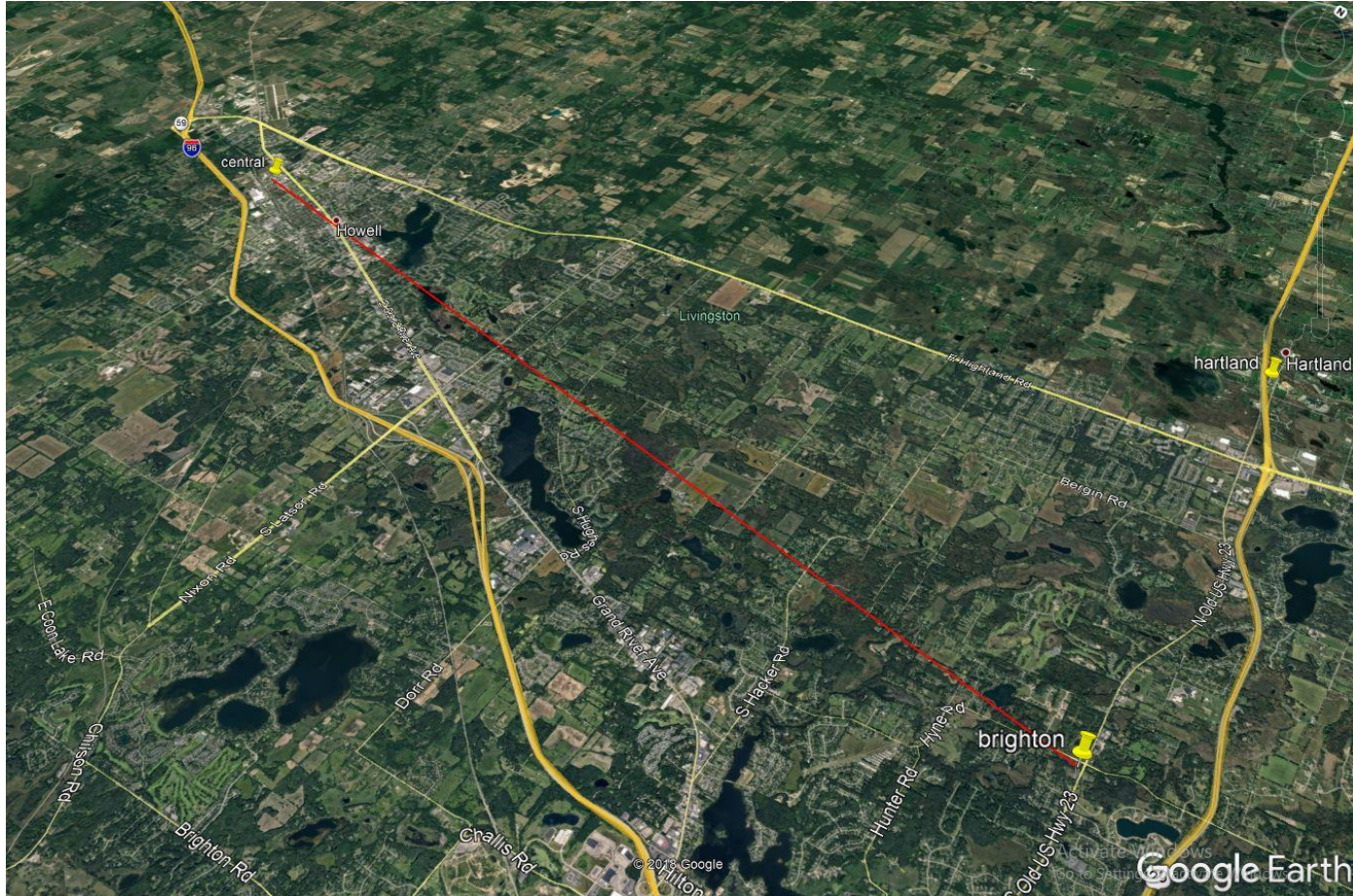
Street Address: 1580 S Old

US Hwy 23

City, State: Brighton, MI

County: Livingston

# MAP Brighton to Central



# Antenna Locations (Wide Angle and Zoom)

## Site 1: Central 135'

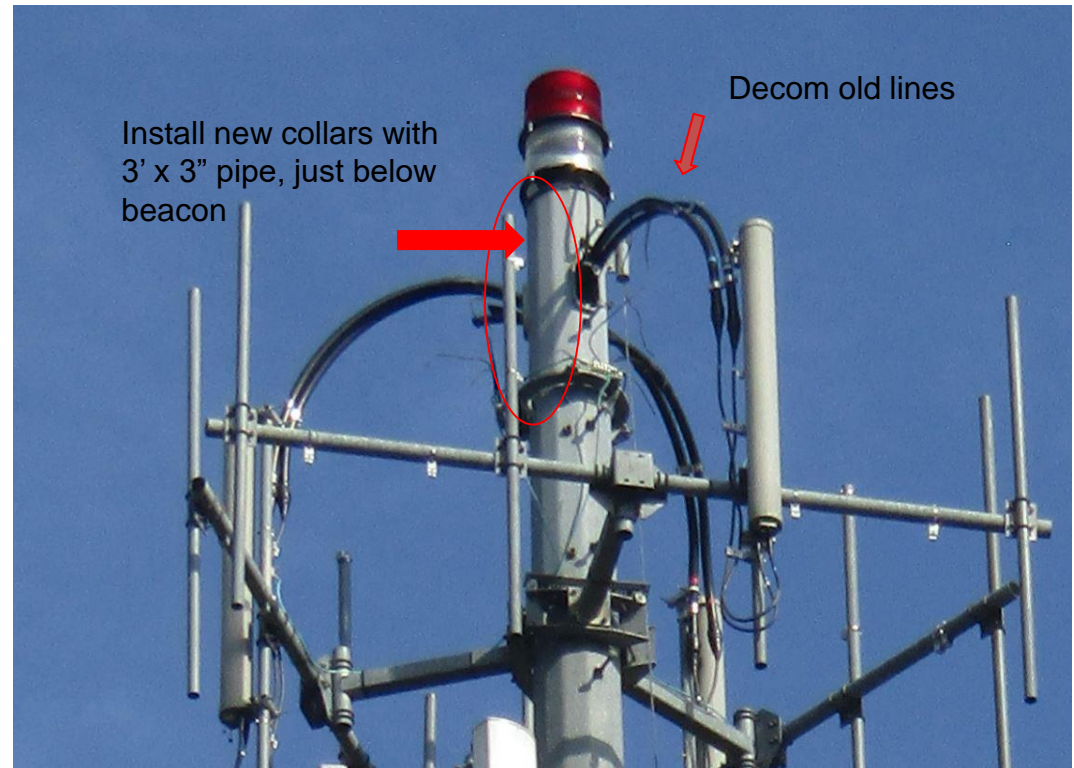
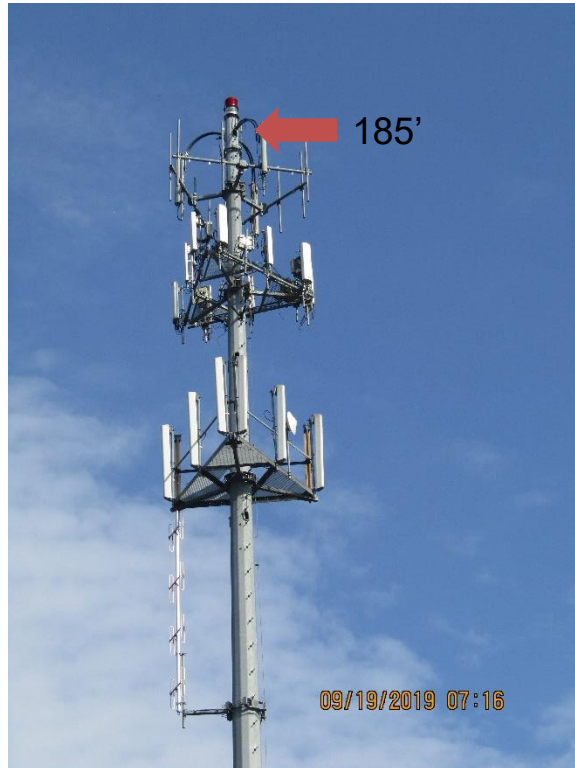


Microwave can be mounted at 220' on north east leg using a 3" x 48" pipe mount to the tower leg



# Antenna Locations (Wide Angle and Zoom)

## Site 2 : Brighton 160'



Microwave antenna to be mounted on 3' pipe with New collars on tower,  
decom old lines coming out top portholes

# Far End Wide Angle

- Line of sight verified from centerline of 185 ft.
- Proposed MW centerline at 185 ft.
- Clear LOS

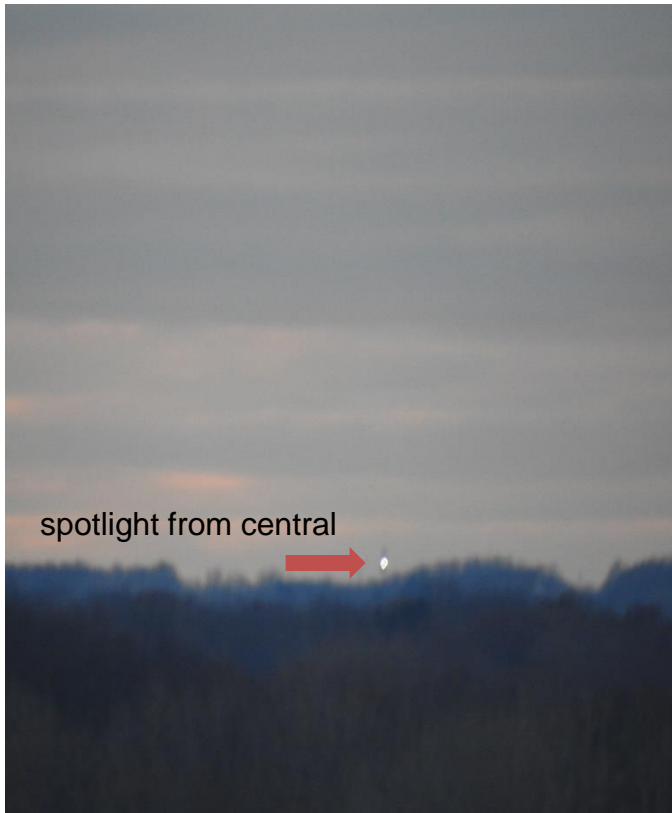
## Site 1: Central

Azimuth: 281°



Wide angle photo from Brighton facing Central @ 185 ft. centerline.

# Far End Zoom



Zoomed photo from Brighton facing Central @ 185 ft. centerline.

# Far End Wide Angle

- Line of sight verified from centerline of 135 ft.
- Proposed MW antenna placement is 135 ft. centerline.
- Clear LOS.

## Site 2: Brighton

Azimuth: 101°



Wide angle photo from Central facing Brighton @ 135 ft. centerline.



# Far End Zoom



Zoomed angle photo from Central facing Brighton @ 135 ft. centerline. Was extremely hard to zoom in  
This is the only photo I could get with Kyle's strobe at Brighton

# Site Signage

No Gate  
No signage

**Site Central**

# Site Signage



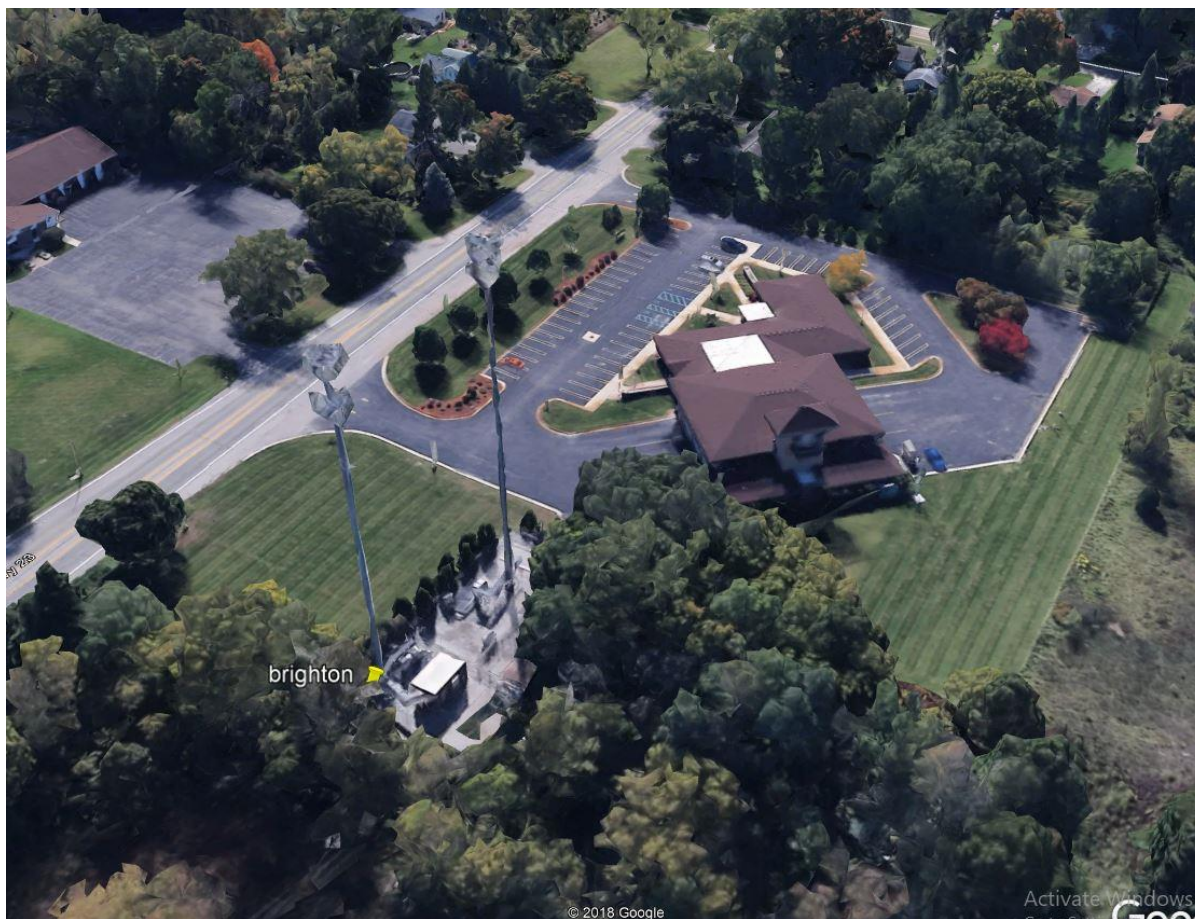
## Site Brighton

# Aerial Site 1 Central





# Aerial Site 2 Brighton



# Survey Photos Site Central





# Survey Photos Site Brighton



# Full Tower



Site Brighton



Site Central



Prepared for

# COMSOURSE

**LINE OF SITE PATH SURVEY**  
Green Oak 220' to Brighton 160'

**LOS Completed 11-24-19**  
**By: Metro Wireless**

## Site Data

### Site 1

Site Name: **Green Oak**

Latitude: 42.4686294

Longitude: -83.7578227

Street Address: 9384

Whitmore Lake Rd

City, State: Brighton, MI

County: Livingston

### Site 2

Site Name: **Brighton**

Latitude: 42.5807729

Longitude: -83.7540619

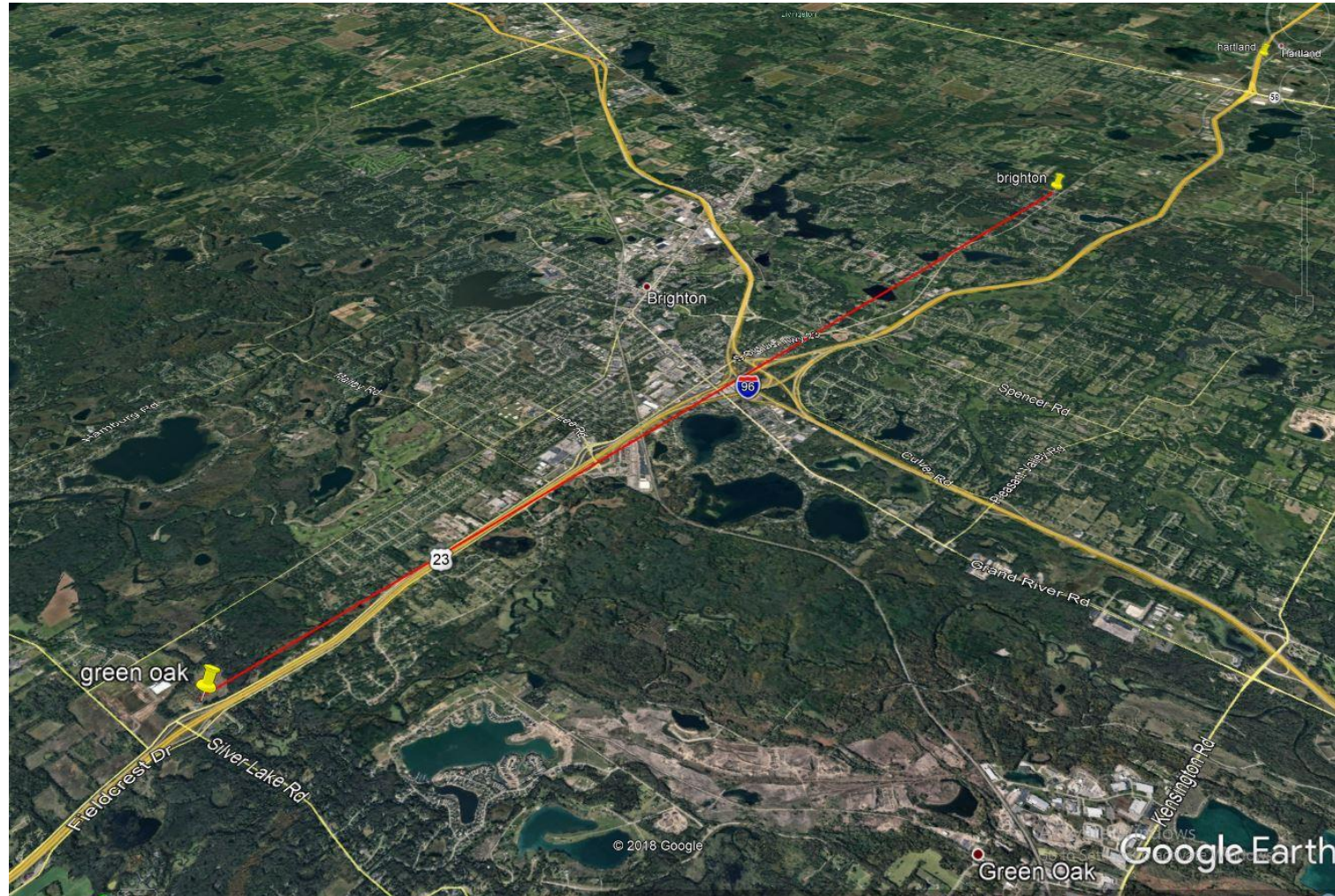
Street Address: 1580 S Old

US Hwy 23

City, State: Brighton, MI

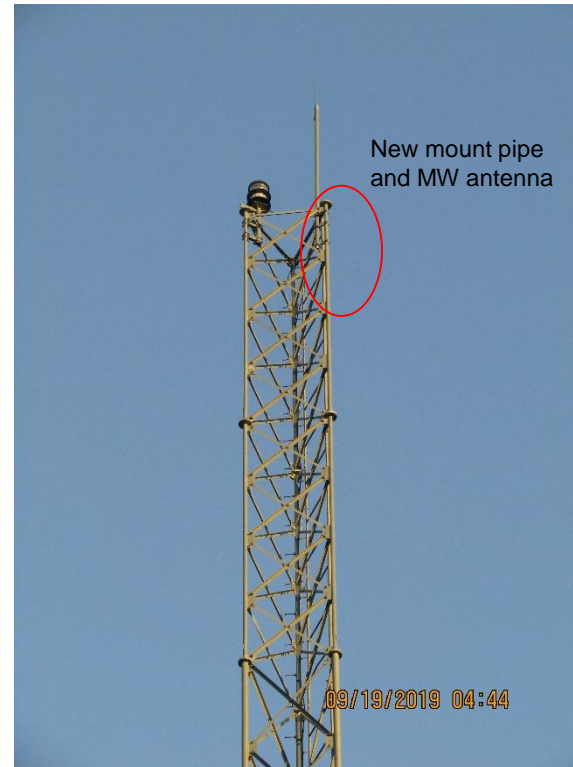
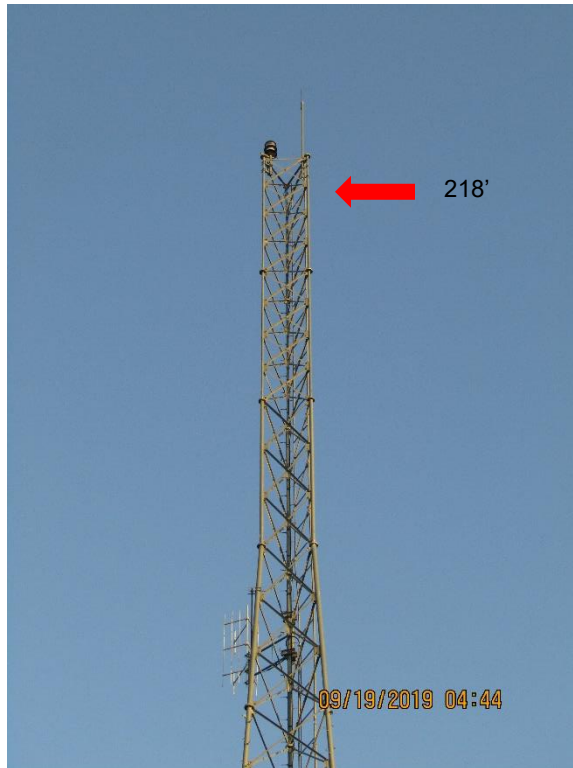
County: Livingston

# MAP Brighton to Green Oak



# Antenna Locations (Wide Angle and Zoom)

## Site 1: Green Oak 220'

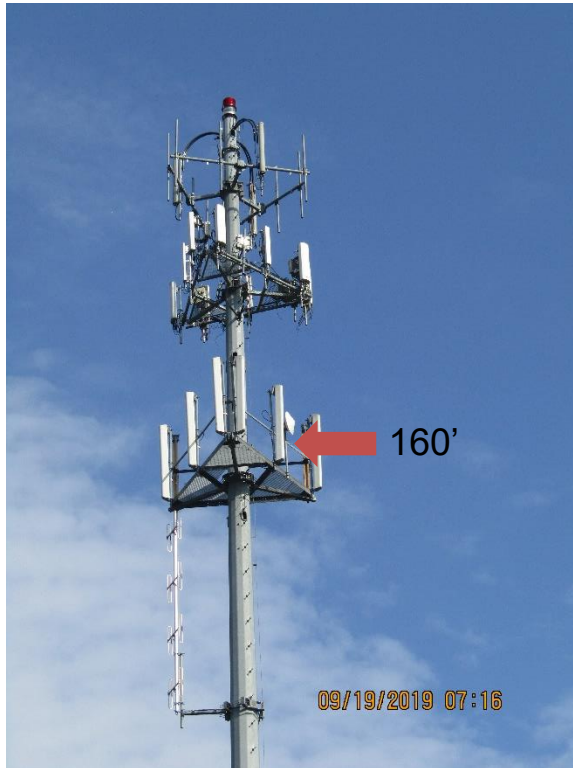


Microwave can be mounted at 220' on north east leg using a 3" x 48" pipe mount to the tower leg



# Antenna Locations (Wide Angle and Zoom)

## Site 2 : Brighton 160'



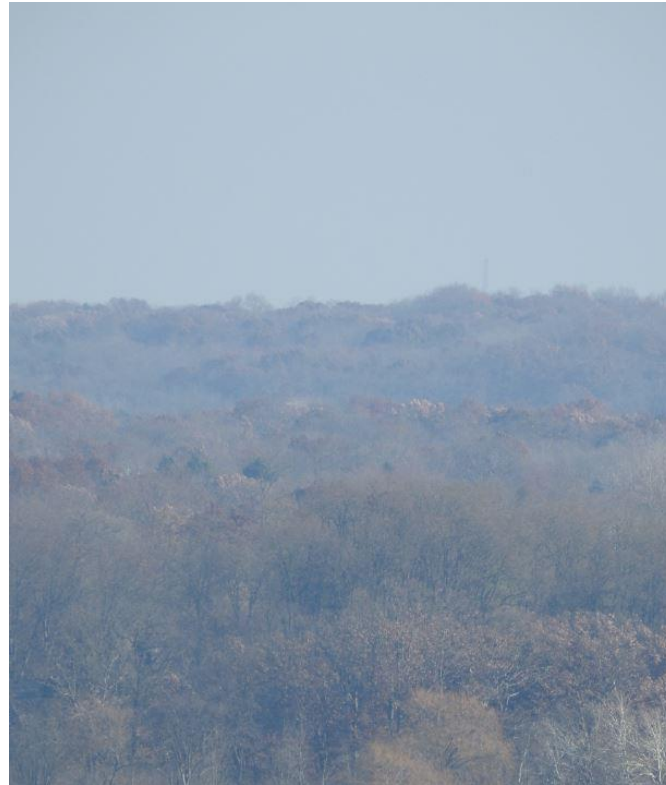
Microwave antenna can be mounted on existing antenna mast after decommissioning old antennas

# Far End Wide Angle

- Line of sight verified from centerline of 160 ft.
- Proposed MW centerline at 160 ft.
- Clear LOS

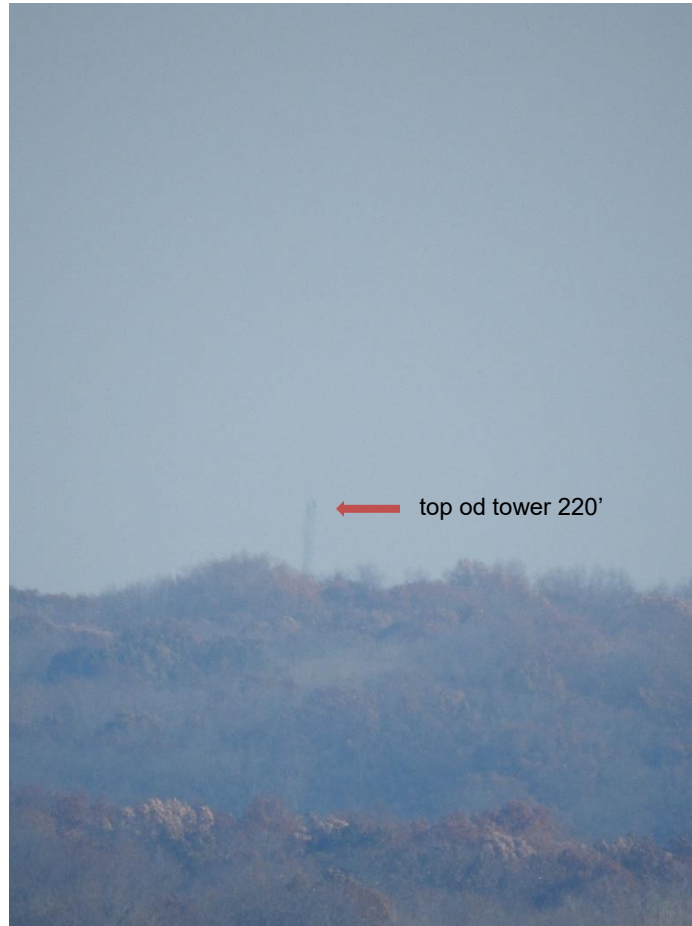
## Site 1: Green Oak

Azimuth: 181°



Wide angle photo from Brighton facing Green Oak @ 160 ft. centerline.

# Far End Zoom



Zoomed photo from Brighton facing Green Oak @ 160 ft. centerline.

# Far End Wide Angle

## Site 2: Brighton

- Line of sight verified from centerline of 220 ft.
- Proposed MW antenna placement is 220 ft. centerline.
- Clear LOS.

Azimuth: 1°



Wide angle photo from Green Oak facing Brighton @ 220 ft. centerline.



# Far End Zoom



Zoomed angle photo from Green Oak facing Brighton @ 220 ft. centerline.

# Site Signage

No signage on Gate

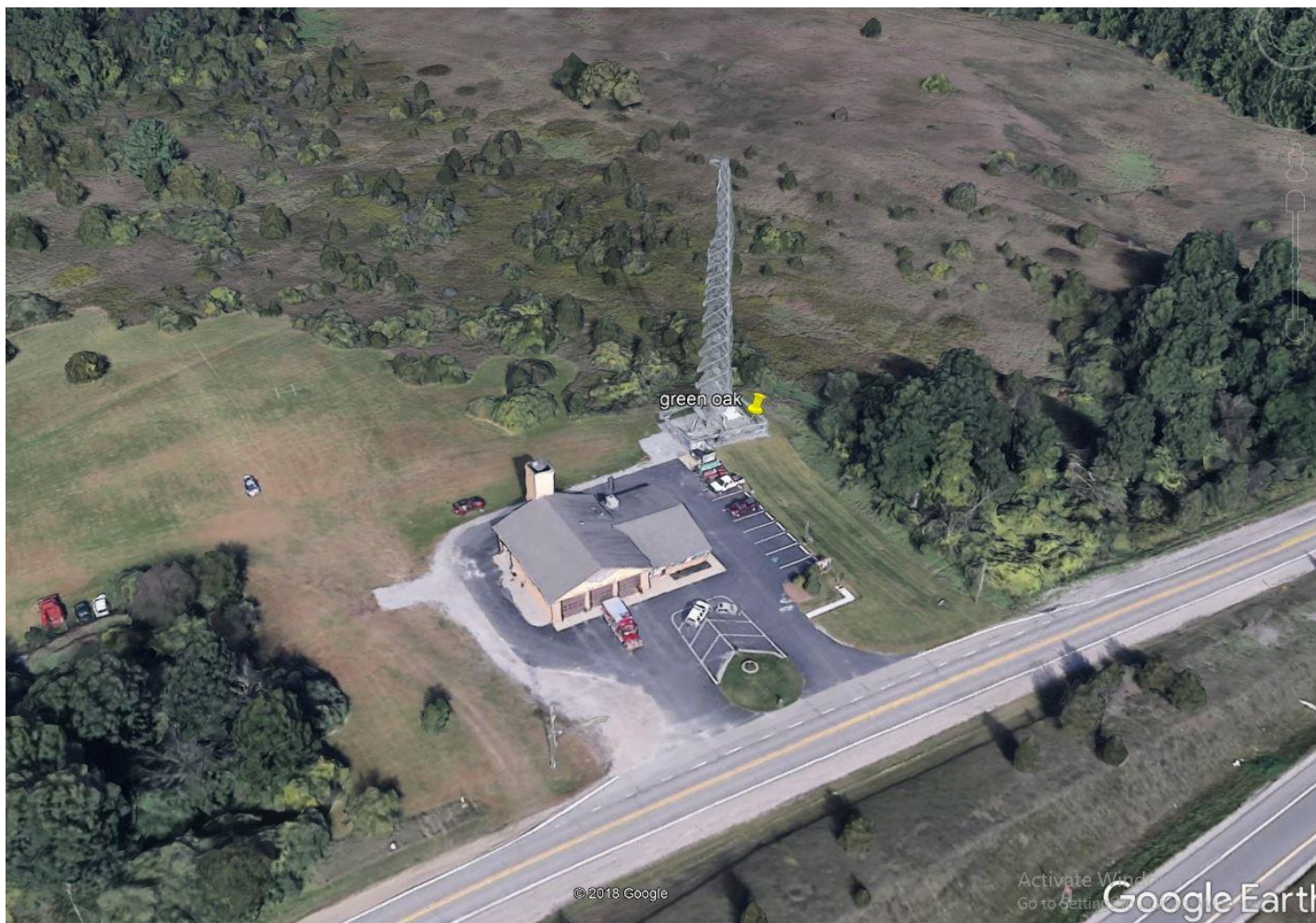
**Site Green Oak**

# Site Signage



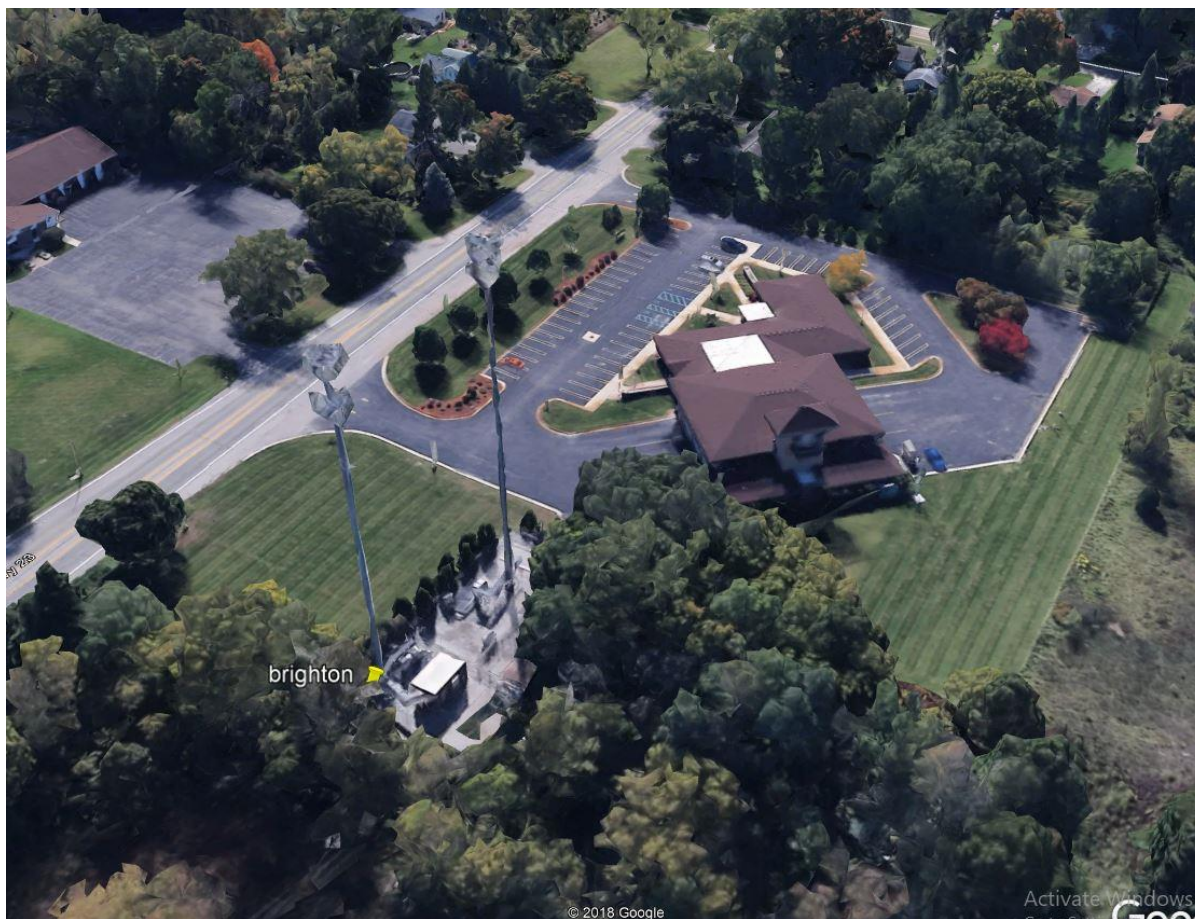
## Site Brighton

# Aerial Site 1 Green Oak





# Aerial Site 2 Brighton





# Survey Photos Site Green Oak





# Survey Photos Site Brighton



# Full Tower



Site Brighton



Site Green Oak



Prepared for

# COMSOURSE

**LINE OF SITE PATH SURVEY**  
Hartland 118' to Brighton 160'

**LOS Completed 11-24-19**  
**By: Metro Wireless**

# Site Data

## Site 1

Site Name: **Hartland**

Latitude: 42.6497571

Longitude: -83.7551402

Street Address: 3205

Hartland Rd

City, State: Hartland, MI

County: Livingston

## Site 2

Site Name: **Brighton**

Latitude: 42.5807729

Longitude: -83.7540619

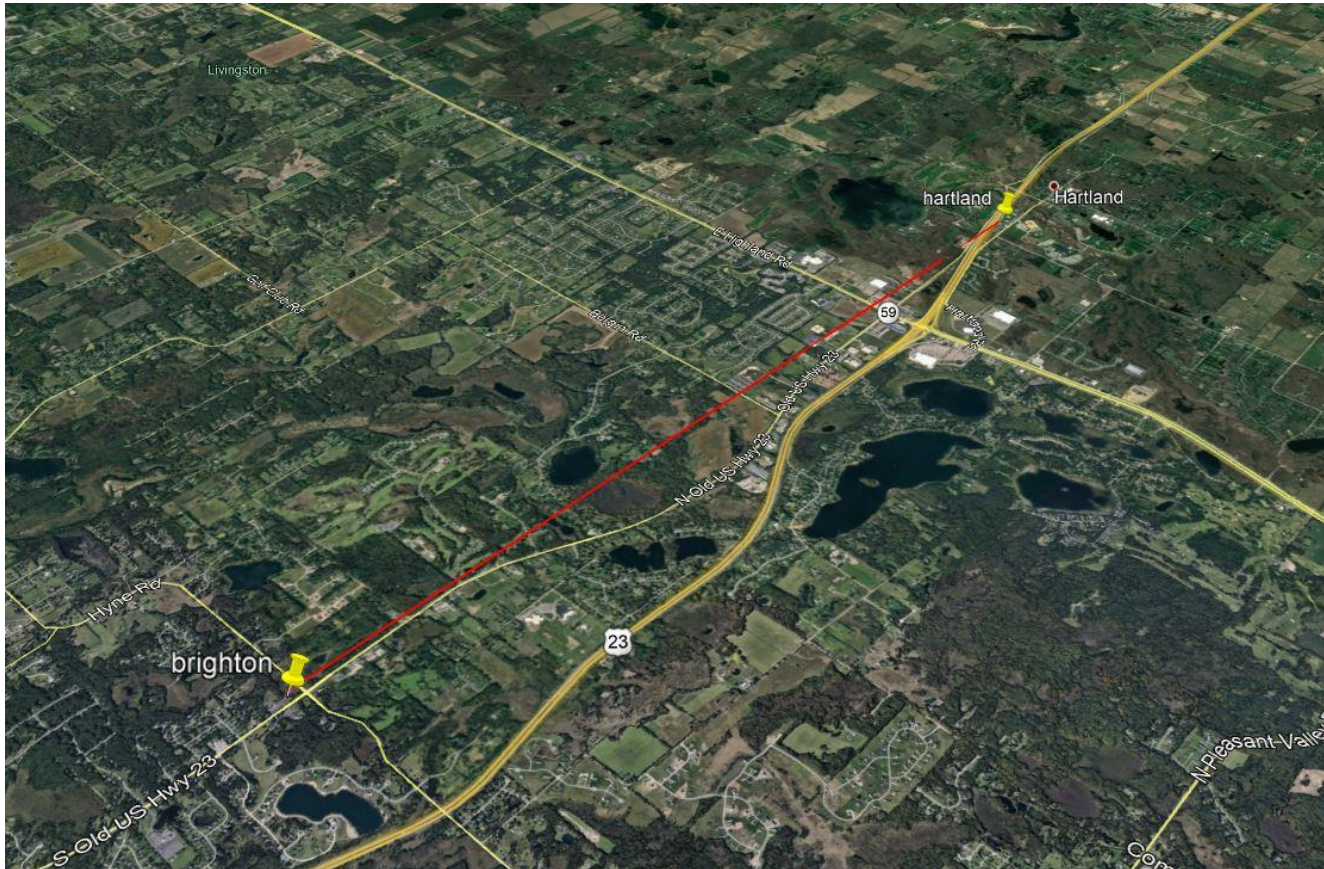
Street Address: 1580 S Ols

US Hwy 23

City, State: Brighton, MI

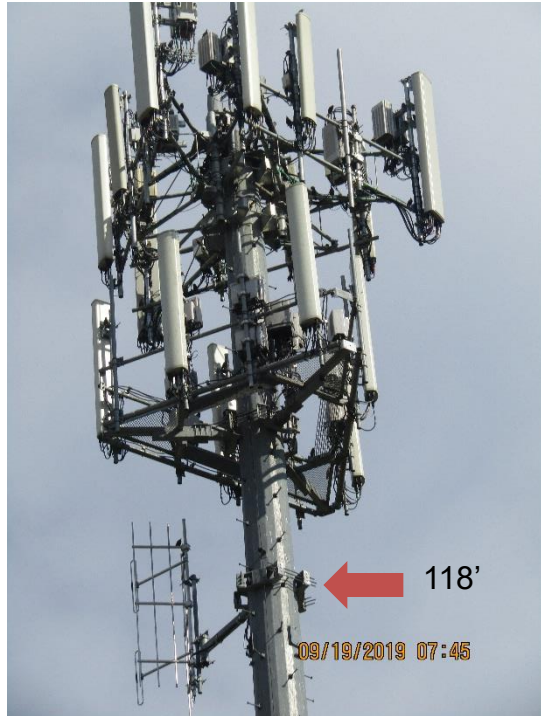
County: Livingston

# MAP Brighton to Harland



# Antenna Locations (Wide Angle and Zoom)

## Site 1: HARTLAND 118'

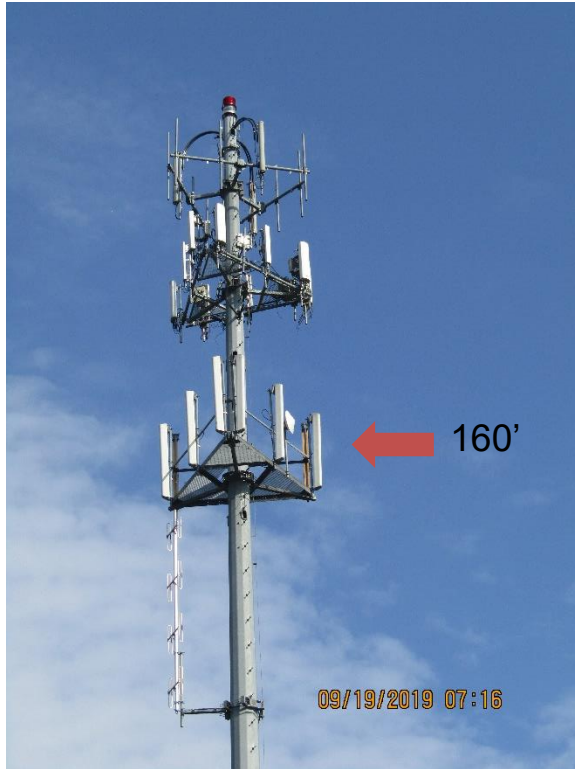


Microwave antenna can be mounted to existing collar.  
Need an additional 2' stand off arm and 2<sup>nd</sup> collar installed



# Antenna Locations (Wide Angle and Zoom)

Site 2 : Brighton 160'



Microwave antenna to be mounted on existing platform after decommissioning old antennas



# Far End Wide Angle

- Line of sight verified from centerline of 160 ft.
- Proposed MW centerline at 160 ft.
- Clear LOS

## Site 1: Harland

Azimuth: 360°



Wide angle photo from Brighton facing Harland @ 160 ft. centerline.

# Far End Zoom



Zoomed photo from Brighton facing Hartland @ 160 ft. centerline.

# Far End Wide Angle

- Line of sight verified from centerline of 118 ft.
- Proposed MW antenna placement is 118 ft. centerline.
- Clear LOS.

## Site 2: Brighton

Azimuth: 180°



Wide angle photo from Hartland facing Brighton @ 118 ft. centerline.

# Far End Zoom



Zoomed angle photo from Hartland facing Brighton @ 118 ft. centerline.

# Site Signage



Site Hartland

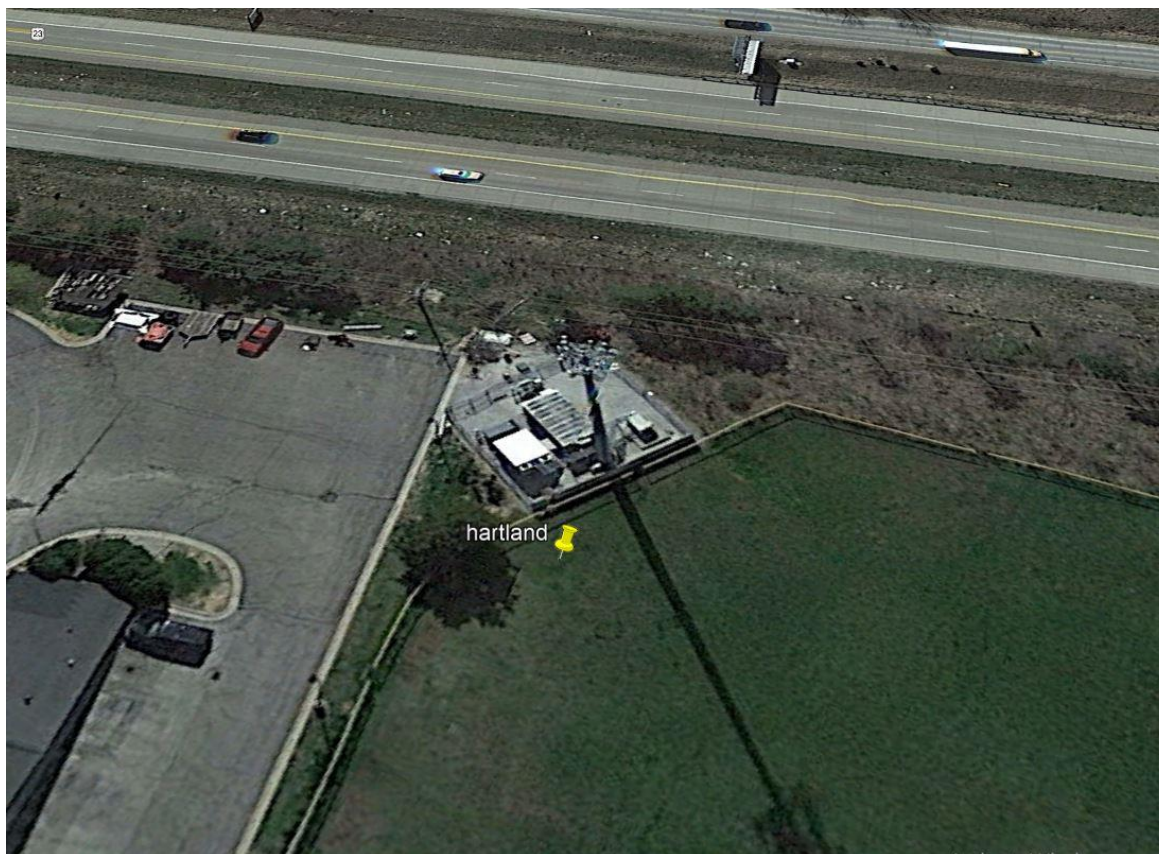


# Site Signage

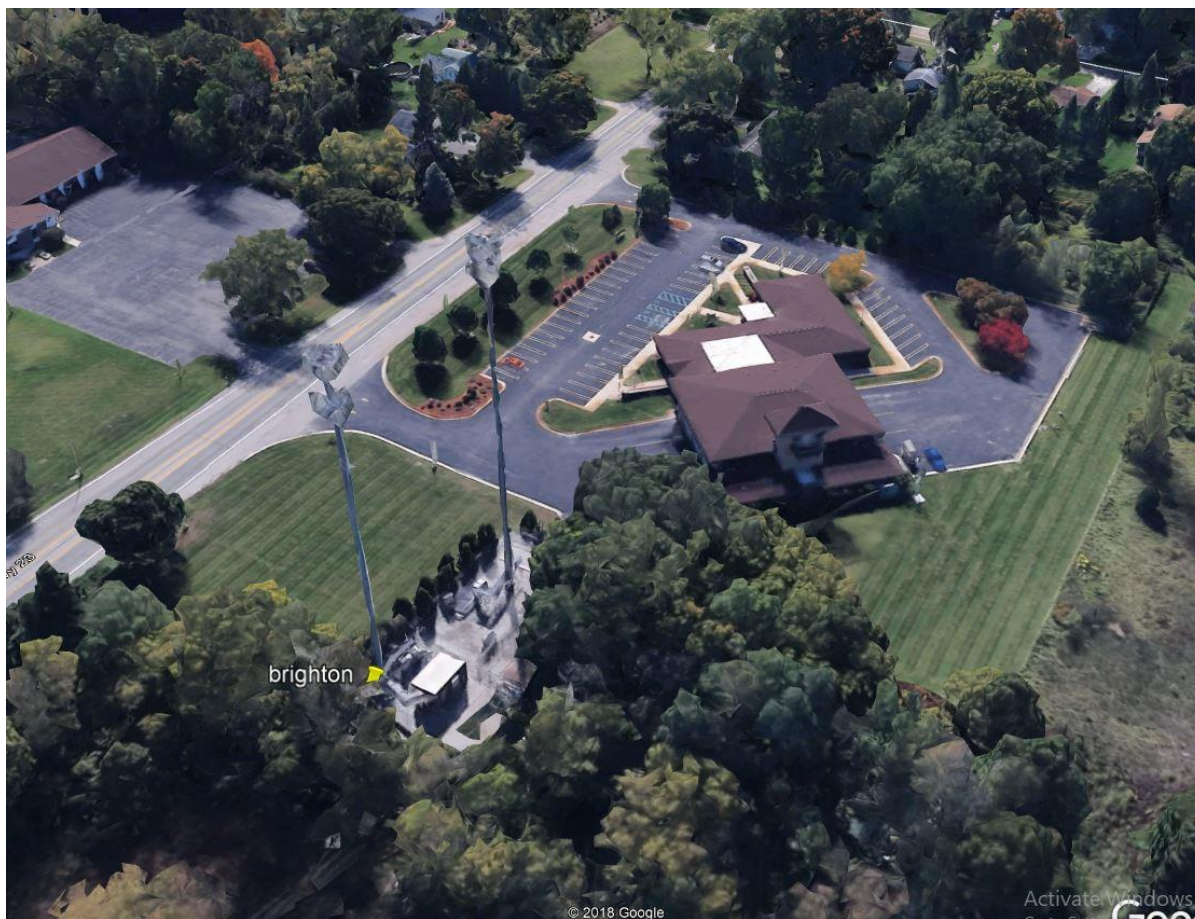


## Site Brighton

# Aerial Site 1 Hartland (not in 3D)

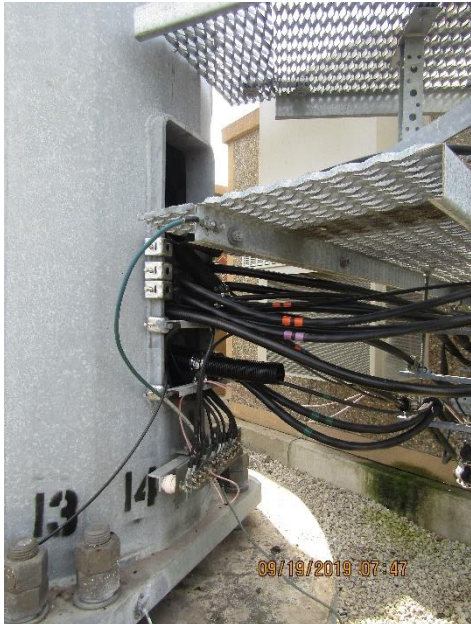


# Aerial Site 2 Brighton





# Survey Photos Site Hartland





# Survey Photos Site Brighton





# Full Tower



Site Brighton



Site Hartland

Prepared for

# COMSOURSE

**LINE OF SITE PATH SURVEY**  
Green Oak 170' to Hamburg 125''

**LOS Completed 11-24-19**  
**By: Metro Wireless**

# Site Data

## Site 1

Site Name: **Green Oak**

Latitude: 42.4686294

Longitude: -83.7578227

Street Address: 9384

Whitmore Lake Rd

City, State: Brighton, MI

County: Livingston

## Site 2

Site Name: **Hamburg**

Latitude: 42.4659084

Longitude: -83.8728750

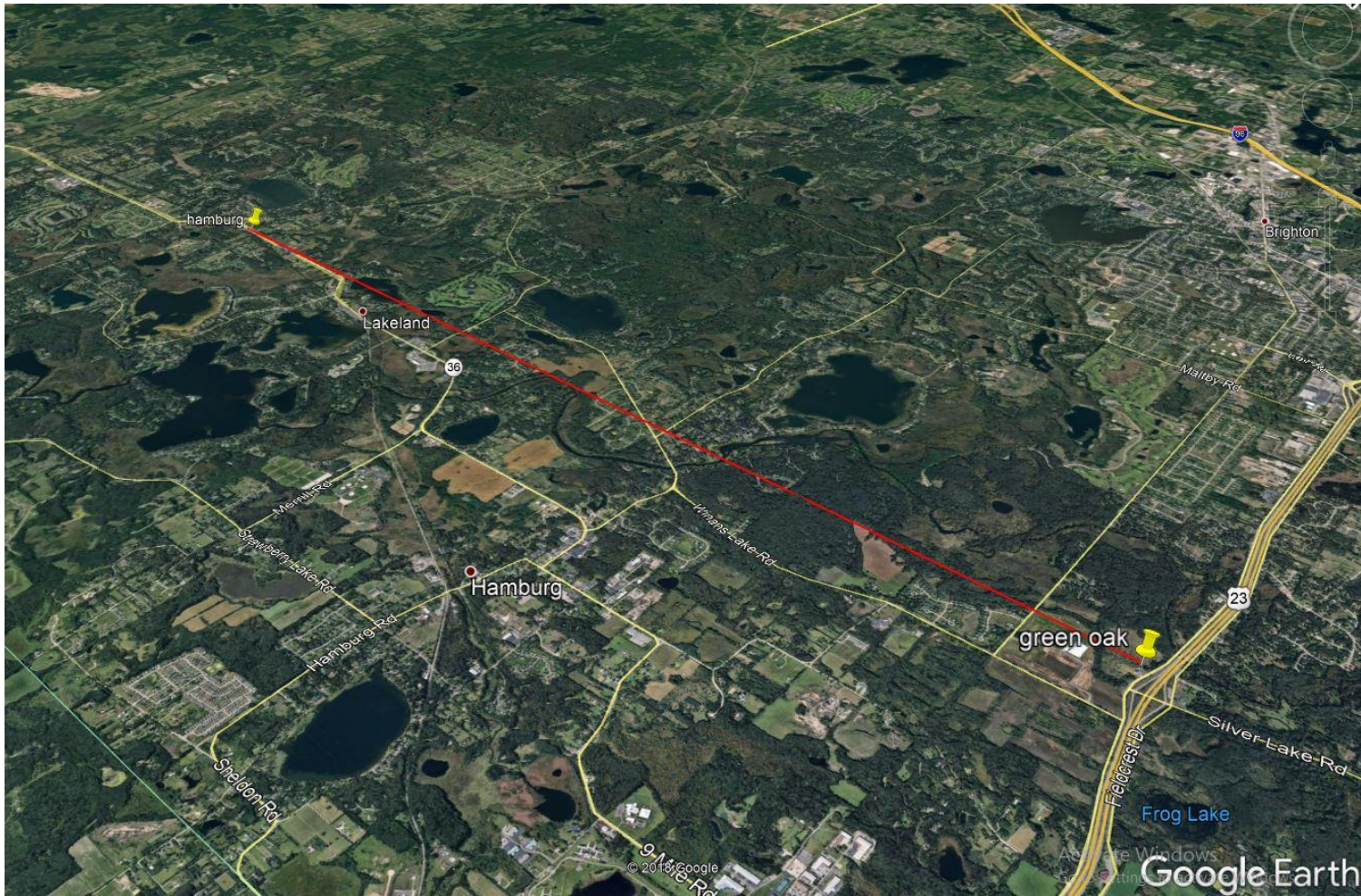
Street Address: 9384

Whitmore Lake Rd

City, State: Brighton, MI

County: Livingston

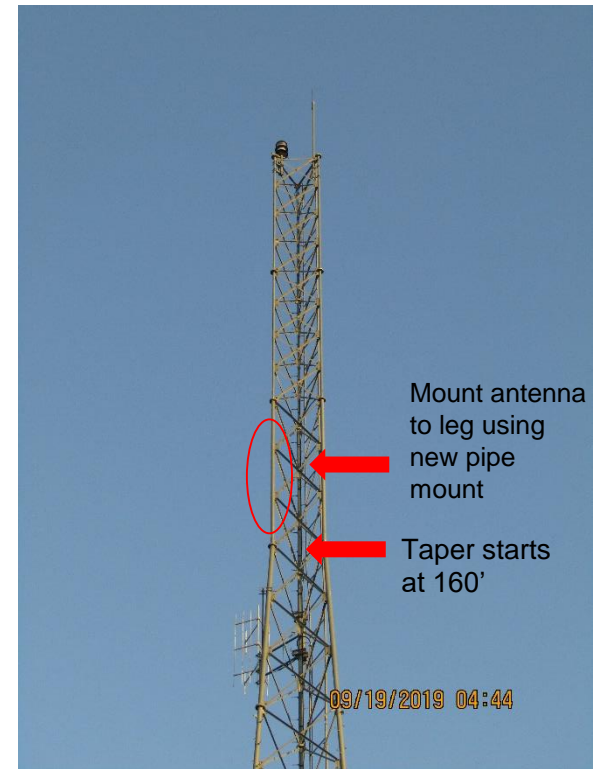
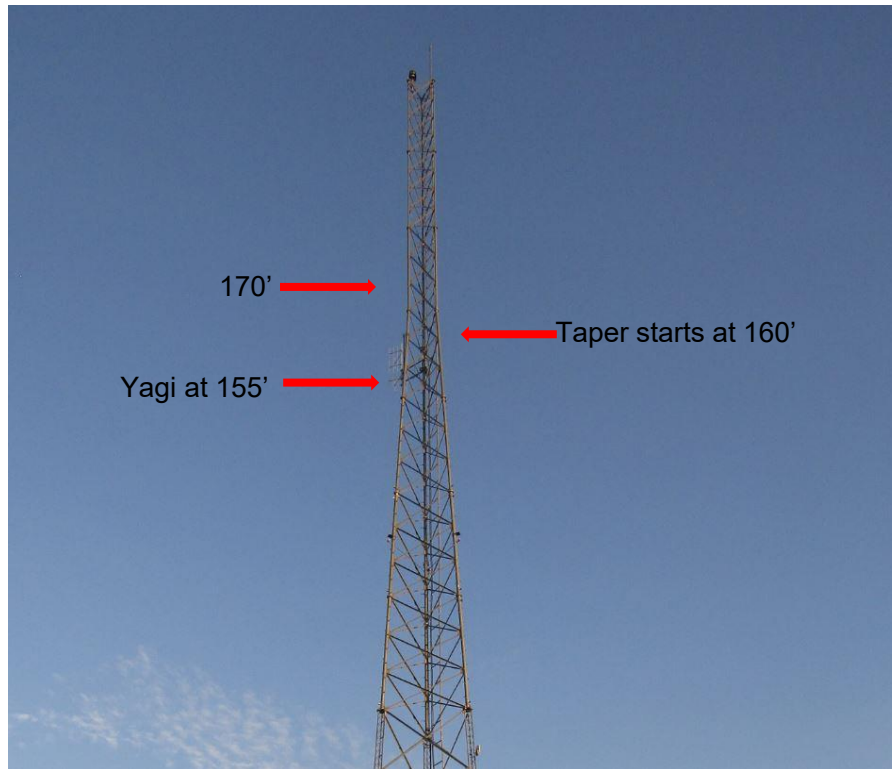
# MAP Hamburg to Green Oak





# Antenna Locations (Wide Angle and Zoom)

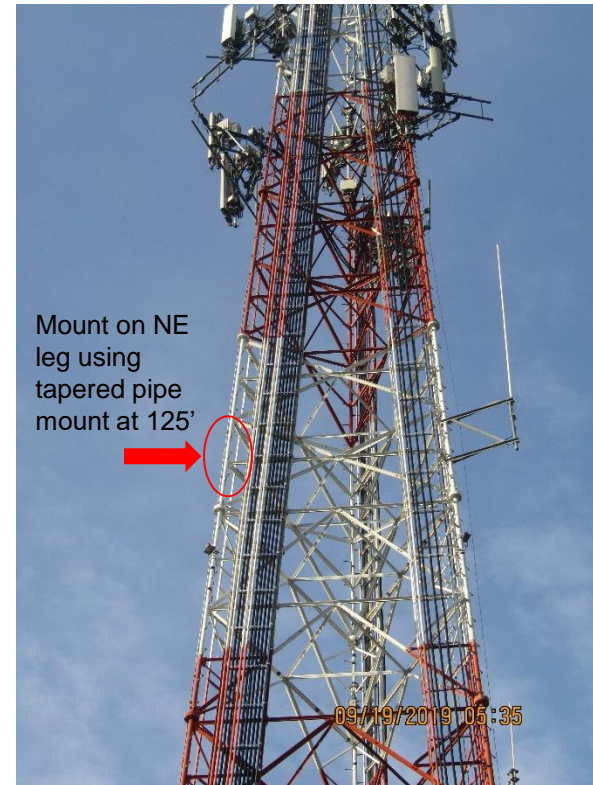
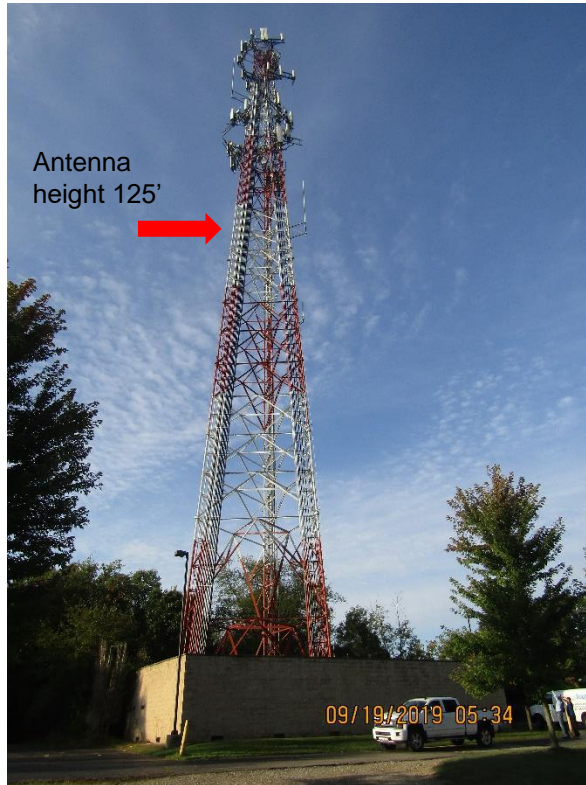
## Site 1: Green Oak 170'



Microwave can be mounted at 170' on southeast leg using a 3" x 48" pipe mount to the tower leg

# Antenna Locations (Wide Angle and Zoom)

## Site 2 : Hamburg 125''



Microwave antenna can be mounted northeast leg using tapered pipe mount

# Far End Wide Angle

- Line of sight verified from centerline of 125 ft.
- Proposed MW centerline at 125 ft.
- Clear LOS

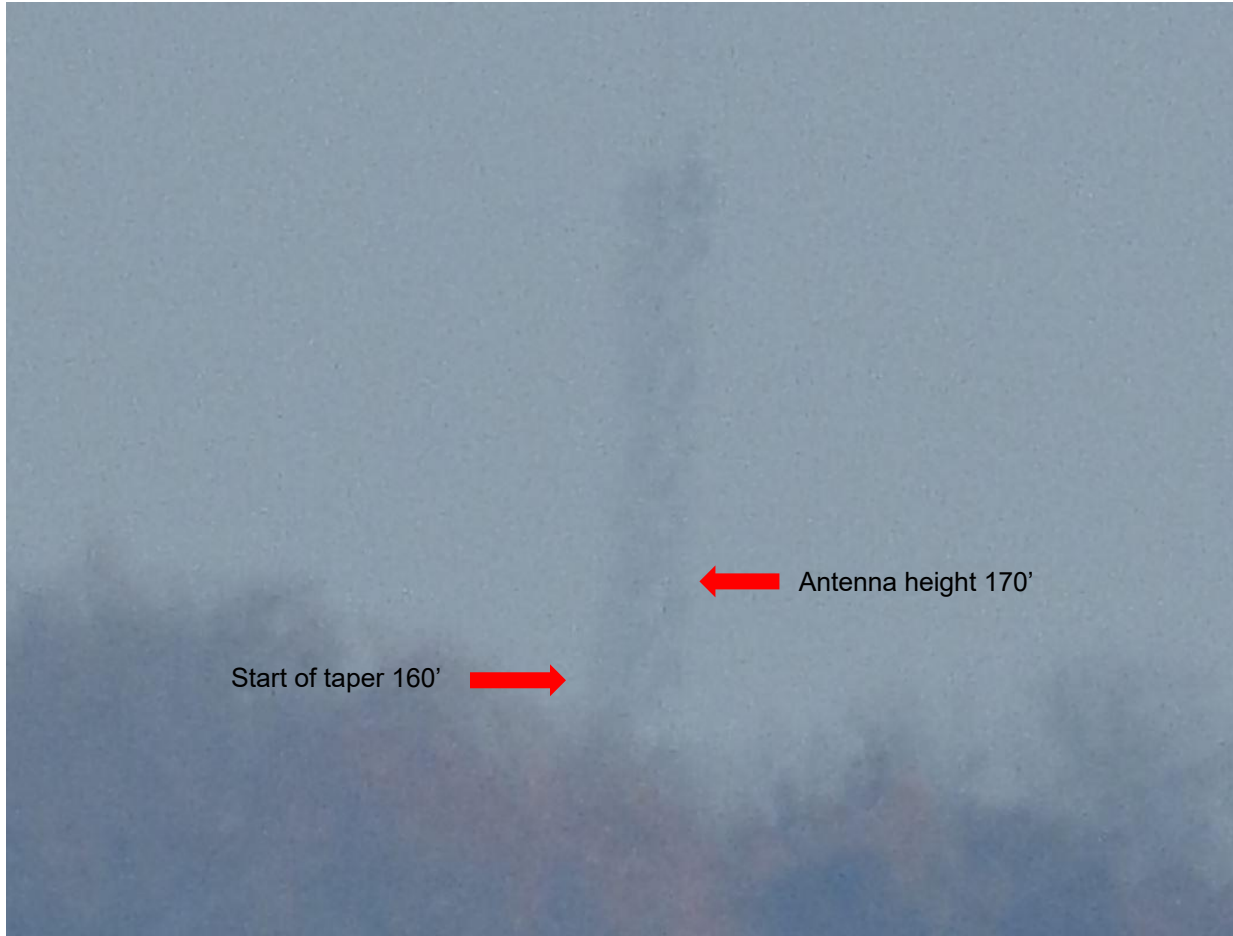
## Site 1: Green Oak

Azimuth: 88°



Wide angle photo from Hamburg facing Green Oak @ 125 ft. centerline.

# Far End Zoom



Zoomed photo from Hamburg facing Green Oak @ 125 ft. centerline.

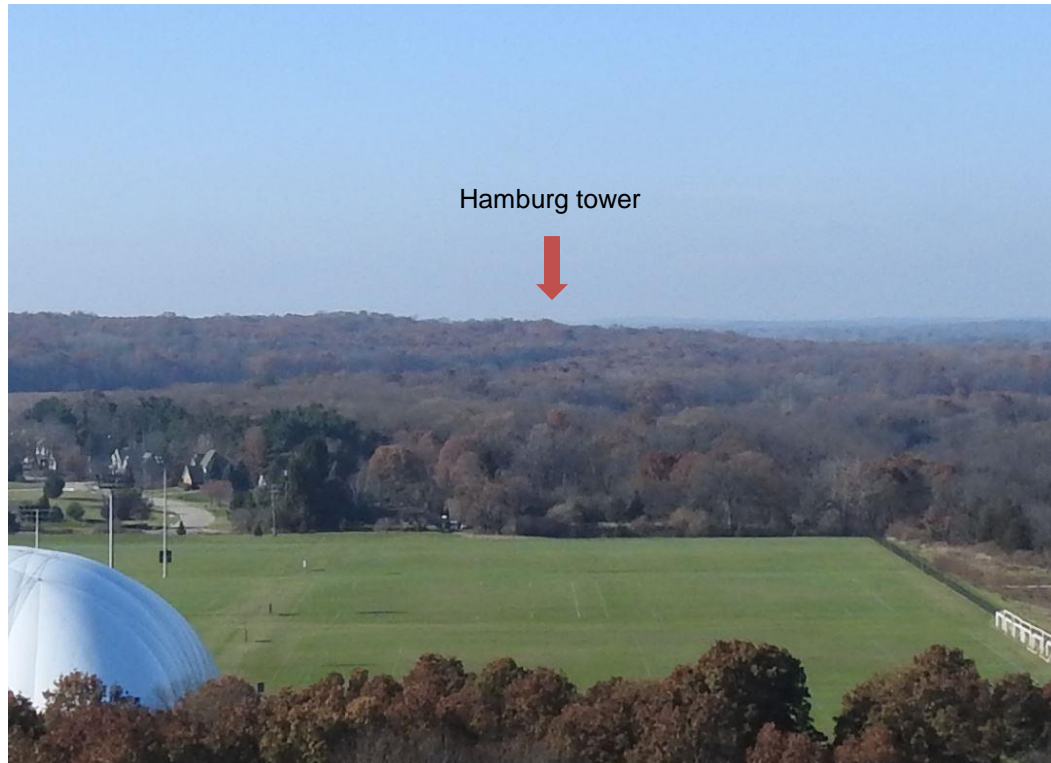


# Far End Wide Angle

- Line of sight verified from centerline of 170 ft.
- Proposed MW antenna placement is 170 ft. centerline.
- Clear LOS.

## Site 2: Hamburg

Azimuth: 268°



Wide angle photo from Green Oak facing Hamburg @ 170 ft. centerline.

# Far End Zoom



Zoomed angle photo from Green Oak facing Hamburg @ 170 ft. centerline.

# Far end Zoom (170' to 220' comparison)



It is the Recommendation of Metro Wireless that the MW dish at either Hamburg OR Green Oak be raised by 20' to avoid a Near LOS Fresnal Zone degradation in the signal

# Site Signage

No signage on Gate

**Site Green Oak**



# Site Signage



# Aerial Site 1 Hamburg





# Aerial Site 2 Green Oak



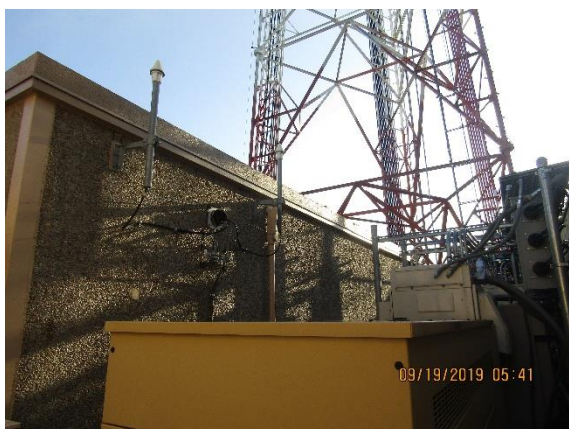


# Survey Photos Site Green Oak

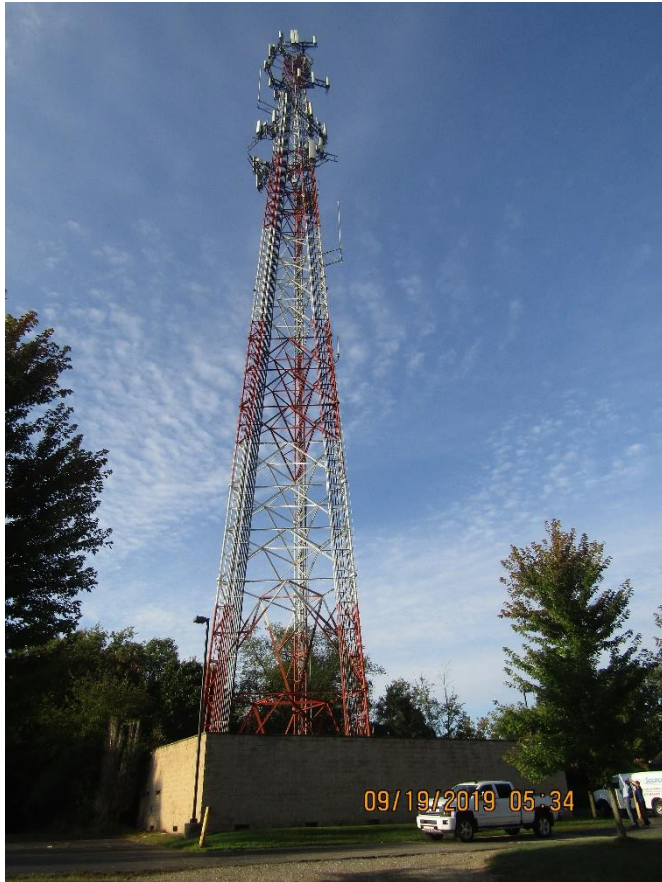




# Survey Photos Site Hamburg



# Full Tower



Site Hamburg



Site Green Oak

Livingston County Central Dispatch 911

December 15, 2019

Attn: Joni Harvey

Deputy Director

300 High Street

Howell, MI 48843

**Subject: VHF Microwave Links For Fire Paging**

Dear Joni & Chad,

Pursuant to our draft proposal review meeting held on 11/18/19 ComSource, Inc. is pleased to present this proposal for replacing your four (4) existing tie lines with Unlicensed Government use only 5.9 GHz microwave links.

This submission will replace the current intermittent tie lines with Point to Point links to be located at Hartland, Brighton, Central, Green Oak and Hamburg.

Our solution provides the necessary componentry, system installation, optimization, project management, and system integration along with first year 24 X 7 on-site post deployment service response for both the new and existing Microwave Links.

Additionally, the pricing contained herein "complies" with the discount structures as listed in Motorola Solutions, Inc.'s MiDeal contract number **071B2200101**.

Our ComSource, Inc. Team truly appreciates the time that you both have given us in the development of this solution.

In closing, we look forward to your favorable consideration of this submission and remain available for any questions that may arise throughout your scrutiny process.

Respectfully submitted,

*Ed Horvath*

ComSource, Inc.

Ed Horvath

Sr. Account Executive/

Government Markets Sales Manager

Cc: Chad Chewning



**MOTOROLA  
SOLUTIONS**  
PLATINUM CHANNEL PARTNER

Corporate Office: 41271 Concept Drive, Plymouth, MI 48170 | 734.738.0800  
Service Center: 1919 Birchwood Drive, Troy, MI 48083 | 248.853.5430

[www.comsourcemi.com](http://www.comsourcemi.com)



**MOTOROLA  
SOLUTIONS**  
Service Elite Specialist



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**MOTOROLA**  
**SOLUTIONS**  
Service Elite Specialist



# LIVINGSTON COUNTY CENTRAL DISPATCH 911

PROPOSAL FOR:

**VHF Microwave Links for Fire Paging**

**December 15, 2019**

SUBMITTED BY:

Ed Horvath - Sr. Account Executive

313-218-3450-Cell [edhorvath@comsourcemi.com](mailto:edhorvath@comsourcemi.com)

**ComSource**  
I N C O R P O R A T E D

The design, technical, pricing, and other information furnished with this submission is proprietary information of ComSource, Inc. and is submitted with the restriction that it is to be used for evaluation purposes only. To the fullest extent allowed by applicable law, the Information is not to be disclosed publicly or in any manner to anyone other than those required to evaluate the Information without the express written permission of ComSource, Inc.

# Integrated Cabling System



## Description

This Outdoor cabinet is customized design to secure, with size:  
18U 700\*800mm

## Door

Front open door with spring lock

## Features

- Lockable front door installed with air-conditioner/heat exchange
- Strong **double wall** type framework
- Plinth design , bottom panel cable entry, can be perfectly fix to floor
- 4 pcs 19" mounting rails
- Several lockable wiring holes on bottom, size of the large hole at the bottom adjustable
- Varies specification upon customers' special requirements

## Standard and Material:

Comply with

ANSI/EIA,RS-310-D;IEC297-2;DIN41491:PART1;DIN41494:PART7;GB/T3047.2-92 standard and ETSI standard.

**Surface Finish:**Degrease, acid pickling, rust prevention and parkerizing,pure water cleaning, static electricity powder coating

**Material:** Zinc-plated plate

**Thickness:**Mounting profile:2.0mm,others: 1.20~1.50 mm

**IP degree:** IP-65/55

**Body color:**RAL7035

## Environment conditions:

Cooling/Ventilation: 500W AC Air conditioner/ 80W heat exchange/4 pcs AC fans

Temperature: -40°C ~+ 60°C

Relative Humidity: ≤95% (at 40°C)

Atmospheric pressure : 70kPa ~ 106kPa



## Sample Image

Ningbo Hi-Tech Zone Webit Telecommunication Equipments Co.,Ltd | No.28 Jiangnan Road,Hi-Tech Zone,Ningbo,China/315040  
[Http://www.webit.cc](http://www.webit.cc) Email:sales6@webitele.com | Tel:86-574-27887231  
[Http://www.webitele.com](http://www.webitele.com) | Fax:86-574-27887832

# Integrated Cabling System



## Packing view:

With standard wooden case, wooden pallet(optional)



# HPD3-4.7

## 0.9 M | 3 FT HIGH PERFORMANCE PARABOLIC REFLECTOR ANTENNA, DUAL-POLARIZED, 4.4-5GHZ

The HP High Performance Series by RadioWaves offers a full line of high performance parabolic antennas engineered to provide ETSI class 2/3 radiation pattern performance as well as excellent gain. RadioWaves field-proven pre-assembled antennas and robust pole-mounts ensure “set and forget” installation with minimal post-installation maintenance. The included radome ensures robust and reliable performance under the most challenging conditions. If it's rugged, it must be RadioWaves!



### FEATURES AND BENEFITS

- High Performance ETSI Class 2/3\* Parabolic Antennas – Excellent performance for a wide range of applications
- Fully Preassembled at the Factory – Simplifies installation on site and guarantees “factory-tested” quality
- Warranty – Industry leading 7-year warranty

\*ETSI Class depends on frequency band

### SPECIFICATIONS

#### General

Antenna Type	High Performance Parabolic Reflector Antenna	Standard RF Connector Type	N-Female
Size, nominal	3 ft   0.9 m	Standard RF Connector Suffix	NS (append suffix to model number)
Polarization	Dual		

#### Electrical

Operating Frequency Band	4.4 - 5 GHz	Gain, Low Frequency	29.2 dBi
Half Power Beamwidth, Horizontal	4.7 degrees	Gain, Mid Frequency	29.8 dBi
Half Power Beamwidth, Vertical	4.7 degrees	Gain, High Frequency	30.3 dBi
Cross-Polarization Discrimination	30 dB	VSWR	1.5:1
Front to Back Ratio (F/B)	52 dB	Return Loss	-14 dB



## Mechanical

Fine Azimuth Adjustment	+/- 10 degrees
Fine Elevation Adjustment	+/- 25 degrees
Mounting Pipe Diameter, Min	4.5 inch   11.4 cm
Mounting Pipe Diameter, Max	4.5 inch   11.4 cm
Net Weight	50 lbs   12.3 kg
Wind Velocity Operational	90 mph   145 km/h
Wind Velocity Survival Rating	125 mph   201 km/h

Mechanical Configuration	HP3-LoFreq
Axial Force (FA)	403 lbs   1972 N
Side Force (FS)	200 lbs   890 N
Twisting Moment (MT)	344 ft-lbs   466 Nm
Operating Temperature Range	-40 to +60 C
Max Pressure, PSIG, (if waveguide interface)	5

## Regulatory Compliance

FCC	undeclared
Industry Canada Compliance	undeclared

ETSI	undeclared
RoHS-compliant	Yes

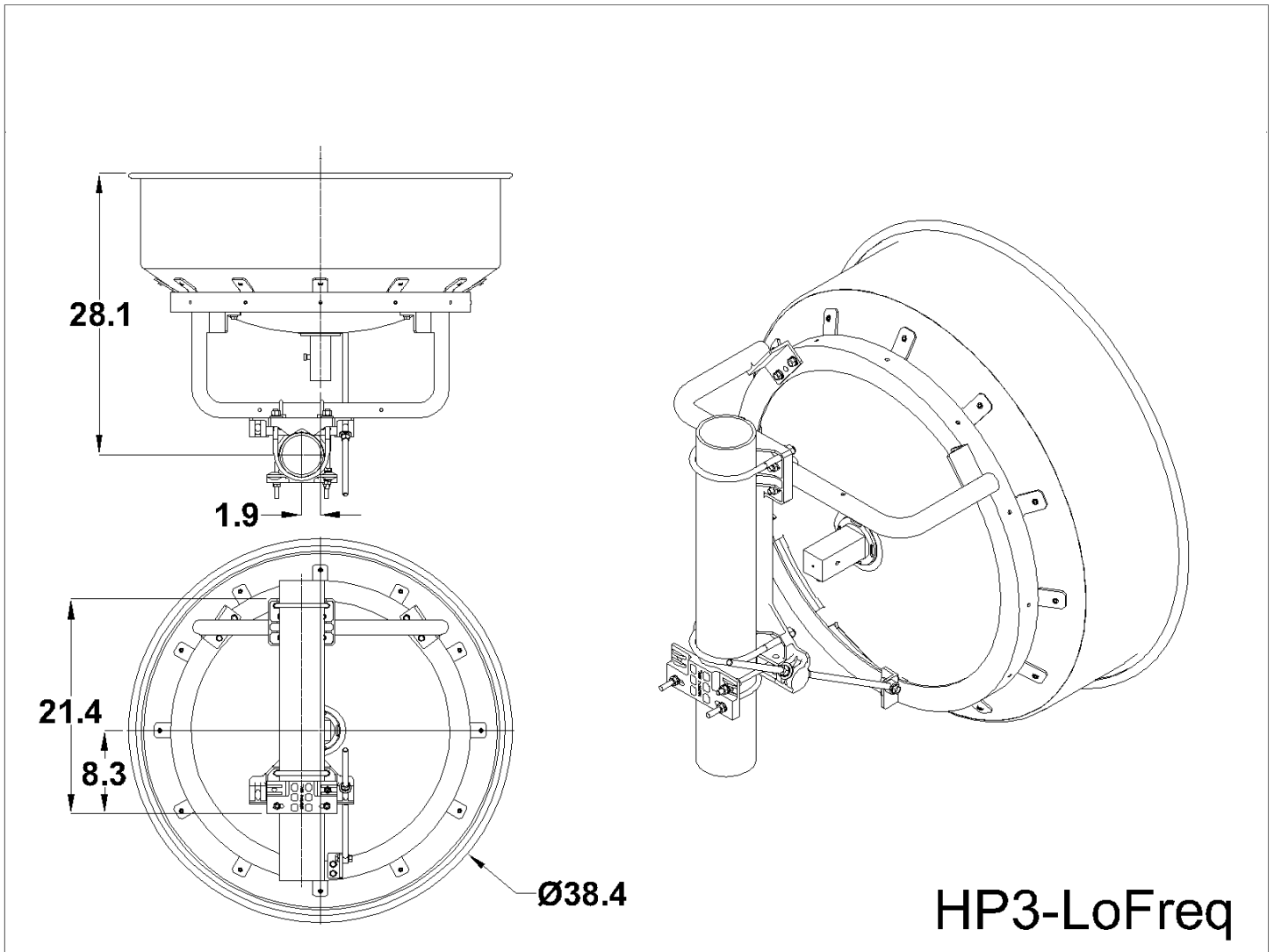
## Shipping Information

Package Type	Wood Crate
Gross Weight	143 lbs   69.8 kg

Dimensions, L x W x H	47 x 28 x 48in   119 x 71 x 122 cm
Shipping Volume	36.56 cu ft   1.04 cu m

\*Additional OEM interfaces and adapters may be available. Contact RadioWaves for a complete and current list of available adapters.

## TECHNICAL DRAWINGS





To: Ron Kendall (ronkendall@comsourcemi.com)

Site name	Street Address	City	Zip
Central	300 S. Highlander Way	Howell	48843
Hillcrest	3350 Sanitorium Road	Howell	48843
Fowlerville <i>POB</i>	224 E. Van Riper Road	Fowlerville	48836
Hell <i>POB</i>	3361 W. M-36	Pinckney	48169
Hamburg	3680 E. M-36	Pinckney	48169
Green Oak <i>POB</i>	9384 Whitmore Lake Road	Brighton	48116
Brighton	1574 S. Old US-23	Brighton	48114
Harland <i>POB</i>	3219 Harland Road	Harland	48353
Deerfield <i>POB ON SITE</i>	4410 Center Road	Linden	48451

231-590-1116 Cell

eric.sudekum@motorolasolutions.com

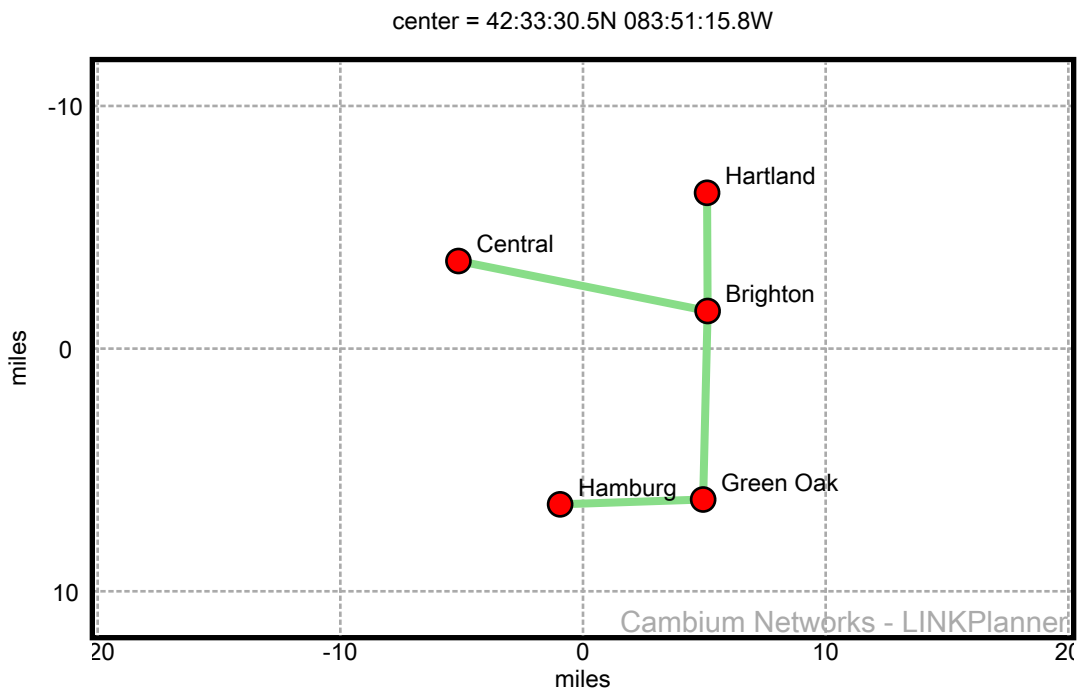


# Project Livingston County\_Ground Mtd ODU\_10082019

## LINKPlanner PTP Installation Report

08 October 2019

Scott Thorley  
Organization: ComSource, Inc.  
Phone: (248) 853-5430  
Email: scott.comsource@gmail.com



# Table of Contents

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4. Central to Brighton	18
5. Green Oak to Hamburg	24
Disclaimer	30

# 1. Project Summary

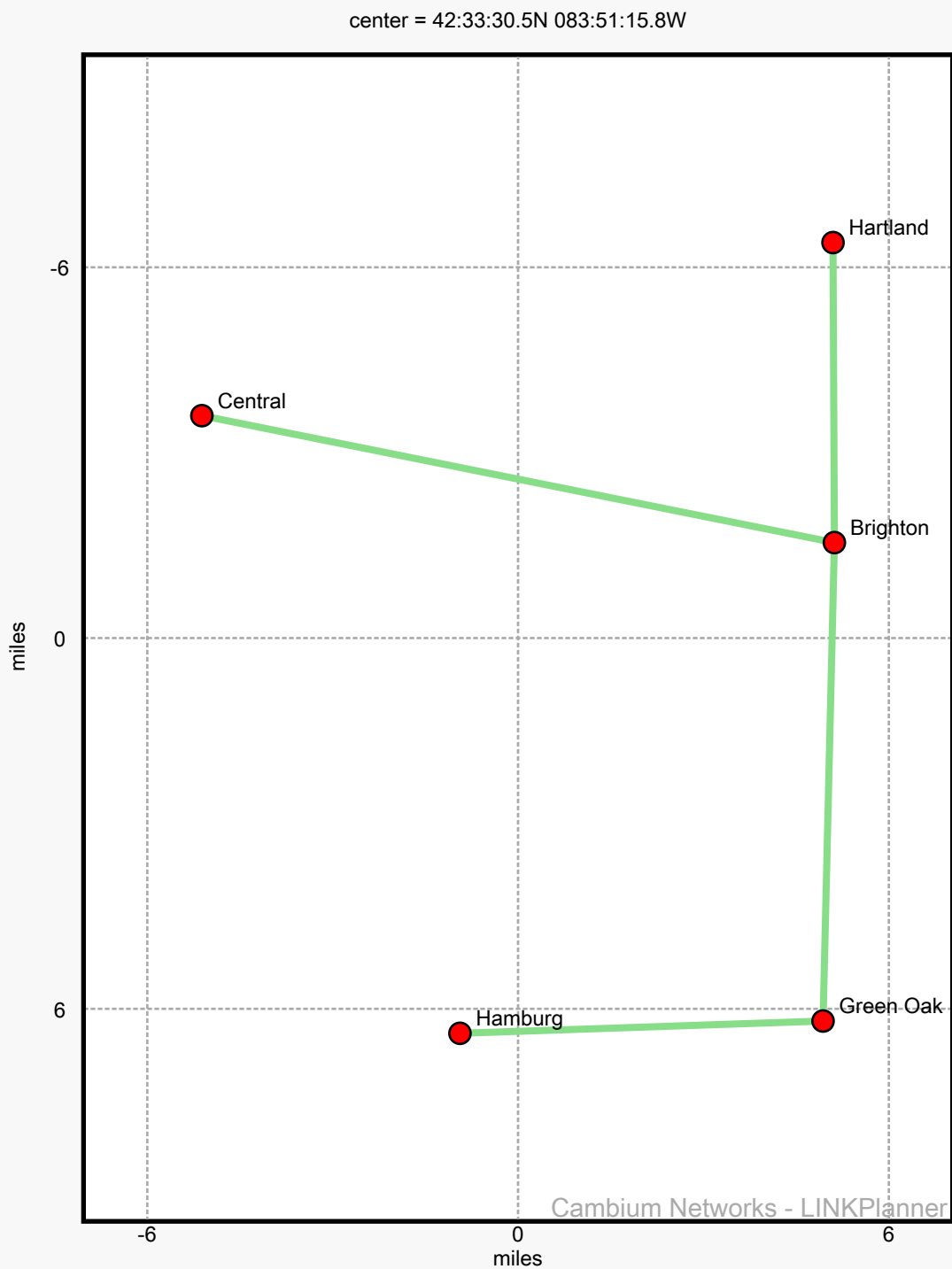
**Project:** Livingston County\_Ground Mtd ODU\_10082019

**Description:** All Tower Feed Lines are AVA5-50, 20 feet longer than Dish Location. Dish and ODU Jumpers are 10 feet of LDF4-50, a jumper is at each end of every feedline. Surge supressor is a Polyphaser GT-NFF-AL, gas tube with frequency rainge of DC-7 GHz. IL is 0.2 dB.

General Information	
Customer Name	Livingston County
Company Name	
Address	
Phone	
Cell Phone	
Email	



Network Map





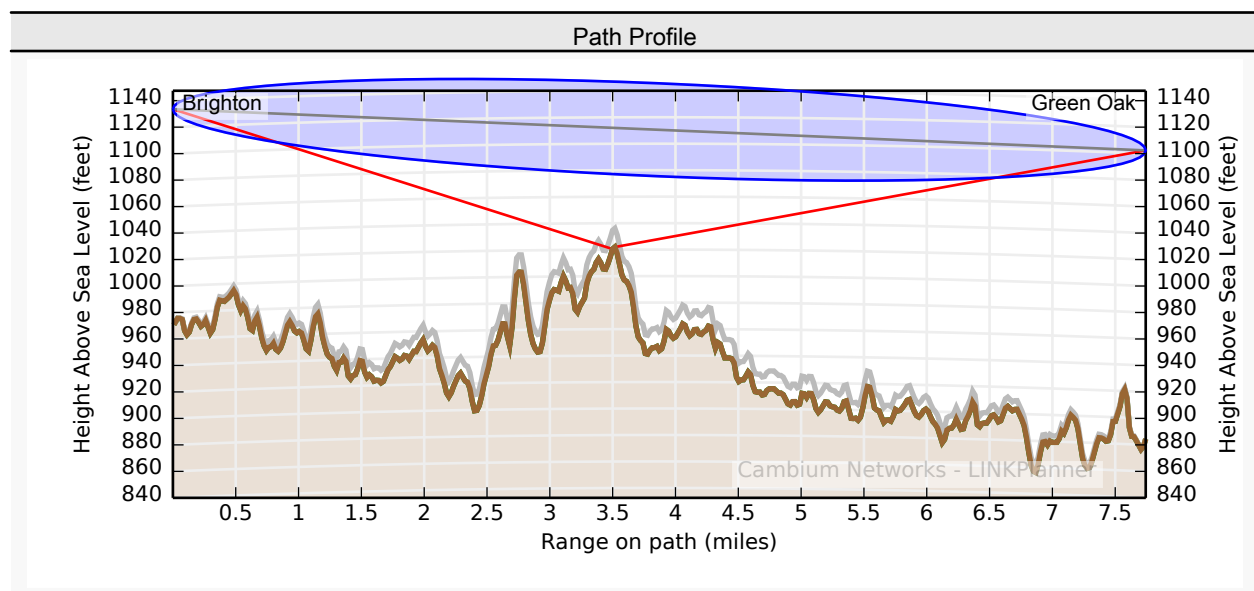


Link name	Product	Local antenna	Remote antenna	Max aggregate IP throughput
Brighton to Green Oak	PTP670	Cambium Networks 3ft High Performance Dual-Polar Parabolic RDH4517	Cambium Networks 3ft High Performance Dual-Polar Parabolic RDH4517	44.31 Mbps
Brighton to Hartland	PTP670	Cambium Networks 3ft High Performance Dual-Polar Parabolic RDH4517	Cambium Networks 3ft High Performance Dual-Polar Parabolic RDH4517	44.42 Mbps
Central to Brighton	PTP670	Cambium Networks 3ft High Performance Dual-Polar Parabolic RDH4517	Cambium Networks 3ft High Performance Dual-Polar Parabolic RDH4517	44.10 Mbps
Green Oak to Hamburg	PTP670	Cambium Networks 3ft High Performance Dual-Polar Parabolic RDH4517	Cambium Networks 3ft High Performance Dual-Polar Parabolic RDH4517	44.42 Mbps

Bill of Materials : PTP Network		
Part Number	Qty	Description
01010419001	45	Coaxial Cable Grounding Kits for 1/4" and 3/8" Cable
C000065K040	8	PTP 650/670 Precise Network Timing Software License (per END)
C000065L007	8	LPU and Grounding Kit (1 kit per ODU)
C050067H002	8	PTP 670 Connectorized END with AC+DC Enhanced Supply (FCC). Kit includes ODU, power supply, mounting bracket and US line cord
EW-E4PT6XX-WW	8	PTP 650/670 Extended Warranty, 4 additional years (per END)
RDH4517	8	4.4-5.0 GHZ, 3-FT (0.9M), HIGH PERFORMANCE DUAL-POL
WB3176	7	328 ft (100 m) Reel Outdoor Copper Clad CAT5E (Recommended for PTP)
WB3665	4	PTP-SYNC

## 2. Brighton to Green Oak

Summary	
Link Name	Brighton to Green Oak
Profile Type	Line-of-Sight
Equipment Type	PTP670
Maximum Obstruction	0 feet
Link Distance	7.743 miles
Free Space Path Loss	128.28 dB
Excess Path Loss	0.00 dB
User IP Throughput Expectation Aggregate	Aggregate 44.31 Mbps assuming PTP-670 Series running the 670-02-60 software
RF Frequency Band	4.9 GHz (4940 to 4990 MHz)
RF Channel Bandwidth	5 MHz



Link Configuration	
Precise Network Timing	Enabled
Bandwidth	5 MHz
E1/T1	None
Optimization	IP
Sync	PTP-SYNC
Symmetry	Symmetric
Dual Payload	Enabled



Link Configuration (continued)	
Highest Mod Mode	256QAM 0.81
Lowest Ethernet Mode	BPSK 0.63 Sngl
Master	Brighton
Slave	Green Oak

Bill of Materials		
Part Number	Qty	Description
01010419001	12	Coaxial Cable Grounding Kits for 1/4" and 3/8" Cable
C000065K040	2	PTP 650/670 Precise Network Timing Software License (per END)
C000065L007	2	LPU and Grounding Kit (1 kit per ODU)
C050067H002	2	PTP 670 Connectorized END with AC+DC Enhanced Supply (FCC). Kit includes ODU, power supply, mounting bracket and US line cord
EW-E4PT6XX-WW	2	PTP 650/670 Extended Warranty, 4 additional years (per END)
RDH4517	2	4.4-5.0 GHZ, 3-FT (0.9M), HIGH PERFORMANCE DUAL-POL
WB3176	2	328 ft (100 m) Reel Outdoor Copper Clad CAT5E (Recommended for PTP)
WB3665	1	PTP-SYNC

Physical Installation Notes for Brighton	
Link Name	Brighton to Green Oak
Latitude	42:34:50.9N
Longitude	083:45:14.6W
Site Elevation	1134 feet AMSL
Equipment Type	PTP670
Platform Variant	Connectorized
Antenna Type	Cambium Networks 3ft High Performance Dual-Polar Parabolic RDH4517
Antenna Beamwidth	4.7°
Antenna Gain	30.24 dBi
Antenna Height	160.0 feet AGL
Antenna Tilt angle	-0.1° (downtilt)
Bearing to Green Oak	181.43° from True North 188.55° from Magnetic North
Magnetic Declination	7.13° W ±0.37° changing by 0.03° W per year
Cable Loss	6.9 dB

Physical Installation Notes for Green Oak	
Link Name	Brighton to Green Oak
Latitude	42:28:07.2N



Physical Installation Notes for Green Oak (continued)	
Longitude	083:45:28.2W
Site Elevation	1102 feet AMSL
Equipment Type	PTP670
Platform Variant	Connectorized
Antenna Type	Cambium Networks 3ft High Performance Dual-Polar Parabolic RDH4517
Antenna Beamwidth	4.7°
Antenna Gain	30.24 dBi
Antenna Height	218.0 feet AGL
Antenna Tilt angle	0.0° (uptilt)
Bearing to Brighton	1.42° from True North 8.53° from Magnetic North
Magnetic Declination	7.10° W $\pm$ 0.37° changing by 0.03° W per year
Cable Loss	8.6 dB

Radio Commissioning Notes for Brighton	
Link Name	Brighton to Green Oak
Site Name	Brighton
Latitude	42:34:50.9N
Longitude	083:45:14.6W
Altitude	1134 feet
TDM Interface	None
Master Slave Mode	Master
Dual Payload	Enabled
Max Receive Modulation Mode	256QAM 0.81 Dual
Lowest Data Modulation Mode	BPSK 0.63 Sngl
Link Mode Optimization	IP Traffic
TDD Synchronization Mode	Enabled
Regulatory Band	14 - 4.9 GHz
Connectorized Antenna Type	Directional, 3ft parabolic
Channel Bandwidth	5 MHz
Link Symmetry	Symmetric
Antenna Gain	30.24 dBi
Cable Loss	6.9 dB
Maximum Transmit Power	24 dBm
TDD Sync Device	PTPSYNC
Max Burst Duration	1088 $\mu$ s
TDD Frame Duration	2500 $\mu$ s
TDD Frame Offset	0 $\mu$ s
Slave Receive to Transmit Gap	121 $\mu$ s
Predicted Receive Power	-59 dBm $\pm$ 5 dB
Predicted Link Loss	128.38 dB $\pm$ 5.00 dB





Radio Commissioning Notes for Green Oak	
Link Name	Brighton to Green Oak
Site Name	Green Oak
Latitude	42:28:07.2N
Longitude	083:45:28.2W
Altitude	1102 feet
TDM Interface	None
Master Slave Mode	Slave
Dual Payload	Enabled
Max Receive Modulation Mode	256QAM 0.81 Dual
Lowest Data Modulation Mode	BPSK 0.63 Sngl
Link Mode Optimization	IP Traffic
TDD Synchronization Mode	Enabled
Regulatory Band	14 - 4.9 GHz
Connectorized Antenna Type	Directional, 3ft parabolic
Channel Bandwidth	5 MHz
Link Symmetry	Symmetric
Antenna Gain	30.24 dBi
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Maximum Transmit Power	24 dBm
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Max Burst Duration	1088 $\mu$ s
TDD Frame Duration	2500 $\mu$ s
Slave Receive to Transmit Gap	121 $\mu$ s
Predicted Receive Power	-59 dBm $\pm$ 5 dB
Predicted Link Loss	128.38 dB $\pm$ 5.00 dB

Regulatory Conditions	
Country	United States
Band	4.9 GHz
Region Code	14
Max EIRP	47.3 dBm
Output Power	24.0 dBm

#### Installation Instruction

Perform the following checks during the installation (Check the deployment guide and the User Guide.)

1. Check with a GPS that you are installing at the correct location.
2. Check carefully the direction to the other end of the link. Either use a corrected compass or use the GPS waypoint feature about 300 meters from the installation location.



## Installation Instruction (continued)

3. When aligning antennas, it is important to find the centre of the main beam. This is done by adjusting the antenna at each end of the link in turn and monitoring the receive level until the peak is found. Once the peak level is found, it should be checked against the predicted receive power to ensure that the antennas have not been aligned on a side lobe.

4. An hour after disarm check that the mean value for the link loss is as predicted (128.38 dB  $\pm$  5.00 dB). Also check that the received power is not greater than -35dBm.

Brighton Performance *	
Mean IP Throughput Predicted	22.15 Mbps
Mean IP Throughput Required	10.00 Mbps
Minimum IP Throughput Required	5.00 Mbps
Minimum IP Throughput Availability Predicted	99.9993% (unavailable for 3.9 mins/year)
Interference Expected	-97.01 dBm/ 05 MHz

Green Oak Performance *	
Mean IP Throughput Predicted	22.15 Mbps
Mean IP Throughput Required	10.00 Mbps
Minimum IP Throughput Required	5.00 Mbps
Minimum IP Throughput Availability Predicted	99.9993% (unavailable for 3.9 mins/year)
Interference Expected	-97.01 dBm/ 05 MHz

\* Multipath availability calculated using ITU-R

Mode	Max Aggregate User IP Throughput (Mbps)	Max User IP Throughput in Either Direction (Mbps)	Brighton			Green Oak		
			Fade Margin (dB)	IP Throughput Availability (%) *	Receive time in Mode (%)	Fade Margin (dB)	IP Throughput Availability (%) *	Receive time in Mode (%)
256QAM 0.81 Dual	44.42	22.21	2.95	98.3912	98.3912	2.95	98.3912	98.3912
64QAM 0.92 Dual	37.43	18.71	7.52	99.9541	1.5629	7.52	99.9541	1.5629
64QAM 0.75 Dual	30.58	15.29	11.56	99.9930	0.0388	11.56	99.9930	0.0388
16QAM 0.87 Dual	23.79	11.90	14.66	99.9974	0.0044	14.66	99.9974	0.0044
16QAM 0.63 Dual	17.10	8.55	18.27	99.9988	0.0014	18.27	99.9988	0.0014
256QAM 0.81 Sngl	22.21	11.10	6.51	0.0005	0.0005	6.51	0.0005	0.0005
64QAM 0.92 Sngl	18.71	9.36	10.77	0.0005	0.0000	10.77	0.0005	0.0000



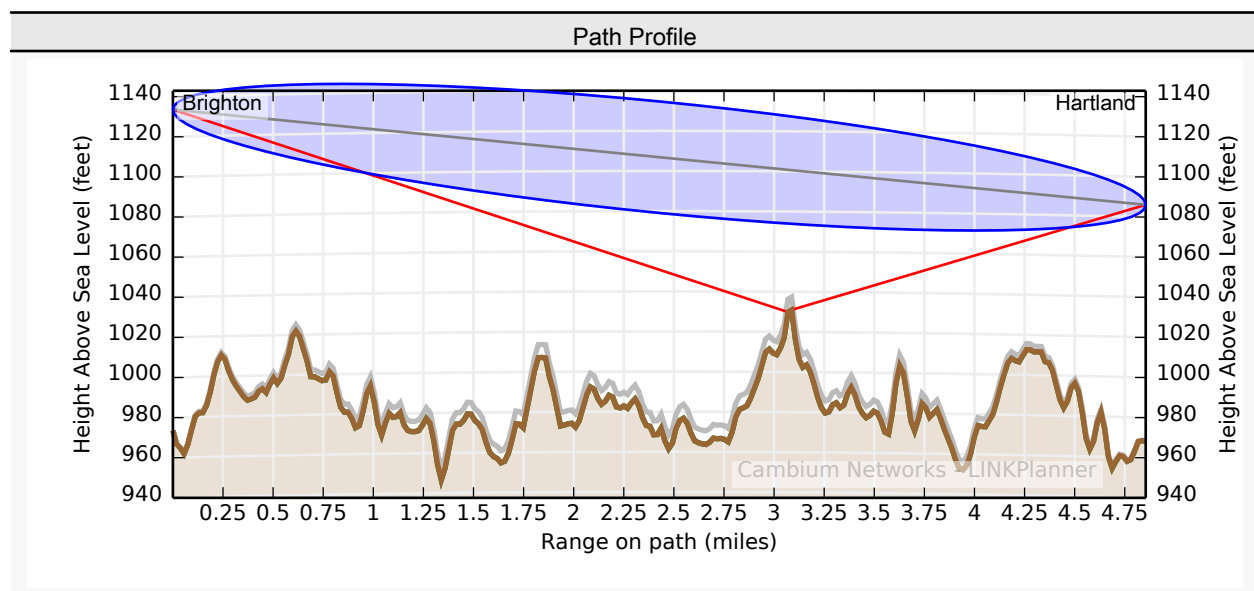
(continued)

Mode	Max Aggregate User IP Throughput (Mbps)	Max User IP Throughput in Either Direction (Mbps)	Brighton			Green Oak		
			Fade Margin (dB)	IP Throughput Availability (%) *	Receive time in Mode (%)	Fade Margin (dB)	IP Throughput Availability (%) *	Receive time in Mode (%)
64QAM 0.75 Sngl	15.29	7.64	14.67	0.0005	0.0000	14.67	0.0005	0.0000
16QAM 0.87 Sngl	11.89	5.95	17.72	0.0005	0.0000	17.72	0.0005	0.0000
16QAM 0.63 Sngl	8.55	4.27	22.22	99.9997	0.0005	22.22	99.9997	0.0005
QPSK 0.87 Sngl	5.94	2.97	24.54	99.9998	0.0001	24.54	99.9998	0.0001
QPSK 0.63 Sngl	4.27	2.14	28.56	99.9999	0.0001	28.56	99.9999	0.0001
BPSK 0.63 Sngl	2.13	1.07	31.66	100.0000	0.0000	31.66	100.0000	0.0000

\* Multipath availability calculated using ITU-R

### 3. Brighton to Hartland

Summary	
Link Name	Brighton to Hartland
Profile Type	Line-of-Sight
Equipment Type	PTP670
Maximum Obstruction	0 feet
Link Distance	4.855 miles
Free Space Path Loss	124.22 dB
Excess Path Loss	0.00 dB
User IP Throughput Expectation Aggregate	Aggregate 44.42 Mbps assuming PTP-670 Series running the 670-02-60 software
RF Frequency Band	4.9 GHz (4940 to 4990 MHz)
RF Channel Bandwidth	5 MHz



Link Configuration	
Precise Network Timing	Enabled
Bandwidth	5 MHz
E1/T1	None
Optimization	IP
Sync	PTP-SYNC
Symmetry	Symmetric
Dual Payload	Enabled





Link Configuration (continued)	
Highest Mod Mode	256QAM 0.81
Lowest Ethernet Mode	BPSK 0.63 Sngl
Master	Brighton
Slave	Hartland

Bill of Materials		
Part Number	Qty	Description
01010419001	11	Coaxial Cable Grounding Kits for 1/4" and 3/8" Cable
C000065K040	2	PTP 650/670 Precise Network Timing Software License (per END)
C000065L007	2	LPU and Grounding Kit (1 kit per ODU)
C050067H002	2	PTP 670 Connectorized END with AC+DC Enhanced Supply (FCC). Kit includes ODU, power supply, mounting bracket and US line cord
EW-E4PT6XX-WW	2	PTP 650/670 Extended Warranty, 4 additional years (per END)
RDH4517	2	4.4-5.0 GHZ, 3-FT (0.9M), HIGH PERFORMANCE DUAL-POL
WB3176	2	328 ft (100 m) Reel Outdoor Copper Clad CAT5E (Recommended for PTP)
WB3665	1	PTP-SYNC

Physical Installation Notes for Brighton	
Link Name	Brighton to Hartland
Latitude	42:34:50.9N
Longitude	083:45:14.6W
Site Elevation	1134 feet AMSL
Equipment Type	PTP670
Platform Variant	Connectorized
Antenna Type	Cambium Networks 3ft High Performance Dual-Polar Parabolic RDH4517
Antenna Beamwidth	4.7°
Antenna Gain	30.24 dBi
Antenna Height	160.0 feet AGL
Antenna Tilt angle	-0.1° (downtilt)
Bearing to Hartland	359.80° from True North 6.93° from Magnetic North
Magnetic Declination	7.13° W ±0.37° changing by 0.03° W per year
Cable Loss	6.9 dB

Physical Installation Notes for Hartland	
Link Name	Brighton to Hartland
Latitude	42:39:04.1N



Physical Installation Notes for Hartland (continued)	
Longitude	083:45:15.8W
Site Elevation	1086 feet AMSL
Equipment Type	PTP670
Platform Variant	Connectorized
Antenna Type	Cambium Networks 3ft High Performance Dual-Polar Parabolic RDH4517
Antenna Beamwidth	4.7°
Antenna Gain	30.24 dBi
Antenna Height	118.0 feet AGL
Antenna Tilt angle	0.1° (uptilt)
Bearing to Brighton	179.80° from True North 186.94° from Magnetic North
Magnetic Declination	7.14° W $\pm$ 0.37° changing by 0.03° W per year
Cable Loss	5.1 dB

Radio Commissioning Notes for Brighton	
Link Name	Brighton to Hartland
Site Name	Brighton
Latitude	42:34:50.9N
Longitude	083:45:14.6W
Altitude	1134 feet
TDM Interface	None
Master Slave Mode	Master
Dual Payload	Enabled
Max Receive Modulation Mode	256QAM 0.81 Dual
Lowest Data Modulation Mode	BPSK 0.63 Sngl
Link Mode Optimization	IP Traffic
TDD Synchronization Mode	Enabled
Regulatory Band	14 - 4.9 GHz
Connectorized Antenna Type	Directional, 3ft parabolic
Channel Bandwidth	5 MHz
Link Symmetry	Symmetric
Antenna Gain	30.24 dBi
Cable Loss	6.9 dB
Maximum Transmit Power	24 dBm
TDD Sync Device	PTPSYNC
Max Burst Duration	1088 $\mu$ s
TDD Frame Duration	2500 $\mu$ s
TDD Frame Offset	0 $\mu$ s
Slave Receive to Transmit Gap	136 $\mu$ s
Predicted Receive Power	-52 dBm $\pm$ 5 dB
Predicted Link Loss	124.29 dB $\pm$ 5.00 dB



Radio Commissioning Notes for Hartland	
Link Name	Brighton to Hartland
Site Name	Hartland
Latitude	42:39:04.1N
Longitude	083:45:15.8W
Altitude	1086 feet
TDM Interface	None
Master Slave Mode	Slave
Dual Payload	Enabled
Max Receive Modulation Mode	256QAM 0.81 Dual
Lowest Data Modulation Mode	BPSK 0.63 Sngl
Link Mode Optimization	IP Traffic
TDD Synchronization Mode	Enabled
Regulatory Band	14 - 4.9 GHz
Connectorized Antenna Type	Directional, 3ft parabolic
Channel Bandwidth	5 MHz
Link Symmetry	Symmetric
Antenna Gain	30.24 dBi
Cable Loss	5.1 dB
Maximum Transmit Power	24 dBm
TDD Sync Device	PTPSYNC
Max Burst Duration	1088 $\mu$ s
TDD Frame Duration	2500 $\mu$ s
Slave Receive to Transmit Gap	136 $\mu$ s
Predicted Receive Power	-52 dBm $\pm$ 5 dB
Predicted Link Loss	124.29 dB $\pm$ 5.00 dB

Regulatory Conditions	
Country	United States
Band	4.9 GHz
Region Code	14
Max EIRP	49.1 dBm
Output Power	24.0 dBm

#### Installation Instruction

Perform the following checks during the installation (Check the deployment guide and the User Guide.)

1. Check with a GPS that you are installing at the correct location.
2. Check carefully the direction to the other end of the link. Either use a corrected compass or use the GPS waypoint feature about 300 meters from the installation location.



## Installation Instruction (continued)

3. When aligning antennas, it is important to find the centre of the main beam. This is done by adjusting the antenna at each end of the link in turn and monitoring the receive level until the peak is found. Once the peak level is found, it should be checked against the predicted receive power to ensure that the antennas have not been aligned on a side lobe.

4. An hour after disarm check that the mean value for the link loss is as predicted (124.29 dB  $\pm$  5.00 dB). Also check that the received power is not greater than -35dBm.

Brighton Performance *	
Mean IP Throughput Predicted	22.21 Mbps
Mean IP Throughput Required	10.00 Mbps
Minimum IP Throughput Required	5.00 Mbps
Minimum IP Throughput Availability Predicted	100.0000% (unavailable for 4 secs/year)
Interference Expected	-97.01 dBm/ 05 MHz

Hartland Performance *	
Mean IP Throughput Predicted	22.21 Mbps
Mean IP Throughput Required	10.00 Mbps
Minimum IP Throughput Required	5.00 Mbps
Minimum IP Throughput Availability Predicted	100.0000% (unavailable for 4 secs/year)
Interference Expected	-97.01 dBm/ 05 MHz

\* Multipath availability calculated using ITU-R

Mode	Max Aggregate User IP Throughput (Mbps)	Max User IP Throughput in Either Direction (Mbps)	Brighton			Hartland		
			Fade Margin (dB)	IP Throughput Availability (%) *	Receive time in Mode (%)	Fade Margin (dB)	IP Throughput Availability (%) *	Receive time in Mode (%)
256QAM 0.81 Dual	44.42	22.21	10.55	99.9976	99.9976	10.55	99.9976	99.9976
64QAM 0.92 Dual	37.43	18.71	15.11	99.9993	0.0016	15.11	99.9993	0.0016
64QAM 0.75 Dual	30.58	15.29	19.16	99.9995	0.0002	19.16	99.9995	0.0002
16QAM 0.87 Dual	23.79	11.90	22.25	99.9995	0.0000	22.25	99.9995	0.0000
16QAM 0.63 Dual	17.10	8.55	25.87	99.9995	0.0000	25.87	99.9995	0.0000
256QAM 0.81 Sngl	22.21	11.10	14.10	0.0005	0.0005	14.10	0.0005	0.0005
64QAM 0.92 Sngl	18.71	9.36	18.37	0.0005	0.0000	18.37	0.0005	0.0000





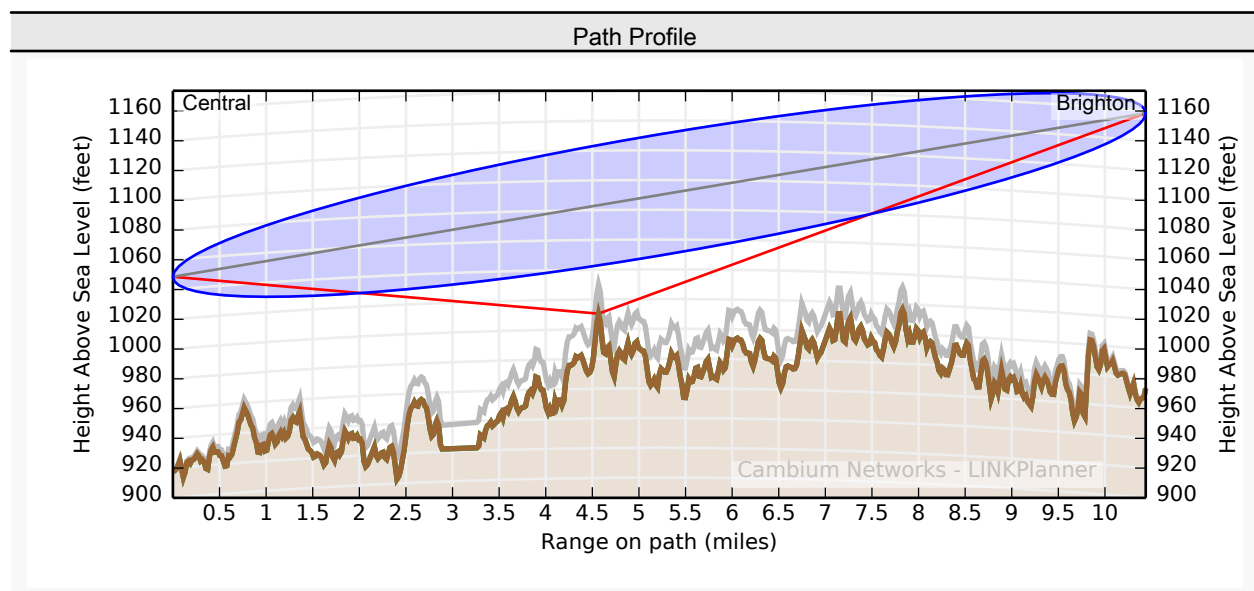
(continued)

Mode	Max Aggregate User IP Throughput (Mbps)	Max User IP Throughput in Either Direction (Mbps)	Brighton			Hartland		
			Fade Margin (dB)	IP Throughput Availability (%) *	Receive time in Mode (%)	Fade Margin (dB)	IP Throughput Availability (%) *	Receive time in Mode (%)
64QAM 0.75 Sngl	15.29	7.64	22.27	0.0005	0.0000	22.27	0.0005	0.0000
16QAM 0.87 Sngl	11.89	5.95	25.31	0.0005	0.0000	25.31	0.0005	0.0000
16QAM 0.63 Sngl	8.55	4.27	29.81	100.0000	0.0000	29.81	100.0000	0.0000
QPSK 0.87 Sngl	5.94	2.97	32.13	100.0000	0.0000	32.13	100.0000	0.0000
QPSK 0.63 Sngl	4.27	2.14	36.15	100.0000	0.0000	36.15	100.0000	0.0000
BPSK 0.63 Sngl	2.13	1.07	39.26	100.0000	0.0000	39.26	100.0000	0.0000

\* Multipath availability calculated using ITU-R

## 4. Central to Brighton

Summary	
Link Name	Central to Brighton
Profile Type	Line-of-Sight
Equipment Type	PTP670
Maximum Obstruction	0 feet
Link Distance	10.437 miles
Free Space Path Loss	130.87 dB
Excess Path Loss	0.00 dB
User IP Throughput Expectation Aggregate	Aggregate 44.10 Mbps assuming PTP-670 Series running the 670-02-60 software
RF Frequency Band	4.9 GHz (4940 to 4990 MHz)
RF Channel Bandwidth	5 MHz



Link Configuration	
Precise Network Timing	Enabled
Bandwidth	5 MHz
E1/T1	None
Optimization	IP
Sync	PTP-SYNC
Symmetry	Symmetric
Dual Payload	Enabled



Link Configuration (continued)	
Highest Mod Mode	256QAM 0.81
Lowest Ethernet Mode	BPSK 0.63 Sngl
Master	Brighton
Slave	Central

Bill of Materials		
Part Number	Qty	Description
01010419001	11	Coaxial Cable Grounding Kits for 1/4" and 3/8" Cable
C000065K040	2	PTP 650/670 Precise Network Timing Software License (per END)
C000065L007	2	LPU and Grounding Kit (1 kit per ODU)
C050067H002	2	PTP 670 Connectorized END with AC+DC Enhanced Supply (FCC). Kit includes ODU, power supply, mounting bracket and US line cord
EW-E4PT6XX-WW	2	PTP 650/670 Extended Warranty, 4 additional years (per END)
RDH4517	2	4.4-5.0 GHZ, 3-FT (0.9M), HIGH PERFORMANCE DUAL-POL
WB3176	2	328 ft (100 m) Reel Outdoor Copper Clad CAT5E (Recommended for PTP)
WB3665	1	PTP-SYNC

Physical Installation Notes for Central	
Link Name	Central to Brighton
Latitude	42:36:38.0N
Longitude	083:57:17.0W
Site Elevation	1049 feet AMSL
Equipment Type	PTP670
Platform Variant	Connectorized
Antenna Type	Cambium Networks 3ft High Performance Dual-Polar Parabolic RDH4517
Antenna Beamwidth	4.7°
Antenna Gain	30.24 dBi
Antenna Height	130.0 feet AGL
Antenna Tilt angle	0.1° (uptilt)
Bearing to Brighton	101.28° from True North 108.26° from Magnetic North
Magnetic Declination	6.98° W ±0.37° changing by 0.03° W per year
Cable Loss	6.0 dB

Physical Installation Notes for Brighton	
Link Name	Central to Brighton
Latitude	42:34:50.9N



Physical Installation Notes for Brighton (continued)	
Longitude	083:45:14.6W
Site Elevation	1159 feet AMSL
Equipment Type	PTP670
Platform Variant	Connectorized
Antenna Type	Cambium Networks 3ft High Performance Dual-Polar Parabolic RDH4517
Antenna Beamwidth	4.7°
Antenna Gain	30.24 dBi
Antenna Height	185.0 feet AGL
Antenna Tilt angle	-0.2° (downtilt)
Bearing to Central	281.41° from True North 288.54° from Magnetic North
Magnetic Declination	7.13° W $\pm$ 0.37° changing by 0.03° W per year
Cable Loss	7.6 dB

Radio Commissioning Notes for Central	
Link Name	Central to Brighton
Site Name	Central
Latitude	42:36:38.0N
Longitude	083:57:17.0W
Altitude	1049 feet
TDM Interface	None
Master Slave Mode	Slave
Dual Payload	Enabled
Max Receive Modulation Mode	256QAM 0.81 Dual
Lowest Data Modulation Mode	BPSK 0.63 Sngl
Link Mode Optimization	IP Traffic
TDD Synchronization Mode	Enabled
Regulatory Band	14 - 4.9 GHz
Connectorized Antenna Type	Directional, 3ft parabolic
Channel Bandwidth	5 MHz
Link Symmetry	Symmetric
Antenna Gain	30.24 dBi
Cable Loss	6.0 dB
Maximum Transmit Power	24 dBm
TDD Sync Device	PTPSYNC
Max Burst Duration	1088 $\mu$ s
TDD Frame Duration	2500 $\mu$ s
Slave Receive to Transmit Gap	106 $\mu$ s
Predicted Receive Power	-60 dBm $\pm$ 5 dB
Predicted Link Loss	131.02 dB $\pm$ 5.00 dB





Radio Commissioning Notes for Brighton	
Link Name	Central to Brighton
Site Name	Brighton
Latitude	42:34:50.9N
Longitude	083:45:14.6W
Altitude	1159 feet
TDM Interface	None
Master Slave Mode	Master
Dual Payload	Enabled
Max Receive Modulation Mode	256QAM 0.81 Dual
Lowest Data Modulation Mode	BPSK 0.63 Sngl
Link Mode Optimization	IP Traffic
TDD Synchronization Mode	Enabled
Regulatory Band	14 - 4.9 GHz
Connectorized Antenna Type	Directional, 3ft parabolic
Channel Bandwidth	5 MHz
Link Symmetry	Symmetric
Antenna Gain	30.24 dBi
Cable Loss	7.6 dB
Maximum Transmit Power	24 dBm
TDD Sync Device	PTPSYNC
Max Burst Duration	1088 $\mu$ s
TDD Frame Duration	2500 $\mu$ s
TDD Frame Offset	1250 $\mu$ s
Slave Receive to Transmit Gap	106 $\mu$ s
Predicted Receive Power	-60 dBm $\pm$ 5 dB
Predicted Link Loss	131.02 dB $\pm$ 5.00 dB

Regulatory Conditions	
Country	United States
Band	4.9 GHz
Region Code	14
Max EIRP	48.2 dBm
Output Power	24.0 dBm

#### Installation Instruction

Perform the following checks during the installation (Check the deployment guide and the User Guide.)

1. Check with a GPS that you are installing at the correct location.
2. Check carefully the direction to the other end of the link. Either use a corrected compass or use the GPS waypoint feature about 300 meters from the installation location.



## Installation Instruction (continued)

3. When aligning antennas, it is important to find the centre of the main beam. This is done by adjusting the antenna at each end of the link in turn and monitoring the receive level until the peak is found. Once the peak level is found, it should be checked against the predicted receive power to ensure that the antennas have not been aligned on a side lobe.

4. An hour after disarm check that the mean value for the link loss is as predicted (131.02 dB  $\pm$  5.00 dB). Also check that the received power is not greater than -35dBm.

Central Performance *	
Mean IP Throughput Predicted	22.05 Mbps
Mean IP Throughput Required	10.00 Mbps
Minimum IP Throughput Required	5.00 Mbps
Minimum IP Throughput Availability Predicted	99.9986% (unavailable for 7.3 mins/year)
Interference Expected	-97.01 dBm/ 05 MHz

Brighton Performance *	
Mean IP Throughput Predicted	22.05 Mbps
Mean IP Throughput Required	10.00 Mbps
Minimum IP Throughput Required	5.00 Mbps
Minimum IP Throughput Availability Predicted	99.9986% (unavailable for 7.3 mins/year)
Interference Expected	-97.01 dBm/ 05 MHz

\* Multipath availability calculated using ITU-R

Mode	Max Aggregate User IP Throughput (Mbps)	Max User IP Throughput in Either Direction (Mbps)	Central			Brighton		
			Fade Margin (dB)	IP Throughput Availability (%) *	Receive time in Mode (%)	Fade Margin (dB)	IP Throughput Availability (%) *	Receive time in Mode (%)
256QAM 0.81 Dual	44.42	22.21	2.22	95.5593	95.5593	2.22	95.5593	95.5593
64QAM 0.92 Dual	37.43	18.71	6.78	99.9064	4.3471	6.78	99.9064	4.3471
64QAM 0.75 Dual	30.58	15.29	10.83	99.9867	0.0803	10.83	99.9867	0.0803
16QAM 0.87 Dual	23.79	11.90	13.93	99.9954	0.0087	13.93	99.9954	0.0087
16QAM 0.63 Dual	17.10	8.55	17.54	99.9981	0.0027	17.54	99.9981	0.0027
256QAM 0.81 Sngl	22.21	11.10	5.78	0.0005	0.0005	5.78	0.0005	0.0005
64QAM 0.92 Sngl	18.71	9.36	10.04	0.0005	0.0000	10.04	0.0005	0.0000



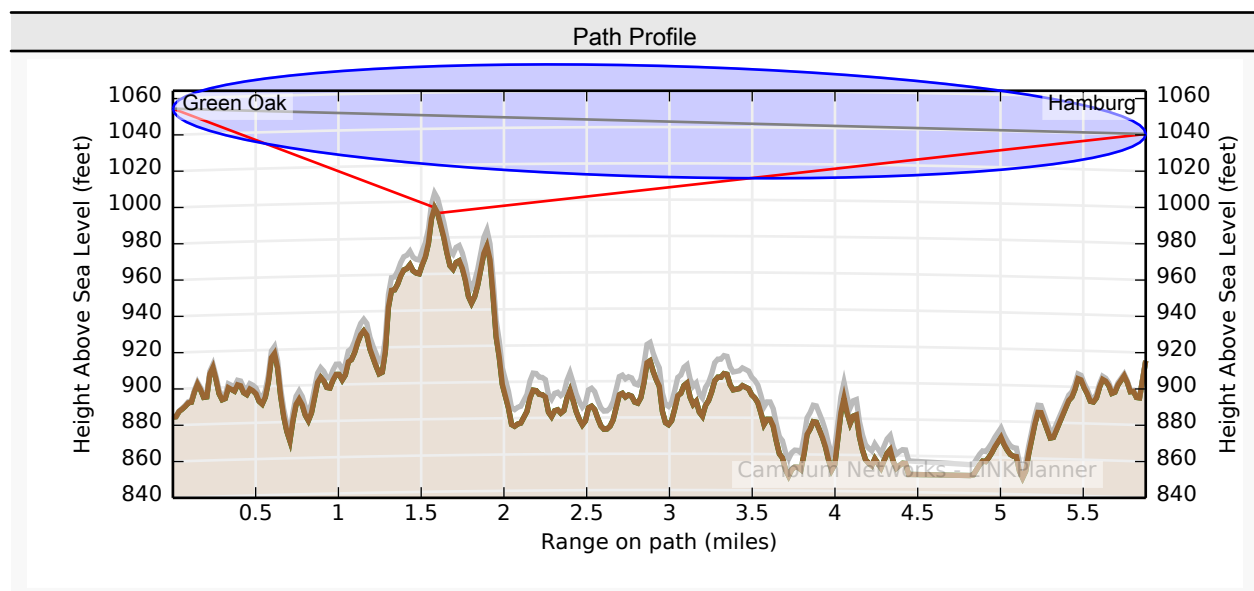
(continued)

Mode	Max Aggregate User IP Throughput (Mbps)	Max User IP Throughput in Either Direction (Mbps)	Central			Brighton		
			Fade Margin (dB)	IP Throughput Availability (%) *	Receive time in Mode (%)	Fade Margin (dB)	IP Throughput Availability (%) *	Receive time in Mode (%)
64QAM 0.75 Sngl	15.29	7.64	13.94	0.0005	0.0000	13.94	0.0005	0.0000
16QAM 0.87 Sngl	11.89	5.95	16.99	0.0005	0.0000	16.99	0.0005	0.0000
16QAM 0.63 Sngl	8.55	4.27	21.48	99.9995	0.0009	21.48	99.9995	0.0009
QPSK 0.87 Sngl	5.94	2.97	23.81	99.9997	0.0002	23.81	99.9997	0.0002
QPSK 0.63 Sngl	4.27	2.14	27.82	99.9999	0.0002	27.82	99.9999	0.0002
BPSK 0.63 Sngl	2.13	1.07	30.93	99.9999	0.0001	30.93	99.9999	0.0001

\* Multipath availability calculated using ITU-R

## 5. Green Oak to Hamburg

Summary	
Link Name	Green Oak to Hamburg
Profile Type	Line-of-Sight
Equipment Type	PTP670
Maximum Obstruction	0 feet
Link Distance	5.878 miles
Free Space Path Loss	125.88 dB
Excess Path Loss	0.00 dB
User IP Throughput Expectation Aggregate	Aggregate 44.42 Mbps assuming PTP-670 Series running the 670-02-60 software
RF Frequency Band	4.9 GHz (4940 to 4990 MHz)
RF Channel Bandwidth	5 MHz



Link Configuration	
Precise Network Timing	Enabled
Bandwidth	5 MHz
E1/T1	None
Optimization	IP
Sync	PTP-SYNC
Symmetry	Symmetric
Dual Payload	Enabled



Link Configuration (continued)	
Highest Mod Mode	256QAM 0.81
Lowest Ethernet Mode	BPSK 0.63 Sngl
Master	Hamburg
Slave	Green Oak

Bill of Materials		
Part Number	Qty	Description
01010419001	11	Coaxial Cable Grounding Kits for 1/4" and 3/8" Cable
C000065K040	2	PTP 650/670 Precise Network Timing Software License (per END)
C000065L007	2	LPU and Grounding Kit (1 kit per ODU)
C050067H002	2	PTP 670 Connectorized END with AC+DC Enhanced Supply (FCC). Kit includes ODU, power supply, mounting bracket and US line cord
EW-E4PT6XX-WW	2	PTP 650/670 Extended Warranty, 4 additional years (per END)
RDH4517	2	4.4-5.0 GHZ, 3-FT (0.9M), HIGH PERFORMANCE DUAL-POL
WB3176	2	328 ft (100 m) Reel Outdoor Copper Clad CAT5E (Recommended for PTP)
WB3665	1	PTP-SYNC

Physical Installation Notes for Green Oak	
Link Name	Green Oak to Hamburg
Latitude	42:28:07.2N
Longitude	083:45:28.2W
Site Elevation	1054 feet AMSL
Equipment Type	PTP670
Platform Variant	Connectorized
Antenna Type	Cambium Networks 3ft High Performance Dual-Polar Parabolic RDH4517
Antenna Beamwidth	4.7°
Antenna Gain	30.24 dBi
Antenna Height	170.0 feet AGL
Antenna Tilt angle	-0.1° (downtilt)
Bearing to Hamburg	268.13° from True North 275.23° from Magnetic North
Magnetic Declination	7.10° W ±0.37° changing by 0.03° W per year
Cable Loss	7.2 dB

Physical Installation Notes for Hamburg	
Link Name	Green Oak to Hamburg
Latitude	42:27:57.0N





Physical Installation Notes for Hamburg (continued)	
Longitude	083:52:22.0W
Site Elevation	1040 feet AMSL
Equipment Type	PTP670
Platform Variant	Connectorized
Antenna Type	Cambium Networks 3ft High Performance Dual-Polar Parabolic RDH4517
Antenna Beamwidth	4.7°
Antenna Gain	30.24 dBi
Antenna Height	125.0 feet AGL
Antenna Tilt angle	-0.0° (downtilt)
Bearing to Green Oak	88.05° from True North 95.07° from Magnetic North
Magnetic Declination	7.02° W $\pm$ 0.37° changing by 0.03° W per year
Cable Loss	5.8 dB

Radio Commissioning Notes for Green Oak	
Link Name	Green Oak to Hamburg
Site Name	Green Oak
Latitude	42:28:07.2N
Longitude	083:45:28.2W
Altitude	1054 feet
TDM Interface	None
Master Slave Mode	Slave
Dual Payload	Enabled
Max Receive Modulation Mode	256QAM 0.81 Dual
Lowest Data Modulation Mode	BPSK 0.63 Sngl
Link Mode Optimization	IP Traffic
TDD Synchronization Mode	Enabled
Regulatory Band	14 - 4.9 GHz
Connectorized Antenna Type	Directional, 3ft parabolic
Channel Bandwidth	5 MHz
Link Symmetry	Symmetric
Antenna Gain	30.24 dBi
Cable Loss	7.2 dB
Maximum Transmit Power	24 dBm
TDD Sync Device	PTPSYNC
Max Burst Duration	1088 $\mu$ s
TDD Frame Duration	2500 $\mu$ s
Slave Receive to Transmit Gap	131 $\mu$ s
Predicted Receive Power	-54 dBm $\pm$ 5 dB
Predicted Link Loss	125.96 dB $\pm$ 5.00 dB



Radio Commissioning Notes for Hamburg	
Link Name	Green Oak to Hamburg
Site Name	Hamburg
Latitude	42:27:57.0N
Longitude	083:52:22.0W
Altitude	1040 feet
TDM Interface	None
Master Slave Mode	Master
Dual Payload	Enabled
Max Receive Modulation Mode	256QAM 0.81 Dual
Lowest Data Modulation Mode	BPSK 0.63 Sngl
Link Mode Optimization	IP Traffic
TDD Synchronization Mode	Enabled
Regulatory Band	14 - 4.9 GHz
Connectorized Antenna Type	Directional, 3ft parabolic
Channel Bandwidth	5 MHz
Link Symmetry	Symmetric
Antenna Gain	30.24 dBi
Cable Loss	5.8 dB
Maximum Transmit Power	24 dBm
TDD Sync Device	PTPSYNC
Max Burst Duration	1088 $\mu$ s
TDD Frame Duration	2500 $\mu$ s
TDD Frame Offset	1250 $\mu$ s
Slave Receive to Transmit Gap	131 $\mu$ s
Predicted Receive Power	-54 dBm $\pm$ 5 dB
Predicted Link Loss	125.96 dB $\pm$ 5.00 dB

Regulatory Conditions	
Country	United States
Band	4.9 GHz
Region Code	14
Max EIRP	48.4 dBm
Output Power	24.0 dBm

#### Installation Instruction

Perform the following checks during the installation (Check the deployment guide and the User Guide.)

1. Check with a GPS that you are installing at the correct location.
2. Check carefully the direction to the other end of the link. Either use a corrected compass or use the GPS waypoint feature about 300 meters from the installation location.



## Installation Instruction (continued)

3. When aligning antennas, it is important to find the centre of the main beam. This is done by adjusting the antenna at each end of the link in turn and monitoring the receive level until the peak is found. Once the peak level is found, it should be checked against the predicted receive power to ensure that the antennas have not been aligned on a side lobe.

4. An hour after disarm check that the mean value for the link loss is as predicted (125.96 dB  $\pm$  5.00 dB). Also check that the received power is not greater than -35dBm.

Green Oak Performance *	
Mean IP Throughput Predicted	22.21 Mbps
Mean IP Throughput Required	10.00 Mbps
Minimum IP Throughput Required	5.00 Mbps
Minimum IP Throughput Availability Predicted	99.9999% (unavailable for 33 secs/year)
Interference Expected	-97.01 dBm/ 05 MHz

Hamburg Performance *	
Mean IP Throughput Predicted	22.21 Mbps
Mean IP Throughput Required	10.00 Mbps
Minimum IP Throughput Required	5.00 Mbps
Minimum IP Throughput Availability Predicted	99.9999% (unavailable for 33 secs/year)
Interference Expected	-97.01 dBm/ 05 MHz

\* Multipath availability calculated using ITU-R

Mode	Max Aggregate User IP Throughput (Mbps)	Max User IP Throughput in Either Direction (Mbps)	Green Oak			Hamburg		
			Fade Margin (dB)	IP Throughput Availability (%) *	Receive time in Mode (%)	Fade Margin (dB)	IP Throughput Availability (%) *	Receive time in Mode (%)
256QAM 0.81 Dual	44.42	22.21	7.87	99.9762	99.9762	7.87	99.9762	99.9762
64QAM 0.92 Dual	37.43	18.71	12.43	99.9969	0.0207	12.43	99.9969	0.0207
64QAM 0.75 Dual	30.58	15.29	16.48	99.9989	0.0020	16.48	99.9989	0.0020
16QAM 0.87 Dual	23.79	11.90	19.58	99.9993	0.0004	19.58	99.9993	0.0004
16QAM 0.63 Dual	17.10	8.55	23.19	99.9994	0.0002	23.19	99.9994	0.0002
256QAM 0.81 Sngl	22.21	11.10	11.43	0.0005	0.0005	11.43	0.0005	0.0005
64QAM 0.92 Sngl	18.71	9.36	15.69	0.0005	0.0000	15.69	0.0005	0.0000



(continued)

Mode	Max Aggregate User IP Throughput (Mbps)	Max User IP Throughput in Either Direction (Mbps)	Green Oak			Hamburg		
			Fade Margin (dB)	IP Throughput Availability (%) *	Receive time in Mode (%)	Fade Margin (dB)	IP Throughput Availability (%) *	Receive time in Mode (%)
64QAM 0.75 Sngl	15.29	7.64	19.59	0.0005	0.0000	19.59	0.0005	0.0000
16QAM 0.87 Sngl	11.89	5.95	22.64	0.0005	0.0000	22.64	0.0005	0.0000
16QAM 0.63 Sngl	8.55	4.27	27.13	100.0000	0.0001	27.13	100.0000	0.0001
QPSK 0.87 Sngl	5.94	2.97	29.46	100.0000	0.0000	29.46	100.0000	0.0000
QPSK 0.63 Sngl	4.27	2.14	33.48	100.0000	0.0000	33.48	100.0000	0.0000
BPSK 0.63 Sngl	2.13	1.07	36.58	100.0000	0.0000	36.58	100.0000	0.0000

\* Multipath availability calculated using ITU-R

# Disclaimer

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## PTP 670

Service providers, government public safety agencies, and critical infrastructure operators such as utilities and energy companies have experienced massive growth in bandwidth demands for reliable and secure broadband connectivity and backhaul. The nature of these deployments for small-cell backhaul, disaster recovery, video surveillance and Wi-Fi backhaul drive variety of deployment topologies.

Now with the Point-to-Point (PTP) 670 Series solution, Cambium Networks combines best-in-class spectral efficiency and reliability with high-capacity multipoint (HCMP) deployment flexibility. With up to 450 Mbps aggregate throughput, PTP 670 systems let you flexibly, reliably and securely handle today's needs.

### **FLEXIBLE, SPECTRALLY-EFFICIENT, SELF-OPTIMIZING SUB-6GHZ SOLUTION**

Based on our widely deployed, field-proven non-line-of-sight (NLOS) technology, PTP 670 wireless Ethernet bridges offer an array of features that give you more capacity, greater operational flexibility, and the highest spectral efficiency in the industry. PTP 670 systems provide 4.9 to 6.05 GHz, multi-band flexibility in a single radio and operate in channel sizes from 5 to 45 MHz.

With Dynamic Spectrum Optimization (DSO), PTP 670 systems are constantly optimizing the channel of operation to maximize link reliability and performance. The systems can provide up to 99.999% availability in virtually any environment, including non-line-of-sight, long-distance line-of-sight, high interference, over water and desert, and through extreme weather conditions. As a result, you can deliver more throughput with less spectrum and less investment in even the most challenging environments

### **HIGH-CAPACITY MULTIPOINT and POINT-TO-POINT IN SINGLE SOLUTION**

With the PTP 670, operators now have the flexibility to deploy not only in Point to Point topologies but also in High-Capacity Multipoint (HCMP) Applications. HCMP allows for up to 8 remote nodes to connect to a single master radio opening up new deployment models that enable rapid deployment, simplify planning and by using the same hardware regardless of topology a rapid return on investment in equipment and training. Whether your organization is an enterprise, government agency, or service provider, PTP 670 systems are ideal solutions for a wide array of applications such as T1/E1 and fiber replacements or extensions; video surveillance backhaul; LTE, macro-cell, and small-cell backhaul; last-mile access; disaster recovery; network redundancy; and building-to-building campus connectivity.

### **FIELD TESTED AND SECURITY FOR PERFORMANCE IN THE REAL-WORLD**

PTP 670 radios meet industry standards with proven compliance to assure you of interoperability, security, and ruggedization.

- FIPS-197 128/256-bit AES encryption
- IEEE 1588v2 and Synchronous Ethernet (SyncE)
- IPv6/IPv4 dual-stack management support
- Ingress Protection rated (IP66/67) protective aluminum radio enclosures



PTP 670 INTEGRATED



PTP 670 CONNECTORIZED

RADIO TECHNOLOGY	
MODEL	PTP 670
RF BANDS	Wide-band operation 4.9 to 6.05 GHz (Allowable frequencies and bands are dictated by individual country regulations)
CHANNEL SIZES	5, 10, 15, 20, 30, 40, and 45 MHz channels Channel sizes depend on individual country regulations
SPECTRAL EFFICIENCY	10 bps/Hz maximum
CHANNEL SELECTION	By Dynamic Spectrum Optimization or manual intervention Automatic selection on start-up and continual self-optimization to avoid interference
MAXIMUM TRANSMIT POWER	Up to 27 dBm
SYSTEM GAIN	Up to 164 dB with Integrated antenna
MODULATION / ERROR CORRECTION	Fast Preemptive Adaptive Modulation featuring 13 modulation / FEC coding levels ranging from BPSK to 256 QAM dual payload MIMO
DUPLEX SCHEME	Time Division Duplex (TDD) Adaptive or fixed transmit/receive duty cycles Split frequency operation allows separate transmit and receive frequencies where allowed by regulation. Optional TDD synchronization using PTP-SYNC Module
ANTENNA	Integrated Flat panel: 23 dBi Connectorized: operate with a selection of separately-purchased single and dual polarity antennas through 2 x N-type female connectors
RANGE	Up to 155 miles (250 km)
SECURITY	FIPS-197 compliant 128/256-bit AES Encryption (optional) HTTPS and SNMPv3 Identity-based user accounts Configurable password rules User authentication and RADIUS support Event logging and management; optional logging via syslog Disaster recovery and vulnerability management
ETHERNET BRIDGING	
PROTOCOL	IEEE 802.3
LATENCY	1-3 ms one direction
QOS	Extensive QOS supporting up to 8 Queues
PACKET CLASSIFICATION	Layer 2 and Layer 3 IEEE 802.1p, MPLS, Ethernet priority
PACKET PERFORMANCE	Line rate ( >850K packets per second)
TIMING TRANSPORT	Synchronous Ethernet; IEEE 1588v2
FRAME SUPPORT	PTP Mode: Jumbo frame up to 9600 bytes HCMP Mode: 2000 bytes per frame
FLEXIBLE I/O	2 x Gigabit Ethernet copper ports: - Gigabit Port 1: Data + PoE power input - Gigabit Port 2: 802.3at PoE output port 1 x SFP port: single-mode fiber, multi-mode fiber or copper Gigabit Ethernet options available
T1/E1 TDM SUPPORT	8 x T1/E1 TDM (Network Indoor Unit (NIDU)) G.823-compliant timing DC power input (compatible with AC+DC Power Injector output)
MANAGEMENT	
NETWORK MANAGEMENT	In-band and out-of-band management (OOBM)
SYSTEM MANAGEMENT	IPv6/IPv4 dual-stack management support Web access via browser using HTTP or HTTPS/TLS3 SNMP v1, v2c and v3, MIB-II and proprietary PTP MIB Online spectrum analyzer (no impact on payload traffic or network operation)
INSTALLATION	Built-in audio and graphical assistance for link optimization

HIGH CAPACITY MULTI POINT										
REMOTE MODULES MASTER	Up to 8 Nodes									
CHANNEL BANDWIDTH	20 MHz and 40 MHz									
DATA CAPACITY PER REMOTE MODULE IN 1:1 SYMMETRY		Number of Remote Module @ 40 MHz	2	3	4	5	6	7	8	
		Mbps	162	106	80	66	56	46	42	
SPECTRAL EFFICIENCY IN HCMP	8 bps/Hz Max									
LINE RATE PACKET PER SECOND	850K pps									
LATENCY IN HCMP MODE	2 to 4 ms one way(typically)									
PHYSICAL										
DIMENSIONS	Integrated Outdoor Unit (ODU): Width 305mm (12”), Height 305mm (13.5”), Depth 81mm (3.2”) Connectorized ODU: Width 204mm (8.0”), Height 318mm (12.5”), Depth 90mm (3.5”)									
WEIGHT	Integrated ODU: 4.1 kg (8.95 lbs) including bracket Connectorized ODU: 3.1 kg (6.8 lbs) including bracket									
OPERATING TEMPERATURE	-40° to +168.8° F (-40° to +76° C)									
DUST- WATER INTRUSION PROTECTION	IP66 and IP67									
WIND SPEED SURVIVAL	200 mph (322 kph)									
POWER SUPPLY	1. AC power injector: 32° to 104° F (0° to +40° C); 35 W; 90-240 VAC, 50/60Hz Dimensions: Width 5.2”(132mm), Height 1.4”(36mm), Depth 2”(51mm) 2. AC + DC power injector: -40° to 140° F (-40° to +60° C); 70 W; 90-240 VAC, 50/60 Hz Dimensions: Width 9.75” (250 mm), Height 1.5” (40 mm), Depth 3” (80 mm)									
POWER CONSUMPTION	30 W maximum (up to 70 W with 802.3at device on auxiliary port)									
ENVIRONMENTAL & REGULATORY										
PROTECTION AND SAFTEY	UL60950-1; IEC60950-1; EN60950-1; CSA-C22.2 NO. 60950-1; CB approval for Global									
RADIO	4.9 GHz: FCC Part 90Y, RSS-111 5.x GHz: FCC Part 15, sub-parts 15C and 15E; RSS 210 Issue 8; EN 302 502; EN 301 893 Eire ComReg 02/71R1, UK Approval to IR2007									
EMC	Europe – EN 301 489-1 and -4									

RECEIVER SENSITIVITY AND TRANSMIT POWER dbm @ 5.8 GHz								Transmit Power (dBm)
	Channel Size							
Modulation Mode	5 MHz	10 MHz	15 MHz	20 MHz	30 MHz	40 MHz	45 MHz	
BPSK 0.63 Single	-96.8	-94.8	-93.0	-91.8	-90.0	-88.8	-88.3	27
QPSK 0.63 Single	-93.7	-91.7	-89.9	-88.7	-86.9	-85.7	-85.2	26
QPSK 0.87 Dual	-89.7	-87.7	-85.9	-84.7	-82.9	-81.7	-81.1	26
16QAM 0.63 Single	-87.4	-85.4	-83.6	-82.3	-80.6	-79.3	-78.8	25
16QAM 0.63 Dual	-83.4	-81.4	-79.6	-78.4	-76.6	-75.4	-74.9	25
16QAM 0.87 Single	-82.9	-80.8	-79.1	-77.8	-76.1	-74.8	-74.3	25
16QAM 0.87 Dual	-79.8	-77.8	-76.0	-74.8	-73.0	-71.8	-71.2	25
64QAM 0.75 Single	-79.8	-77.8	-76.0	-74.8	-73.0	-71.8	-71.2	24
64QAM 0.75 Dual	-76.7	-74.7	-72.9	-71.6	-69.9	-68.6	-68.1	24
64QAM 0.92 Single	-75.8	-73.8	-72.1	-70.8	-69.1	-67.8	-67.3	24
64QAM 0.92 Dual	-72.5	-70.5	-68.8	-67.5	-65.8	-64.5	-64.0	24
256QAM 0.81 Single	-72.5	-70.5	-68.7	-67.4	-65.7	-64.4	-63.9	23
256QAM 0.81 Dual	-68.8	-66.8	-65.0	-63.8	-62.0	-60.8	-60.3	23

THROUGHPUT (Mbps @ 5 km)							
	Channel Size						
Modulation Mode	5 MHz	10 MHz	15 MHz	20 MHz	30 MHz	40 MHz	45 MHz
BPSK 0.63 Single	2.3	4.8	7.2	9.6	14.5	19.9	21.8
QPSK 0.63 Single	4.7	9.6	14.5	19.3	29.1	39.7	43.5
QPSK 0.87 Single	6.5	13.4	20.2	26.8	40.5	55.2	60.5
16QAM 0.63 Single	6.5	13.4	20.2	26.8	40.5	55.3	60.6
16QAM 0.87 Single	9.3	19.3	29.0	38.5	58.2	79.5	87.1
64QAM 0.75 Single	12.1	25.1	37.7	50.0	75.6	103.2	113.1
64QAM 0.92 Single	16.7	34.5	51.9	68.9	104.1	142.1	155.7
256QAM 0.81 Single	24.2	50.1	75.4	100.1	151.1	206.3	226.1
16QAM 0.63 Dual	13.0	26.8	40.4	53.6	80.9	110.5	121.1
16QAM 0.87 Dual	18.6	38.6	58.0	77.0	116.4	158.9	174.1
64QAM 0.75 Dual	24.2	50.1	75.4	100.0	151.1	206.3	226.1
64QAM 0.92 Dual	33.3	69.0	103.8	137.8	208.1	284.1	311.3
256QAM 0.81 Dual	48.4	100.2	150.7	200.1	302.2	412.6	452.2

## SCOPE OF WORK AND RESPONSIBILITIES

### LIVINGSTON COUNTY CENTRAL DISPATCH 911 VHF MICROWAVE LINKS

#### **COMSOURCE, INC. RESPONSIBILITIES**

1. Supply, program, install, optimize and integrate Four (4) 5.9 Ghz Microwave links to be located at Hartland, Brighton, Central, Green Oak and Hamburg antenna sites.
2. Supply and install One (1) additional outdoor cabinet at the Green Oak site.
3. Supply a Critical Spares kit.
4. Provide "hot switch over" to the existing tie lines at the four (4) Tower sites.
5. Test Post Deployment system functionality.
6. Provide Program Management services throughout the system deployment.
7. Provide on-site 24 X 7 response services for ALL VHF Paging microwave sites.
8. Provide Electrical Remediation services up to \$10,000.00.
9. All required work to be performed during normal working hours.
10. All installation activity will adhere to Motorola's R-56 standards.
11. Provide all contracted products and services within 75-90 days ARO.

#### **CUSTOMER RESPONSIBILITIES**

1. Arrange for normal working hours, M-F 8AM-5PM, site access for required work.
2. Identify a single point of contact for overall logistics and general instructions.
3. Provide a County IT contact for integration assistance.
6. Provide any County requirements for Insurance and/or Safety Training.
7. Interface with the Tower Site Owners/Managers for approvals and other potential remediation requirements that may be required.
8. Agree to the payment schedule listed on the associated BOM & Pricing list.



**MOTOROLA**  
SOLUTIONS  
PLATINUM CHANNEL PARTNER

Corporate Office: 41271 Concept Drive, Plymouth, MI 48170 | 734.738.0800  
Service Center: 1919 Birchwood Drive, Troy, MI 48083 | 248.853.5430

[www.comsourcemi.com](http://www.comsourcemi.com)



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**LIVINGSTON COUNTY CENTRAL DISPATCH 911**  
**VHF MICROWAVE LINKS**

**BILL OF MATERIALS AND SYSTEM PRICING**

12/15/2019

<b>BRIGHTON TO GREEN OAK</b>							
<u>Qty</u>	<u>Model Number</u>	<u>Description</u>	<u>MSRP</u>	<u>MiDeal Disc. %</u>	<u>Un. Price</u>	<u>Ext. Price</u>	
2	HPD3-4.7NS	4.5-5.0 GHZ, 29DBI 3' PARABOLIC DISH	\$ 1,535.00	10%	\$ 1,381.50	\$	2,763.00
8	L4A-NMNM-10P	ANDREW 10' LDF4-50 Low PIM Jumper NM - NM	\$ 102.64	10%	\$ 92.38	\$	739.04
12	1010419001	PTP800 Coax Ground Kit	\$ 26.00	10%	\$ 23.40	\$	280.80
2	C000065L007B	PTP 670 LPU and Grounding Kit	\$ 400.00	10%	\$ 360.00	\$	720.00
2	C050067H002B	PTP 670 Conn END with AC+DC Enh Supply	\$ 2,795.00	10%	\$ 2,515.50	\$	5,031.00
1	WB3665HH	PTP-SYNC Synchronization Unit for PTP 600	\$ 350.00	10%	\$ 315.00	\$	315.00
200	AVA5-50	7/8" Heliac AVA Cable	\$ 7.27	10%	\$ 6.55	\$	1,310.00
200	AVA5-50	7/8" Heliac AVA Cable	\$ 7.27	10%	\$ 6.55	\$	1,310.00
4	GT-NFF-AL	Single Gas Tube Surge Protector NF/NF	\$ 47.70	10%	\$ 42.93	\$	171.72
1	A5FX-EZPT	7/8" AVA-5 Automated Prep Tool	\$ 412.15	10%	\$ 370.94	\$	370.94
4	78EZNM	7/8" Cable - N-Male EZfit	\$ 36.02	10%	\$ 32.42	\$	129.68
4	78EZNF	7/8" Cable - N-Female EZfit	\$ 41.60	10%	\$ 37.44	\$	149.76
250	AVA5-50	7/8" Heliac AVA Cable	\$ 7.27	10%	\$ 6.55	\$	1,637.50
250	AVA5-50	7/8" Heliac AVA Cable	\$ 7.27	10%	\$ 6.55	\$	1,637.50
1	UPS	SMART 3000 W/Network Card	\$ 2,680.00	10%	\$ 2,412.00	\$	2,412.00
1	ERPRO-8	8 Port Router	\$ 413.90	10%	\$ 372.51	\$	372.51
1	MISC	TOWER - Misc Install materials	\$ 10,000.00	10%	\$ 9,000.00	\$	9,000.00
1	INSTALL	3' Dish Install Labor and Alignmnet	\$ 18,500.00	5%	\$ 17,575.00	\$	17,575.00
1	TECH	Connectivity and Integration	\$ 10,000.00	5%	\$ 9,700.00	\$	9,500.00
1	PM	Project Management	\$ 4,000.00	5%	\$ 3,800.00	\$	3,800.00
1	FREIGHT	COMPLETE	\$ 450.00	0%	\$ 450.00	\$	450.00
1	MAINT	First Year 24 X 7 Warranty Response	\$ 1,500.00	10%	\$ 1,333.00	\$	1,333.00
<b>SUBTOTAL</b>						<b>\$</b>	<b>61,008.45</b>

<b>BRIGHTON TO HARTLAND</b>							
<u>Qty</u>	<u>Model Number</u>	<u>Description</u>	<u>MSRP</u>	<u>MiDeal Disc. %</u>	<u>Un. Price</u>	<u>Ext. Price</u>	
2	HPD3-4.7NS	4.5-5.0 GHZ, 29DBI 3' PARABOLIC DISH	\$ 1,535.00	10%	\$ 1,381.50	\$	2,763.00

8	L4A-NMNM-10P	ANDREW 10' LDF4-50 Low PIM Jumper NM - NM	\$ 102.64	10%	\$ 92.38	\$ 739.04
12	1010419001	PTP800 Coax Ground Kit	\$ 26.00	10%	\$ 23.40	\$ 280.80
2	C000065L007B	PTP 670 LPU and Grounding Kit	\$ 400.00	10%	\$ 360.00	\$ 720.00
2	C050067H002B	PTP 670 Conn END with AC+DC Enh Supply	\$ 2,795.00	10%	\$ 2,515.50	\$ 5,031.00
1	WB3665HH	PTP-SYNC Synchronization Unit for PTP 600	\$ 350.00	10%	\$ 315.00	\$ 315.00
250	AVA5-50	7/8"" Helix AVA Cable	\$ 7.27	10%	\$ 6.55	\$ 1,637.50
250	AVA5-50	7/8"" Helix AVA Cable	\$ 7.27	10%	\$ 6.55	\$ 1,637.50
4	GT-NFF-AL	Single Gas Tube Surge Protector NF/NF	\$ 47.70	10%	\$ 42.93	\$ 171.72
1	A5FX-EZPT	7/8"" AVA-5 Automated Prep Tool	\$ 412.15	10%	\$ 370.94	\$ 370.94
4	78EZNM	7/8"" Cable - N-Male EZfit	\$ 36.02	10%	\$ 32.42	\$ 129.68
4	78EZNF	7/8"" Cable - N-Female EZfit	\$ 41.60	10%	\$ 37.44	\$ 149.76
200	AVA5-50	7/8"" Helix AVA Cable	\$ 7.27	10%	\$ 6.55	\$ 1,310.00
200	AVA5-50	7/8"" Helix AVA Cable	\$ 7.27	10%	\$ 6.55	\$ 1,310.00
1	UPS	SMART 3000 W/Network Card	\$ 2,680.00	10%	\$ 2,412.00	\$ 2,412.00
1	ERPRO-8	8 Port Router	\$ 413.90	10%	\$ 372.51	\$ 372.51
1	MISC	TOWER - Misc Install materials	\$ 10,000.00	10%	\$ 9,000.00	\$ 9,000.00
1	INSTALL	3' Dish Install Labor and Alignmnet	\$ 18,500.00	5%	\$ 17,575.00	\$ 17,575.00
1	TECH	Connectivity and Integration	\$ 10,000.00	5%	\$ 9,700.00	\$ 9,500.00
1	PM	Project Management	\$ 4,000.00	5%	\$ 3,800.00	\$ 3,800.00
1	FREIGHT	COMPLETE	\$ 450.00	0%	\$ 450.00	\$ 450.00
1	MAINT	First Year 24 X 7 Warranty Response	\$ 1,500.00	10%	\$ 1,333.00	\$ 1,333.00
					<b>SUBTOTAL</b>	<b>\$ 61,008.45</b>

**CENTRAL TO BRIGHTON**

<u>Qty</u>	<u>Model Number</u>	<u>Description</u>	<u>MSRP</u>	<u>MiDeal Disc. %</u>	<u>Un. Price</u>	<u>Ext. Price</u>
2	HPD3-4.7NS	4.5-5.0 GHZ, 29DBI 3' PARABOLIC DISH	\$ 1,535.00	10%	\$ 1,381.50	\$ 2,763.00
8	L4A-NMNM-10P	ANDREW 10' LDF4-50 Low PIM Jumper NM - NM	\$ 102.64	10%	\$ 92.38	\$ 739.04
12	1010419001	PTP800 Coax Ground Kit	\$ 26.00	10%	\$ 23.40	\$ 280.80
2	C000065L007B	PTP 670 LPU and Grounding Kit	\$ 400.00	10%	\$ 360.00	\$ 720.00
2	C050067H002B	PTP 670 Conn END with AC+DC Enh Supply	\$ 2,795.00	10%	\$ 2,515.50	\$ 5,031.00
1	WB3665HH	PTP-SYNC Synchronization Unit for PTP 600	\$ 350.00	10%	\$ 315.00	\$ 315.00
270	AVA5-50	7/8"" Helix AVA Cable	\$ 7.27	10%	\$ 6.55	\$ 1,768.50
270	AVA5-50	7/8"" Helix AVA Cable	\$ 7.27	10%	\$ 6.55	\$ 1,768.50
4	GT-NFF-AL	Single Gas Tube Surge Protector NF/NF	\$ 47.70	10%	\$ 42.93	\$ 171.72
1	A5FX-EZPT	7/8"" AVA-5 Automated Prep Tool	\$ 412.15	10%	\$ 370.94	\$ 370.94
4	78EZNM	7/8"" Cable - N-Male EZfit	\$ 36.02	10%	\$ 32.42	\$ 129.68
4	78EZNF	7/8"" Cable - N-Female EZfit	\$ 41.60	10%	\$ 37.44	\$ 149.76

200	AVA5-50	7/8"" HeliAx AVA Cable	\$ 7.27	10%	\$ 6.55	\$ 1,310.00
200	AVA5-50	7/8"" HeliAx AVA Cable	\$ 7.27	10%	\$ 6.55	\$ 1,310.00
2	UPS	SMART 3000 W/Network Card	\$ 2,680.00	10%	\$ 2,412.00	\$ 4,824.00
1	ERPRO-8	8 Port Router	\$ 413.90	10%	\$ 372.51	\$ 372.51
1	MISC	TOWER - Misc Install materials	\$ 10,000.00	10%	\$ 9,000.00	\$ 9,000.00
1	INSTALL	3' Dish Install Labor and Alignmnet	\$ 18,500.00	5%	\$ 17,575.00	\$ 17,575.00
1	TECH	Connectivity and Integration	\$ 10,000.00	5%	\$ 9,700.00	\$ 9,500.00
1	PM	Project Management	\$ 4,000.00	5%	\$ 3,800.00	\$ 3,800.00
1	FREIGHT	COMPLETE	\$ 450.00	0%	\$ 450.00	\$ 450.00
1	MAINT	First Year 24 X 7 Warranty Response	\$ 1,500.00	10%	\$ 1,333.00	\$ 1,333.00
<b>SUBTOTAL</b>						<b>\$ 63,682.45</b>

**GREEN OAK TO HAMBURG**

<u>Qty</u>	<u>Model Number</u>	<u>Description</u>	<u>MSRP</u>	<u>MiDeal Disc. %</u>	<u>Un. Price</u>	<u>Ext. Price</u>
2	HPD3-4.7NS	4.5-5.0 GHZ, 29DBI 3' PARABOLIC DISH	\$ 1,535.00	10%	\$ 1,381.50	\$ 2,763.00
8	L4A-NMNM-10P	ANDREW 10' LDF4-50 Low PIM Jumper NM - NM	\$ 102.64	10%	\$ 92.38	\$ 739.04
12	1010419001	PTP800 Coax Ground Kit	\$ 26.00	10%	\$ 23.40	\$ 280.80
2	C000065L007B	PTP 670 LPU and Grounding Kit	\$ 400.00	10%	\$ 360.00	\$ 720.00
2	C050067H002B	PTP 670 Conn END with AC+DC Enh Supply	\$ 2,795.00	10%	\$ 2,515.50	\$ 5,031.00
1	WB3665HH	PTP-SYNC Synchronization Unit for PTP 600	\$ 350.00	10%	\$ 315.00	\$ 315.00
300	AVA5-50	7/8"" HeliAx AVA Cable	\$ 7.27	10%	\$ 6.55	\$ 1,965.00
300	AVA5-50	7/8"" HeliAx AVA Cable	\$ 7.27	10%	\$ 6.55	\$ 1,965.00
4	GT-NFF-AL	Single Gas Tube Surge Protector NF/NF	\$ 47.70	10%	\$ 42.93	\$ 171.72
1	A5FX-EZPT	7/8"" AVA-5 Automated Prep Tool	\$ 412.15	10%	\$ 370.94	\$ 370.94
4	78EZNM	7/8"" Cable - N-Male EZfit	\$ 36.02	10%	\$ 32.42	\$ 129.68
4	78EZNF	7/8"" Cable - N-Female EZfit	\$ 41.60	10%	\$ 37.44	\$ 149.76
225	AVA5-50	7/8"" HeliAx AVA Cable	\$ 7.27	10%	\$ 6.55	\$ 1,473.75
225	AVA5-50	7/8"" HeliAx AVA Cable	\$ 7.27	10%	\$ 6.55	\$ 1,473.75
1	UPS	SMART 3000 W/Network Card	\$ 2,680.00	10%	\$ 2,412.00	\$ 2,412.00
1	ERPRO-8	8 Port Router	\$ 413.90	10%	\$ 372.51	\$ 372.51
1	MISC	TOWER - Misc Install materials	\$ 10,000.00	10%	\$ 9,000.00	\$ 9,000.00
1	INSTALL	3' Dish Install Labor and Alignmnet	\$ 18,500.00	5%	\$ 17,575.00	\$ 17,575.00
1	TECH	Connectivity and Integration	\$ 10,000.00	5%	\$ 9,700.00	\$ 9,500.00
1	PM	Project Management	\$ 4,000.00	5%	\$ 3,800.00	\$ 3,800.00
1	FREIGHT	COMPLETE	\$ 450.00	0%	\$ 450.00	\$ 450.00
1	ELECTRICAL	Reserve For Required Electrical Work	\$ 10,000.00	0%	\$ 10,000.00	\$ 10,000.00
1	MAINT	First Year 24 X 7 Warranty Response	\$ 1,500.00	10%	\$ 1,333.00	\$ 1,333.00

SUBTOTAL \$ 71,990.95

**CRITICAL SPARES KIT**

<u>Qty</u>	<u>Model Number</u>	<u>Description</u>	<u>MSRP</u>	<u>MiDeal</u> <u>Disc. %</u>	<u>Un. Price</u>	<u>Ext. Price</u>
2	C000065L007B	PTP 670 LPU and Grounding Kit	\$ 400.00	10%	\$ 360.00	\$ 720.00
2	C050067H002B	PTP 670 Conn END with AC+DC Enh Supply	\$ 2,795.00	10%	\$ 2,515.50	\$ 5,031.00
1	WB3665HH	PTP-SYNC Synchronization Unit for PTP 600	\$ 350.00	10%	\$ 315.00	\$ 315.00
1	ERPRO-8	8 Port Router	\$ 413.90	10%	\$ 372.51	\$ 372.51
SUBTOTAL						\$ 6,438.51

**GREEN OAK CABINET**

<u>Qty</u>	<u>Model Number</u>	<u>Description</u>	<u>MSRP</u>	<u>MiDeal</u> <u>Disc. %</u>	<u>Un. Price</u>	<u>Ext. Price</u>
1	18 U	28' X 36' Outdoor Cabinet W/AC	\$ 7,000.00	10%	\$ 6,300.00	\$ 6,300.00
1	INSTALL	CABINET COMPLETE	\$ 3,500.00	5%	\$ 3,325.00	\$ 3,325.00
SUBTOTAL						\$ 9,625.00

**EXISTING MICROWAVE LINKS RESPONSE**

<u>Qty</u>	<u>Model Number</u>	<u>Description</u>	<u>MSRP</u>	<u>MiDeal</u> <u>Disc. %</u>	<u>Un. Price</u>	<u>Ext. Price</u>
7	MAINT	One Year 24 X 7 On-Site Response	\$ 1,500.00	10%	\$ 1,333.00	\$ 9,331.00
SUBTOTAL						\$ 9,331.00

TOTAL PROJECT COST \$ 283,084.81

**PAYMENT TERMS**

**PURCHASE:** 50% DOWN PAYMENT WITH ORDER  
50% DUE NET 30 DAYS UPON SYSTEM COMPLETION AND CUSTOMER ACCEPTANCE



RESOLUTION

NO: [Title]

LIVINGSTON COUNTY

DATE: Click or tap to enter a date.

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**Resolution Authorizing the Realignment of the Overall Project Budget for the New 911 Central Dispatch Facility – County Administration**

**WHEREAS,** Resolution 2018-06-108 authorized the project cost of \$6.5 million for the new 911 Central Dispatch facility, which included an authorized cost of construction by Construction Manager JS Vig in the amount of \$5,444,173, and the remainder of the project budget being designated for items deemed owner responsibility or architect and engineering costs: and

**WHEREAS,** Resolution 2019-04-051 authorized an additional \$175,580 to cover Owner Responsibility costs related to the new facility, bringing the total authorized cost for the new facility to \$6,675,580; and

**WHEREAS,** the project is nearing completion, with just a few items within the project expected to be complete in the spring of this year. However, several unexpected costs outside of the original budget remain outstanding: and

**WHEREAS,** prior to construction certain unexpected issues arose in preparing the ground for construction which contributed to the depletion of the construction contingency and caused the construction piece of the project with JS Vig to go over the \$5,444,173 authorized; and

**WHEREAS,** there are, however, sufficient funds remaining in the Owner Responsibility piece of the project to cover outstanding invoices and the remainder of the Owner Responsibility items and not go over the authorized project amount of \$6,675,580.

**THEREFORE BE IT RESOLVED** the Livingston County Board of Commissioners authorizes the Construction Committee the authority to realign and manage funds as needed within the overall project budget of \$6,675,580 to complete the project.

**BE IT FURTHER RESOLVED** that the Board of Commissioners authorizes the Construction Committee the authority to expend funds as necessary to complete the new Central Dispatch Facility.

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**MOVED:  
SECONDED:  
CARRIED:**

**RESOLUTION**

**NO:** [Title]

**LIVINGSTON COUNTY**

**DATE:** Click or tap to enter a date.

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**Resolution Authorizing the Honorary Naming of Park Features at Fillmore County Park – Parks and Open Space Advisory Committee/Planning Department**

**WHEREAS,** The Trust Agreement of Raymond Fillmore states that should any baseball/softball diamonds be developed in Fillmore County Park they shall be specifically named after John E. La Belle; and

**WHEREAS,** The Parks and Open Space Advisory Committee wishes to honor this request and hold a naming ceremony of the “John E. La Belle Fields” at the 2020 opening day of Fillmore County Park; and

**WHEREAS,** The Parks and Open Space Advisory Committee also desires to honor the late Livingston County Administrator, Ken Hinton, by naming the Fillmore County Park trail “Hinton Trail” and holding a naming ceremony of the trail at the 2020 opening day of Fillmore County Park; and

**WHEREAS,** such park feature names will be prominently posted on all-weather signs at the play field and trailhead.

**THEREFORE BE IT RESOLVED** that the Livingston County Board of Commissioners hereby approve the honorary naming of the sports field and trail at Fillmore County Park.

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**MOVED:**

**SECONDED:**

**CARRIED:**



**304 East Grand River Avenue, Howell, MI**  
**Phone (517) 546-7555 Fax (517) 552-2347**  
**Web Site: <https://livgov.com/plan/>**

## Memorandum

**To: Livingston County Board of Commissioners**  
**From: Kathleen Kline-Hudson, Planning Director**  
**Date: 2/10/20**  
**Re: Naming of Fillmore County Park Trail and Play Field**

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This resolution is for the honorary naming of the play field and trail at Fillmore County Park. The naming of the sports field is stated in the trust agreement of Raymond Fillmore. The naming of the trail is at the suggestion of the Livingston County Parks and Open Space Advisory Committee.

It is intended that both naming ceremonies would take place on the opening day of Fillmore County Park in the spring of 2020, and that permanent signs will display these park feature names.

If you have any questions regarding this matter please contact me.



## **LIVINGSTON COUNTY PARKS & OPEN SPACE ADVISORY COMMITTEE RESOLUTION OF SUPPORT**

### **NAMING OF FILLMORE COUNTY PARK TRAIL AND PLAY FIELD**

**WHEREAS,** The Trust Agreement of Raymond Fillmore states that should any baseball/softball diamonds be developed in Fillmore County Park they shall be specifically named after John E. La Belle; and

**WHEREAS,** The Parks and Open Space Advisory Committee wishes to honor this request and hold a naming ceremony of the “John E. La Belle Fields” at the 2020 opening day of Fillmore County Park; and

**WHEREAS,** The Parks and Open Space Advisory Committee also desires to honor the late Livingston County Administrator, Ken Hinton, by naming the Fillmore County Park trail “Hinton Trail” and holding a naming ceremony of the trail at the 2020 opening day of Fillmore County Park; and

**WHEREAS,** such park feature names will be prominently posted on all-weather signs at the play field and trailhead.

**THEREFORE BE IT RESOLVED** that the Livingston County Parks and Open Space Advisory Committee approves this Resolution of Support for the honorary naming of the Fillmore County Park play field and trail.

Parks and Open Space Advisory Committee  
Resolution Passed January 29, 2020

# MEETING MINUTES

JANUARY 29, 2020  
ADMINISTRATION BUILDING - CONFERENCE ROOM 1  
304 E. Grand River Avenue, Howell, MI 48843

## PARKS & OPEN SPACE ADVISORY COMMITTEE

<input type="checkbox"/> GARY CHILDS	<input checked="" type="checkbox"/> MIKE ARENS	<input checked="" type="checkbox"/> CHRIS FOLTS	<input type="checkbox"/> DOUG HELZERMAN
<input checked="" type="checkbox"/> BRIAN JONCKHEERE	<input checked="" type="checkbox"/> JAN LOBUR	<input checked="" type="checkbox"/> GARY EDWARDS	<input checked="" type="checkbox"/> WES NAKAGIRI
<input checked="" type="checkbox"/> BILL CALL	<input type="checkbox"/> BILL RUBIN	<input type="checkbox"/> MICHAEL POWERS	<input checked="" type="checkbox"/> MARTHA HAGLUND
OTHERS: KELLIE PROKUDA KATHLEEN KLINE-HUDSON SCOTT BARB			

1. **Call to Order:** Meeting called to order by Commissioner Nakagiri at 9:30 AM.

2. **Approval of Minutes:** MINUTES OF MEETING DATED NOVEMBER 6, 2019

**MOTION TO APPROVE THE MINUTES:**  
**MOVED BY CALL - SECONDED BY EDWARDS**  
**ALL IN FAVOR - MOTION PASSED**

3. **Approval of Agenda:** AGENDA OF MEETING DATED JANUARY 29, 2020:

**MOTION TO APPROVE THE AGENDA AS AMENDED:**  
**MOVED BY FOLTS - SECONDED BY LOBUR**  
**ALL IN FAVOR – MOTION PASSED**

4. **Call to the Public** – None

5. **Fillmore County Park Update**

- Construction Update – what remains to be done
  - Wood chip trails, trail map and markers
  - Ribbon cutting around May 15, 2020
- Trail and Sports Field Naming

**MOTION TO PRESENT A RESOLUTION TO THE BOARD OF COMMISSIONERS RECOMMENDING THE NAMING OF THE PLAY FIELD TO “JOHN E. LABELLE FIELDS” AND TRAIL TO “HINTON TRAIL”:**  
**MOVED BY ARENS - SECONDED BY LOBUR**  
**ALL IN FAVOR – MOTION PASSED**

- Operations and Maintenance Plan
  - Meeting with SELCRA, Chris Folts and Mike Arens



## 6. Lutz County Park

- Facilities Update
- Update on Dark Sky Designation
  - Application packet is 70% complete
  - Working on public access policy

## 7. Park Rules

- Fillmore Park Rules

**MOTION TO ADOPT PARK RULES SUBJECT TO REVISIONS DISCUSSED BY COMMITTEE  
AND ATTORNEY REVIEW:  
MOVED BY ARENS - SECONDED BY EDWARDS  
ALL IN FAVOR – MOTION PASSED**

- Lutz Park Rules

**MOTION TO ADOPT PARK RULES SUBJECT TO REVISIONS DISCUSSED BY COMMITTEE  
AND ATTORNEY REVIEW:  
MOVED BY EDWARDS - SECONDED BY ARENS  
ALL IN FAVOR – MOTION PASSED**

## 8. Other

- Planning Department update on Livingston County Trail Network Plan

## 7. Items for Discussion on Next Agenda

- Review Attorney changes to park rules
- Opening day

## 8. Adjournment

**MOTION TO ADJOURN AT 10:45 AM.  
MOVED BY LOBUR - SECONDED BY FOLTS  
ALL IN FAVOR - MOTION PASSED**

**RESOLUTION**

**NO:** [Title]

**LIVINGSTON COUNTY**

**DATE:** Click or tap to enter a date.

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**Resolution Authorizing Lutz County Park UNSP Application for Recognition - Parks and Open Space Advisory Committee/Planning**

**WHEREAS,** The Parks and Open Space Advisory Committee has researched the viability of Lutz County Park as an Urban Night Sky Place (UNSP) and has determined that an opportunity exists; and

**WHEREAS,** an application for recognizing Lutz County Park as an Urban Night Sky Place must be submitted to the International Dark Sky Association; and

**WHEREAS,** The Lutz County Park will be recognized as an official Urban Night Sky Place upon application approval; and

**WHEREAS,** such park recognition will be prominently posted on all-weather signs at the park and park rules will be revised to accommodate night sky viewing.

**THEREFORE BE IT RESOLVED** that the Livingston County Board of Commissioners hereby approves the submission of an application for an Urban Night Sky Place recognition for Lutz County Park.

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**MOVED:**  
**SECONDED:**  
**CARRIED:**



**LIVINGSTON COUNTY, MICHIGAN  
PLANNING DEPARTMENT**

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**304 East Grand River Avenue, Howell, MI  
Phone (517) 546-7555 Fax (517) 552-2347  
Web Site: <https://livgov.com/plan/>**

## Memorandum

**To: Livingston County Board of Commissioners**  
**From: Kathleen Kline-Hudson, Planning Director**  
**Date: 2/10/20**  
**Re: Lutz County Park Urban Night Sky Place recognition**

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This resolution is in support of pursuing the application for recognition of the Lutz County Park as an Urban Night Sky Place. The International Dark Sky Association establishes criteria for the recognition of certain natural areas throughout the world as dark skies friendly and we believe the Lutz County Park meets this criteria. The application process has started and we are requesting the Board of Commissioners support for this project.

It is intended that once the application and materials have been completed, all files will be forwarded to the International Dark Sky Association for review and approval at one of the 4 established deadlines in 2020.

If you have any questions regarding this matter please contact me.

# MEETING MINUTES

MARCH 6, 2019

ADMINISTRATION BUILDING - CONFERENCE ROOM 1  
304 E. Grand River Avenue, Howell, MI 48843

## PARKS & OPEN SPACE ADVISORY COMMITTEE

☒ GARY CHILDS

☐ BRIAN JONCKHEERE

☒ BILL CALL

☒ MIKE ARENS

☐ JAMES SPARKS

☒ BILL RUBIN

☒ CHRIS FOLTS

☐ JAN LOBUR

☒ WES NAKAGIRI

☒ DOUG HELZERMAN

☐ GARY EDWARDS

☒ CLAIRE STEVENS

OTHERS: KELLIE PROKUDA  
JANET VANDEWINKLE  
TIM CHURCH  
KYLE TOKEN

KATHLEEN KLINE-HUDSON  
JAY BIBBY  
ANNE RICHARDSON  
CHRIS CONRAD

SCOTT BARB  
MICHAEL POWERS  
CASEY SOMERVILLE

1. **Call to Order:** Meeting called to order by Commissioner Childs at 9:40 AM.

2. **Approval of Minutes:** MINUTES OF MEETING DATED JANUARY 9, 2019

**MOTION TO APPROVE THE MINUTES:  
MOVED BY ARENS - SECONDED BY FOLTS  
ALL IN FAVOR - MOTION PASSED**

3. **Approval of Agenda:** AGENDA OF MEETING DATED MARCH 6, 2019:

**MOTION TO APPROVE THE AGENDA AS AMENDED:  
MOVED BY ARENS - SECONDED BY FOLTS  
ALL IN FAVOR – MOTION PASSED**

4. **Call to the Public –** None

5. **Discussion Regarding Inclusive Playground** - Presentation by Casey Somerville

**MOTION TO PRESENT A REPORT TO THE BOARD OF COMMISSIONERS ON DEVELOPING  
AN INCLUSIVE PLAYGROUND AT FILLMORE COUNTY PARK:**

**MOVED BY ARENS - SECONDED BY CALL  
ALL IN FAVOR – MOTION PASSED**

6. **Fillmore County Park Update**

- Pre-construction meeting, 2/12/19
- Park Rules
- Park Usage by HAPRA and SELCRA
- Ideas for ribbon cutting/opening day festivities and ground breaking

**7. Lutz County Park**

- Update on Dark Sky Designation
  - Nomination Letter received
  - Letter of Support
  - Lighting Plan

**8. 5 Year Parks and Open Space Plan**

- Power Point Overview of Draft Document
- Public Comments Received Thus Far
- March 20 Public Hearing Date
- April 22<sup>nd</sup> date for Adoption of Plan

**9. Other**

- Huron-Clinton Metroparks are updating their park plans.

**10. Adjournment**

**MOTION TO ADJOURN AT 11:15 AM.  
MOVED BY ARENS - SECONDED BY CALL  
ALL IN FAVOR - MOTION PASSED**



**RESOLUTION**

**NO:** [Title]

**LIVINGSTON COUNTY**

**DATE:** Click or tap to enter a date.

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**Resolution to Adopt Fillmore County Park Rules – Livingston County Parks and Open Space Advisory Committee/Planning**

**WHEREAS,** Park rules are a common and invaluable management tool which will provide:

- 1) park users with information regarding permitted and prohibited activities within park boundaries, and
- 2) an assumption of risk statement to reduce Livingston County liability for park use; and

**WHEREAS,** the Parks and Open Space Advisory Committee has drafted Fillmore County Park Rules with language recommended by the County Attorney; and

**WHEREAS,** such rules will be prominently posted in an all-weather display case at the trailhead/parking lot location of Fillmore County Park, and

**WHEREAS,** this Resolution has been recommended for adoption by the Livingston County Parks and Open Space Advisory Committee.

**THEREFORE BE IT RESOLVED** that the Livingston County Board of Commissioners hereby adopts the Fillmore County Park Rules.

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**MOVED:**

**SECONDED:**

**CARRIED:**



**304 East Grand River Avenue, Howell, MI**  
**Phone (517) 546-7555 Fax (517) 552-2347**  
**Web Site: <https://livgov.com/plan/>**

## Memorandum

**To: Livingston County Board of Commissioners**  
**From: Kathleen Kline-Hudson, Planning Director**  
**Date: 2/12/20**  
**Re: Fillmore County Park Rules**

---

The Parks and Open Space Advisory Committee has worked with the County Attorney to create rules for the use of Fillmore County Park.

Although the Lutz County Park Rules were used as the template for Fillmore County Park Rules, they have been substantially updated by the County Attorney to reflect current law regarding weapons, personal conduct and many other subjects covered in the parks rules.

In an effort to protect both the park land and the citizens of the County, it is important for these rules to be adopted and posted at the park prior to opening day in May 2020. It is also important to note that although legislation authorizes Livingston County to operate a park with park rules, Livingston County does not have a civil or criminal mechanism for enforcing the park rules. The Parks and Open Space Advisory Committee does not feel that a county ordinance for enforcement of park rules is warranted at this time.

If you have any questions regarding this matter please contact me.



The Livingston County Board of Commissioners, in order to maintain and operate the designated public parks under its control in the best interests of the people of Livingston County, and in order to insure maximum recreational benefits from these facilities, has adopted the rules set forth herein under powers granted to it by Public Act 156 of 1917 of the State of Michigan, as amended. The purpose of the Fillmore County Park as envisioned by its benefactor, Raymond Fillmore, is to:

- Preserve the beauty and diversity of the natural environment within the park;
- Provide a county park for the enjoyment and benefit of the citizens of Livingston County
- Provide active outdoor recreational opportunities for the enjoyment of present and future generations.

Enjoy your visit!

**SECTION 1. DEFINITIONS**

- A. "County" or "County Board" shall mean the Livingston County Board of Commissioners or its duly-authorized agents.
- B. "County Park property" shall mean all lands, waters, improvements and property designated as county park property administered by or under the jurisdiction of the County Board.
- C. "Person" or "persons" shall mean individuals, male or female, singular or plural, firms, corporations, or any group or gathering of individuals.
- D. "Camping" means the overnight lodging or sleeping of person or persons in a tent, trailer coach, vehicle camper, motor vehicle, or in any other conveyance erected, parked or placed on the premises within any park or recreation area administered by the County Board.
- E. "Rules" shall mean the rules adopted by the County Board applicable to the use and management of County Park property of the said County Board and all amendments thereto. These rules are enforced in compliance with State of Michigan Public Act 156 of 1917.

**SECTION 2. GENERAL PUBLIC**

Entry into lands of the County and enjoyment of its parks and park facilities is a privilege, which is extended to members of the public and is contingent upon compliance with these Rules.

**SECTION 3. HOURS**

Parks under the jurisdiction of the County shall be open from sunrise to sunset. No person shall enter or remain upon County Park property between sunset to sunrise except for those having written permission for extended hours. Upon application to the County, said hours may be extended. It shall be unlawful for any person to enter any portion of County Park property which has

been designated as closed to public use or entry.

**SECTION 4. EMERGENCY POWERS**

Nothing in these rules shall:

- A. Prohibit or hinder duly-authorized agents of the County or any peace officers from performing their official duties.
- B. Prohibit the County from establishing emergency rules required to protect the health, welfare, and safety of park visitors and to protect County Park property, and to maintain order.

**SECTION 5. CAMPING**

Camping is prohibited unless a designated camping area has been established.

**SECTION 6. FEES AND CHARGES FOR RESERVED AREAS**

No Person shall use any facility, land or area for which a fee and charge has been established by the County without payment of such fee or charge, unless authorized in writing by the County.

**SECTION 7. PERMITS FOR RESERVED AREAS**

- A. Application for a permit for reserved park space shall be made upon forms furnished by the County.
- B. In the event more applications for reserved park space are received than space is available, such applications shall be considered in the chronological order received.
- C. Nothing contained herein shall operate to exempt the users of reserved space from full compliance with all rules of the County relating to use and conduct on County Park property.
- D. No erection, construction or maintenance shall be made above or below ground, across or beneath this County Park property by any person, firm or corporation without first having obtained

written permission from the County authorizing such installation or construction and a permit specifying in detail the work to be done and the conditions to be fulfilled to the terms of such approval.

- E. Notwithstanding any of the provisions hereof, the County or its agent may upon written application, grant specific use permits for special uses when in the opinion of the County Board special consideration is warranted.

**SECTION 8. MOTOR-DRIVEN VEHICLES**

No Person on County Park property shall:

- A. Operate a motor-driven vehicle of any kind or nature except on designated roads and parking areas.
- B. Operate a motor-driven vehicle on any park road at a speed exceeding 25 miles per hour or at any speed greater than that posted, or in a careless or negligent manner likely to endanger any persons or property.
- C. Operate any motor-driven vehicle on any park road or parking area in a careless or negligent manner likely to endanger any person or property.
- D. Operate any motor-driven sled, toboggan, snowmobile or any other motor-driven vehicle on any property under the management, supervision or control of County.
- E. Operate a motor-driven trail bike, off-road, all-terrain vehicle, snowmobile or similar type of sport vehicle on any road or County Park property unless specifically designated for such purpose.

**SECTION 9. PARKING IN PROHIBITED AREAS**

- A. No operator of a vehicle shall stop, stand or park said vehicle in any place marked as a passenger loading or unloading or loading zone, other than for the expeditious loading or unloading of

- passengers or for the unloading and delivery or pick up and loading of materials.
- B. No operator of a vehicle shall stop, stand or park such vehicle upon any roadway or in any parking area in such a manner as to form an obstruction to traffic thereon.
  - C. No operator of a vehicle shall stop, stand or park a vehicle in any area not designated for such purposes.
  - D. No operator of a vehicle shall stop, park or stand in a space designated for people with disabilities, or the striped aisle adjacent to that space, unless properly displaying a valid disability parking placard or license plate.

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#### **SECTION 10. OPERATION OF BICYCLES**

- A. No Person shall use a bicycle, scooter or similar conveyance except upon roadways, parking area or specifically designated paths.
- B. No Person may use a bicycle, scooter or similar device in a careless manner, which may result in injury to a person or damage to property.
- C. No Person may operate motorized bicycles, scooters or a similar conveyance on County Park property except in designated parking areas.

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#### **SECTION 11. SKATING AND SKIING**

- A. No Person shall use ice skates, roller skates, in-line skates or skateboards on County Park property.
- B. Cross-county skiing and snowshoeing is permitted within County Park property on designated roadways and trails.

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#### **SECTION 12. PERSONAL CONDUCT**

- A. It shall be unlawful for any person to be under the influence of intoxicants, narcotics, or other mind-affecting drugs, or to engage in any violent, abusive, loud, boisterous, vulgar, lewd, wanton, obscene or otherwise disorderly conduct tending to

- create a breach of the peace, or who is endangering directly or indirectly another person or acting in a manner which creates a public disturbance.
- B. No person shall interfere with any park or County employee or designee in the discharge of his or her duties, or fail or refuse to obey any directive issued by them.
  - C. Public nudity and indecent exposure, as defined by State law, is prohibited.

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#### **SECTION 13. PETS**

Dogs and other pets are permitted in the park only when kept on a leash not over six feet in length and kept under the immediate control of a responsible person. Dogs and other pets are not permitted in designated nature areas or buildings. The owner will assume full responsibility for all pets. Guide dogs for the impaired are permitted in all areas. Pet owners must clean up pet droppings and dispose of them off of County Park property. Guide or leader dogs, hearing dogs, and service dogs for disabled person are permitted in all areas, as provided under Michigan Compiled Laws 750.502c, as amended.

---

#### **SECTION 14. PROTECTION OF WILDLIFE**

No Person shall hunt, bait, trap, injure or kill any animal or bird on County Park property unless authorized by written permission by the County Board or designated Representative. No person shall molest or rob any nest of any bird or lair, den or burrow of any animal in or upon any County Park property.

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#### **SECTION 15. DESTRUCTION OF PLANT LIFE AND NATURAL SURROUNDINGS**

- No person shall:
- A. Cut, remove, or destroy any tree, sapling, seedling, bush or shrub, whether alive or dead, or chip, blaze, box, girdle, trim or otherwise deface or damage any tree or

- shrub, or pick, gather, uproot, remove or destroy any flower, plant or grass.
- B. Dig, Remove or cause to be removed any sod, earth humus, peat, boulders, rock, gravel or sand, mineral, artifact or other material.
- C. Cut and remove firewood.

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#### **SECTION 16. LITTERING AND POLLUTION**

- No person shall:
- A. Discard or deposit refuse of any kind or nature in or upon the County Park property, except in receptacles provided for such purposes.
  - B. Persons generating or creating trash, refuse, litter or other waste material on County Park property shall remove and properly dispose of said material off of the County Park property.

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#### **SECTION 17. FIRES**

- A. No person shall set or build any fire upon County Park property.
- B. No person shall drop, throw or otherwise scatter lighted matches, burning cigars, cigarettes, tobacco, paper or other inflammable material within or upon any County Park property.

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#### **SECTION 18. DESTRUCTION OF BUILDINGS, MARKERS, MONUMENTS AND OTHER PROPERTIES**

- No person upon County Park property shall:
- A. Willfully destroy, deface, alter, change or remove any monument, stone marker, bench mark, stake, post or blaze, marking or designating any boundary line, survey line, or reference point.
  - B. Injure, deface, disturb, mark upon, befoul nor in any manner destroy or cause to be destroyed, any building, equipment, structure, utility or other County Park property.
  - C. Deface, destroy, or remove any placard, notice or sign, whether permanent or

- temporary, posted or exhibited within or upon park property.
- D. Appropriate, excavate, remove, handle, injure or destroy any historical or pre-historical ruin or any object of antiquity, without the County Board's permission.

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#### **SECTION 19. WEAPONS**

- No person shall:
- A. Have in their possession or control any slingshot, BB gun, paint ball guns, bow and/or arrow, or explosives on County Park property.
  - B. Discharge any rifle, shotgun, pellet gun, air rifle, pistol, or other firearm in or into County Park property.

This section shall not apply to any deputy sheriff, police officer, peace officer, park officer, park ranger or other duly-appointed law enforcement officer while carrying out the duties and responsibilities of their position. Furthermore, this section shall not affect the rights of individuals who possess a valid Concealed Weapon License issued by the state of their residence.

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#### **SECTION 20. FIREWORKS**

No person shall fire, discharge or have in his or her possession any rocket, firecrackers, sparklers, torpedo, squib or other fireworks or any substance of an explosive or dangerous nature within or upon County Park property.

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#### **SECTION 21. METAL DETECTORS**

Metal detectors are permitted in designated park areas.

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#### **SECTION 22. MUSICAL INSTRUMENTS, RADIOS, AUDIO DEVICES, SOUND AMPLIFYING DEVICES, AND LOUDSPEAKERS**

It is prohibited to use a loudspeaker, public-address system or amplifier within or upon County Park property, unless these devices are allowed as part of a use permit

authorized under Section 7 (E) of the Fillmore County Park Rules.

**SECTION 23. COMMERCIAL ACTIVITY AND ADVERTISING**

No person or organization other than the County Board, its agents and licensees shall, while on County Park property advertise, offer for hire, vend or sell any service, food, beverage, merchandise or other personal property or advertise, carry on or conduct any other business or commercial activity. No signs, placards or notices may be erected on County Park property. Constitutionally protected speech is permitted subject to reasonable time, place and manner parameters.

**SECTION 24. HORSES**

Horses are prohibited within or upon County Park property.

**SECTION 25. UNLAWFUL OBSTRUCTION**

No person, firm or corporation shall by force, threats, intimidations, unlawful fencing, enclosing or by other means, prevent or obstruct any person from entering, leaving or making full use of any County Park property.

**SECTION 26. IMPERSONATION OF PARK EMPLOYEES**

No person shall impersonate any employee or contracted employee of the County Board for any reason whatsoever.

**SECTION 27. FINES AND IMPRISONMENT**

Any person violating the provisions of the State Law or the Motor Vehicle Code shall be subject to the fines and penalties provided by law. In addition, or in the alternative, persons violating the above rules may also be subject to eviction from County Park property. Nothing in these Rules shall be construed to conflict, contravene, enlarge or reduce any criminal liability or responsibility, including

finest imposed by a judge for any criminal offense under Michigan or Federal law.

**SECTION 28. ASSUMPTION OF RISK**

Any persons using a County Park takes full responsibility for their own and their guest actions, and agree to release and hold harmless the County of Livingston, their employees, volunteers and elected and appointed officials from any and all liability or bodily injury, including death, which may occur as a result of their use of County Park property.



# MEETING MINUTES

JANUARY 29, 2020  
ADMINISTRATION BUILDING - CONFERENCE ROOM 1  
304 E. Grand River Avenue, Howell, MI 48843

## PARKS & OPEN SPACE ADVISORY COMMITTEE

<input type="checkbox"/> GARY CHILDS	<input checked="" type="checkbox"/> MIKE ARENS	<input checked="" type="checkbox"/> CHRIS FOLTS	<input type="checkbox"/> DOUG HELZERMAN
<input checked="" type="checkbox"/> BRIAN JONCKHEERE	<input checked="" type="checkbox"/> JAN LOBUR	<input checked="" type="checkbox"/> GARY EDWARDS	<input checked="" type="checkbox"/> WES NAKAGIRI
<input checked="" type="checkbox"/> BILL CALL	<input type="checkbox"/> BILL RUBIN	<input type="checkbox"/> MICHAEL POWERS	<input checked="" type="checkbox"/> MARTHA HAGLUND

OTHERS: KELLIE PROKUDA KATHLEEN KLINE-HUDSON SCOTT BARB

1. **Call to Order:** Meeting called to order by Commissioner Nakagiri at 9:30 AM.

2. **Approval of Minutes:** MINUTES OF MEETING DATED NOVEMBER 6, 2019

**MOTION TO APPROVE THE MINUTES:**  
**MOVED BY CALL - SECONDED BY EDWARDS**  
**ALL IN FAVOR - MOTION PASSED**

3. **Approval of Agenda:** AGENDA OF MEETING DATED JANUARY 29, 2020:

**MOTION TO APPROVE THE AGENDA AS AMENDED:**  
**MOVED BY FOLTS - SECONDED BY LOBUR**  
**ALL IN FAVOR – MOTION PASSED**

4. **Call to the Public – None**

5. **Fillmore County Park Update**

- Construction Update – what remains to be done
  - Wood chip trails, trail map and markers
  - Ribbon cutting around May 15, 2020
- Trail and Sports Field Naming

**MOTION TO PRESENT A RESOLUTION TO THE BOARD OF COMMISSIONERS RECOMMENDING THE NAMING OF THE PLAY FIELD TO “JOHN E. LABELLE FIELDS” AND TRAIL TO “HINTON TRAIL”:**  
**MOVED BY ARENS - SECONDED BY LOBUR**  
**ALL IN FAVOR – MOTION PASSED**

- Operations and Maintenance Plan
  - Meeting with SELCRA, Chris Folts and Mike Arens

## 6. Lutz County Park

- Facilities Update
- Update on Dark Sky Designation
  - Application packet is 70% complete
  - Working on public access policy

## 7. Park Rules

- Fillmore Park Rules

**MOTION TO ADOPT PARK RULES SUBJECT TO REVISIONS DISCUSSED BY COMMITTEE  
AND ATTORNEY REVIEW:  
MOVED BY ARENS - SECONDED BY EDWARDS  
ALL IN FAVOR – MOTION PASSED**

- Lutz Park Rules

**MOTION TO ADOPT PARK RULES SUBJECT TO REVISIONS DISCUSSED BY COMMITTEE  
AND ATTORNEY REVIEW:  
MOVED BY EDWARDS - SECONDED BY ARENS  
ALL IN FAVOR – MOTION PASSED**

## 8. Other

- Planning Department update on Livingston County Trail Network Plan

## 7. Items for Discussion on Next Agenda

- Review Attorney changes to park rules
- Opening day

## 8. Adjournment

**MOTION TO ADJOURN AT 10:45 AM.  
MOVED BY LOBUR - SECONDED BY FOLTS  
ALL IN FAVOR - MOTION PASSED**

**RESOLUTION**

**NO:** [Title]

**LIVINGSTON COUNTY**

**DATE:** Click or tap to enter a date.

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**Resolution to Adopt Amended Lutz County Park Rules – Livingston County Parks and Open Space Advisory Committee/Planning**

**WHEREAS,** Park rules are a common and invaluable management tool which will provide:

- 1) park users with information regarding permitted and prohibited activities within park boundaries, and
- 2) an assumption of risk statement to reduce Livingston County liability for park use; and

**WHEREAS,** Lutz County Park rules were originally adopted by the Livingston County Board of Commissioners in July 2008 (Res. 2008-07-211), and they are periodically amended as park activities change and as language revisions are recommended by the County Attorney; and

**WHEREAS,** the Parks and Open Space Advisory Committee wishes to amend the Lutz County Park Rules to make substantive changes recommended by the County Attorney and minor changes to park hours in order to allow dark sky viewing activities by request to the County; and

**WHEREAS,** such rules will be prominently posted in an all-weather display case at the trailhead/parking lot location of Lutz County Park, and

**WHEREAS,** this Resolution has been recommended for adoption by the Livingston County Parks and Open Space Advisory Committee.

**THEREFORE BE IT RESOLVED** that the Livingston County Board of Commissioners hereby adopts the amended Lutz County Park Rules.

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**MOVED:**

**SECONDED:**

**CARRIED:**



**304 East Grand River Avenue, Howell, MI**  
**Phone (517) 546-7555 Fax (517) 552-2347**  
**Web Site: <https://livgov.com/plan/>**

## Memorandum

**To: Livingston County Board of Commissioners**  
**From: Kathleen Kline-Hudson, Planning Director**  
**Date: 2/12/20**  
**Re: Lutz County Park Rules**

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The Parks and Open Space Advisory Committee has worked with the County Attorney to create updated rules for the use of Lutz County Park.

The Lutz County Park Rules have been substantially updated by the County Attorney to reflect current law regarding weapons, personal conduct and many other subjects covered in the parks rules. Additionally, minor revisions have been made to Section 3. Hours, to note that upon request to the County, the park hours may be extended to include nighttime dark sky viewing activities. This additional language is to satisfy the requirements of the Urban Night Sky Park designation that the Committee is pursuing for Lutz County Park.

It is also important to note that although legislation authorizes Livingston County to operate a park with park rules, Livingston County does not have a civil or criminal mechanism for enforcing the park rules. The Parks and Open Space Advisory Committee does not feel that a county ordinance for enforcement of park rules is warranted at this time.

If you have any questions regarding this matter please contact me.



The Livingston County Board of Commissioners, in order to maintain and operate the designated public parks under its control in the best interests of the people of Livingston County, and in order to insure maximum recreational benefits from these facilities, has adopted the rules set forth herein under powers granted to it by Public Act 156 of 1917 of the State of Michigan, as amended. The purpose of the Fillmore County Park as envisioned by its benefactor, Owen J. Lutz, is to:

- Preserve the beauty and diversity of the natural environment within the park;
- Honor the agricultural tradition of our rural communities;
- Provide passive, low-impact outdoor recreational opportunities for the enjoyment of present and future generations.

Enjoy your visit!

## SECTION 1. DEFINITIONS

- "County" or "County Board" shall mean the Livingston County Board of Commissioners or its duly-authorized agents.
- "County Park property" shall mean all lands, waters, improvements and property designated as county park property administered by or under the jurisdiction of the County Board.
- "Person" or "persons" shall mean individuals, male or female, singular or plural, firms, corporations, or any group or gathering of individuals.
- "Camping" means the overnight lodging or sleeping of person or persons in a tent, trailer coach, vehicle camper, motor vehicle, or in any other conveyance erected, parked or placed on the premises within any park or recreation area administered by the County Board.
- "Rules" shall mean the rules adopted by the County Board applicable to the use and management of County Park property of the said County Board and all amendments thereto. These rules are enforced in compliance with State of Michigan Public Act 156 of 1917.

## SECTION 2. GENERAL PUBLIC

Entry into lands of the County and enjoyment of its parks and park facilities is a privilege, which is extended to members of the public and is contingent upon compliance with these Rules.

## SECTION 3. HOURS

Parks under the jurisdiction of the County shall be open from sunrise to sunset. No person shall enter or remain upon County Park property between sunset to sunrise except for those having written permission for extended hours. Upon request to the County, said hours may be extended to include regular nighttime dark sky viewing activities and occasional events. It shall be unlawful for

any person to enter any portion of County Park property which have been designated as closed to public use or entry.

## SECTION 4. EMERGENCY POWERS

Nothing in these rules shall:

- Prohibit or hinder duly-authorized agents of the County or any peace officers from performing their official duties.
- Prohibit the County from establishing emergency rules required to protect the health, welfare, and safety of park visitors and to protect County Park property, and to maintain order.

## SECTION 5. SWIMMING, BATHING, WADING AND BOATING

No Person shall swim, bathe, wade or boat on any of the watercourses, or ponds, located within County Park property.

## SECTION 6. CAMPING

Camping is prohibited unless a designated camping area has been established.

## SECTION 7. FEES AND CHARGES FOR RESERVED AREAS

No Person shall use any facility, land or area for which a fee and charge has been established by the County without payment of such fee or charge, unless authorized in writing by the County.

## SECTION 8. PERMITS FOR RESERVED AREAS

- Application for a permit for reserved park space shall be made upon forms furnished by the County.
- In the event more applications for reserved park space are received than space is available, such applications shall be considered in the chronological order received.
- Nothing contained herein shall operate to exempt the users of reserved space from full compliance with all rules of the County

relating to use and conduct on County Park property.

- No erection, construction or maintenance shall be made above or below ground, across or beneath this County Park property by any person, firm or corporation without first having obtained written permission from the County authorizing such installation or construction and a permit specifying in detail the work to be done and the conditions to be fulfilled to the terms of such approval.
- Notwithstanding any of the provisions hereof, the County or its agent may upon written application, grant specific use permits for special uses when in the opinion of the County Board special consideration is warranted.

## SECTION 9. MOTOR-DRIVEN VEHICLES

No Person on County Park property shall:

- Operate a motor-driven vehicle of any kind or nature except on designated roads and parking areas.
- Operate a motor-driven vehicle on any park road at a speed exceeding 25 miles per hour or at any speed greater than that posted, or in a careless or negligent manner likely to endanger any persons or property.
- Operate any motor-driven vehicle on any park road or parking area in a careless or negligent manner likely to endanger any person or property.
- Operate any motor-driven sled, toboggan, snowmobile or any other motor-driven vehicle on any property under the management, supervision or control of County.
- Operate a motor-driven trail bike, off-road, all-terrain vehicle, snowmobile or similar type of sport vehicle on any road or County Park property unless specifically designated for such purpose.



**SECTION 10. PARKING IN PROHIBITED AREAS**

- A. No operator of a vehicle shall stop, stand or park said vehicle in any place marked as a passenger loading or unloading or loading zone, other than for the expeditious loading or unloading of passengers or for the unloading and delivery or pick up and loading of materials.
- B. No operator of a vehicle shall stop, stand or park such vehicle upon any roadway or in any parking area in such a manner as to form an obstruction to traffic thereon.
- C. No operator of a vehicle to shall stop, stand or park a vehicle in any area not designated for such purposes.
- D. No operator of a vehicle shall stop, park or stand in a space designated for people with disabilities, or the striped aisle adjacent to that space, unless properly displaying a valid disability parking placard or license plate.

**SECTION 11. OPERATION OF BICYCLES**

- A. No Person shall use a bicycle, scooter or similar conveyance except upon roadways, parking area or specifically designated paths.
- B. No Person may use a bicycle, scooter or similar device in a careless manner, which may result in injury to a person or damage to property.
- C. No Person may operate motorized bicycles, scooters or a similar conveyance on County Park property except in designated parking areas.

**SECTION 12. SKATING AND SKIING**

- A No Person shall use ice skates, roller skates, in-line skates or skateboards on County Park property.
- B. Cross-county skiing and snowshoeing is permitted within County Park property on designated roadways and trails.

**SECTION 13. PERSONAL CONDUCT**

- A. It shall be unlawful for any person to be under the influence of intoxicants, narcotics, or other mind-affecting drugs, or to engage in any violent, abusive, loud, boisterous, vulgar, lewd, wanton, obscene or otherwise disorderly conduct tending to create a breach of the peace, or who is endangering directly or indirectly another person or acting in a manner which creates a public disturbance.
- B. No person shall interfere with any park or County employee or designee in the discharge of his or her duties, or fail or refuse to obey any directive issued by them.
- C. Public nudity and indecent exposure, as defined by State law, is prohibited.

**SECTION 14. PETS**

Dogs and other pets are permitted in the park only when kept on a leash not over six feet in length and kept under the immediate control of a responsible person. Dogs and other pets are not permitted in designated nature areas or buildings. The owner will assume full responsibility for all pets. Guide dogs for the impaired are permitted in all areas. Pet owners must clean up pet droppings and dispose of them off of County Park property. Guide or leader dogs, hearing dogs, and service dogs for disabled person are permitted in all areas, as provided under Michigan Compiled Laws 750.502c, as amended.

**SECTION 15. PROTECTION OF WILDLIFE**

No Person shall hunt, bait, trap, injure or kill any animal or bird on County Park property unless authorized by written permission by the County Board or designated Representative. No person shall molest or rob any nest of any bird or lair, den or burrow of any animal in or upon any County Park property.

**SECTION 16. FISHING**

Fishing is prohibited within or upon County Park property.

**SECTION 17. DESTRUCTION OF PLANT LIFE AND NATURAL SURROUNDINGS**

No person shall:

- A. Cut, remove, or destroy any tree, sapling, seedling, bush or shrub, whether alive or dead, or chip, blaze, box, girdle, trim or otherwise deface or damage any tree or shrub, or pick, gather, uproot, remove or destroy any flower, plant or grass.
- B. Dig, Remove or cause to be removed any sod, earth humus, peat, boulders, rock, gravel or sand, mineral, artifact or other material.
- C. Cut and remove firewood.

**SECTION 18. LITTERING AND POLLUTION**

No person shall:

- A Discard or deposit refuse of any kind or nature in or upon the County Park property, except in receptacles provided for such purposes.
- B. Persons generating or creating trash, refuse, litter or other waste material on County Park property shall remove and properly dispose of said material off of the County Park property.

**SECTION 19. FIRES**

- A. No person shall set or build any fire upon County Park property.
- B. No person shall drop, throw or otherwise scatter lighted matches, burning cigars, cigarettes, tobacco, paper or other inflammable material within or upon any County Park property.

**SECTION 20. DESTRUCTION OF BUILDINGS, MARKERS, MONUMENTS AND OTHER PROPERTIES**

No person upon County Park property shall:

- A Willfully destroy, deface, alter, change or remove any monument, stone marker,

bench mark, stake, post or blaze, marking or designating any boundary line, survey line, or reference point.

- B. Injure, deface, disturb, mark upon, befoul nor in any manner destroy or cause to be destroyed, any building, equipment, structure, utility or other County Park property.
- C. Deface, destroy, or remove any placard, notice or sign, whether permanent or temporary, posted or exhibited within or upon park property.
- D. Appropriate, excavate, remove, handle, injure or destroy any historical or pre-historical ruin or any object of antiquity, without the County Board's permission.

**SECTION 21. WEAPONS**

No person shall:

- A. Have in their possession or control any slingshot, BB gun, paint ball guns, bow and/or arrow, or explosives on County Park property.
- B. Discharge any rifle, shotgun, pellet gun, air rifle, pistol, or other firearm in or into County Park property.

This section shall not apply to any deputy sheriff, police officer, peace officer, park officer, park ranger or other duly-appointed law enforcement officer while carrying out the duties and responsibilities of their position. Furthermore, this section shall not affect the rights of individuals who possess a valid Concealed Weapon License issued by the state of their residence.

**SECTION 22. FIREWORKS**

No person shall fire, discharge or have in his or her possession any rocket, firecrackers, sparklers, torpedo, squib or other fireworks or any substance of an explosive or dangerous nature within or upon County Park property.

**SECTION 23. METAL DETECTORS**

Metal detectors are permitted in designated park areas.

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**SECTION 24. MUSICAL INSTRUMENTS, RADIOS, AUDIO DEVICES, SOUND AMPLIFYING DEVICES, AND LOUDSPEAKERS**

It is prohibited to use a loudspeaker, public-address system or amplifier within or upon County Park property, unless these devices are allowed as part of a use permit authorized under Section 7 (E) of the Fillmore County Park Rules.

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**SECTION 25. COMMERCIAL ACTIVITY AND ADVERTISING**

No person or organization other than the County Board, its agents and licensees shall, while on County Park property advertise, offer for hire, vend or sell any service, food, beverage, merchandise or other personal property or advertise, carry on or conduct any other business or commercial activity. No signs, placards or notices may be erected on County Park property. Constitutionally protected speech is permitted subject to reasonable time, place and manner parameters.

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**SECTION 26. HORSES**

Horses are prohibited within or upon County Park property.

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**SECTION 27. UNLAWFUL OBSTRUCTION**

No person, firm or corporation shall by force, threats, intimidations, unlawful fencing, enclosing or by other means, prevent or obstruct any person from entering, leaving or making full use of any County Park property.

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**SECTION 28. IMPERSONATION OF PARK EMPLOYEES**

No person shall impersonate any employee or contracted employee of the County Board for any reason whatsoever.

**SECTION 29. FINES AND IMPRISONMENT**

Any person violating the provisions of the State Law or the Motor Vehicle Code shall be subject to the fines and penalties provided by law. In addition, or in the alternative, persons violating the above rules may also be subject to eviction from County Park property. Nothing in these Rules shall be construed to conflict, contravene, enlarge or reduce any criminal liability or responsibility, including fines imposed by a judge for any criminal offense under Michigan or Federal law.

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**SECTION 30. ASSUMPTION OF RISK**

Any persons using a County Park takes full responsibility for their own and their guest actions, and agree to release and hold harmless the County of Livingston, their employees, volunteers and elected and appointed officials from any and all liability or bodily injury, including death, which may occur as a result of their use of County Park property.

# MEETING MINUTES

JANUARY 29, 2020  
ADMINISTRATION BUILDING - CONFERENCE ROOM 1  
304 E. Grand River Avenue, Howell, MI 48843

## PARKS & OPEN SPACE ADVISORY COMMITTEE

<input type="checkbox"/> GARY CHILDS	<input checked="" type="checkbox"/> MIKE ARENS	<input checked="" type="checkbox"/> CHRIS FOLTS	<input type="checkbox"/> DOUG HELZERMAN
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<input checked="" type="checkbox"/> BILL CALL	<input type="checkbox"/> BILL RUBIN	<input type="checkbox"/> MICHAEL POWERS	<input checked="" type="checkbox"/> MARTHA HAGLUND

OTHERS: KELLIE PROKUDA KATHLEEN KLINE-HUDSON SCOTT BARB

1. **Call to Order:** Meeting called to order by Commissioner Nakagiri at 9:30 AM.

2. **Approval of Minutes:** MINUTES OF MEETING DATED NOVEMBER 6, 2019

**MOTION TO APPROVE THE MINUTES:**  
**MOVED BY CALL - SECONDED BY EDWARDS**  
**ALL IN FAVOR - MOTION PASSED**

3. **Approval of Agenda:** AGENDA OF MEETING DATED JANUARY 29, 2020:

**MOTION TO APPROVE THE AGENDA AS AMENDED:**  
**MOVED BY FOLTS - SECONDED BY LOBUR**  
**ALL IN FAVOR – MOTION PASSED**

4. **Call to the Public – None**

### 5. Fillmore County Park Update

- Construction Update – what remains to be done
  - Wood chip trails, trail map and markers
  - Ribbon cutting around May 15, 2020
- Trail and Sports Field Naming

**MOTION TO PRESENT A RESOLUTION TO THE BOARD OF COMMISSIONERS RECOMMENDING THE NAMING OF THE PLAY FIELD TO “JOHN E. LABELLE FIELDS” AND TRAIL TO “HINTON TRAIL”:**  
**MOVED BY ARENS - SECONDED BY LOBUR**  
**ALL IN FAVOR – MOTION PASSED**

- Operations and Maintenance Plan
  - Meeting with SELCRA, Chris Folts and Mike Arens

## 6. Lutz County Park

- Facilities Update
- Update on Dark Sky Designation
  - Application packet is 70% complete
  - Working on public access policy

## 7. Park Rules

- Fillmore Park Rules

**MOTION TO ADOPT PARK RULES SUBJECT TO REVISIONS DISCUSSED BY COMMITTEE  
AND ATTORNEY REVIEW:  
MOVED BY ARENS - SECONDED BY EDWARDS  
ALL IN FAVOR – MOTION PASSED**

- Lutz Park Rules

**MOTION TO ADOPT PARK RULES SUBJECT TO REVISIONS DISCUSSED BY COMMITTEE  
AND ATTORNEY REVIEW:  
MOVED BY EDWARDS - SECONDED BY ARENS  
ALL IN FAVOR – MOTION PASSED**

## 8. Other

- Planning Department update on Livingston County Trail Network Plan

## 7. Items for Discussion on Next Agenda

- Review Attorney changes to park rules
- Opening day

## 8. Adjournment

**MOTION TO ADJOURN AT 10:45 AM.  
MOVED BY LOBUR - SECONDED BY FOLTS  
ALL IN FAVOR - MOTION PASSED**

RESOLUTION

NO: [Title]

LIVINGSTON COUNTY

DATE: Click or tap to enter a date.

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**Resolution Affirming the Livingston County Board of Commissioner’s Support of Constitutional Rights (also known as 2A Sanctuary) – Board of Commissioners**

**WHEREAS,** we have been requested to adopt a proposed “Second Amendment Sanctuary County” resolution; and

**WHEREAS,** our civil counsel has opined that the proposed resolution exceeds our authority to the extent it directs the activities of the Sheriff or Prosecutor; and

**WHEREAS,** when we assumed office, we all took an oath of office under which we swore to support the Constitution of the United States, and the Constitution of this State, and to faithfully discharge the duties of this office; and

**WHEREAS,** support of the Constitution of the United States, includes all of its amendments, including the Second Amendment thereto; and

**WHEREAS,** this Commission and all of its members wish to reaffirm their commitment and promise to support the same; and

**WHEREAS,** the Constitution of the State of Michigan of 1963, Article I, § 6 Bearing of Arms. Every person has a right to keep and bear arms for the defense of himself and the state.

**THEREFORE BE IT RESOLVED** it is hereby declared by the Livingston County Board of Commissioners that this Commission does support and will continue to honor our pledge to support the Constitution of the United States as well as the Constitution of this State, including all amendments thereto.

**BE IT FURTHER RESOLVED** that the Board urges the Michigan Legislature, the United States Congress, and other agencies of State and Federal government to vigilantly preserve and protect those rights by rejecting any provision, law, or regulation that may infringe, have the tendency to infringe, or place any additional burden on the rights of law-abiding citizens to keep and bear arms and that restrict constitutional rights.

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**MOVED:  
SECONDED:  
CARRIED:**