



Annual Report 2016

From the Director

Only two words seem fitting for Telecom's 2016...

busy & new.

- Busy building and implementing a new 911 system.
- Busy vetting and selecting a new VOIP phone system.
- Busy configuring and installing new Employee desk phones.
- Busy learning and customizing a new TriTech CAD suite.
- Busy space planning and moving new Telecom offices.
- Busy configuring new radio templates for our users.
- Busy retiring long-time employees and hiring new faces.
- Busy implementing new business practices in our teams.
- Busy training and finding new ways to promote our services.
- Busy testing the new Text-to-911 feature before go-live.
- Busy building backend infrastructure for new systems.
- Busy creating a new and improved Warren County Telecom!

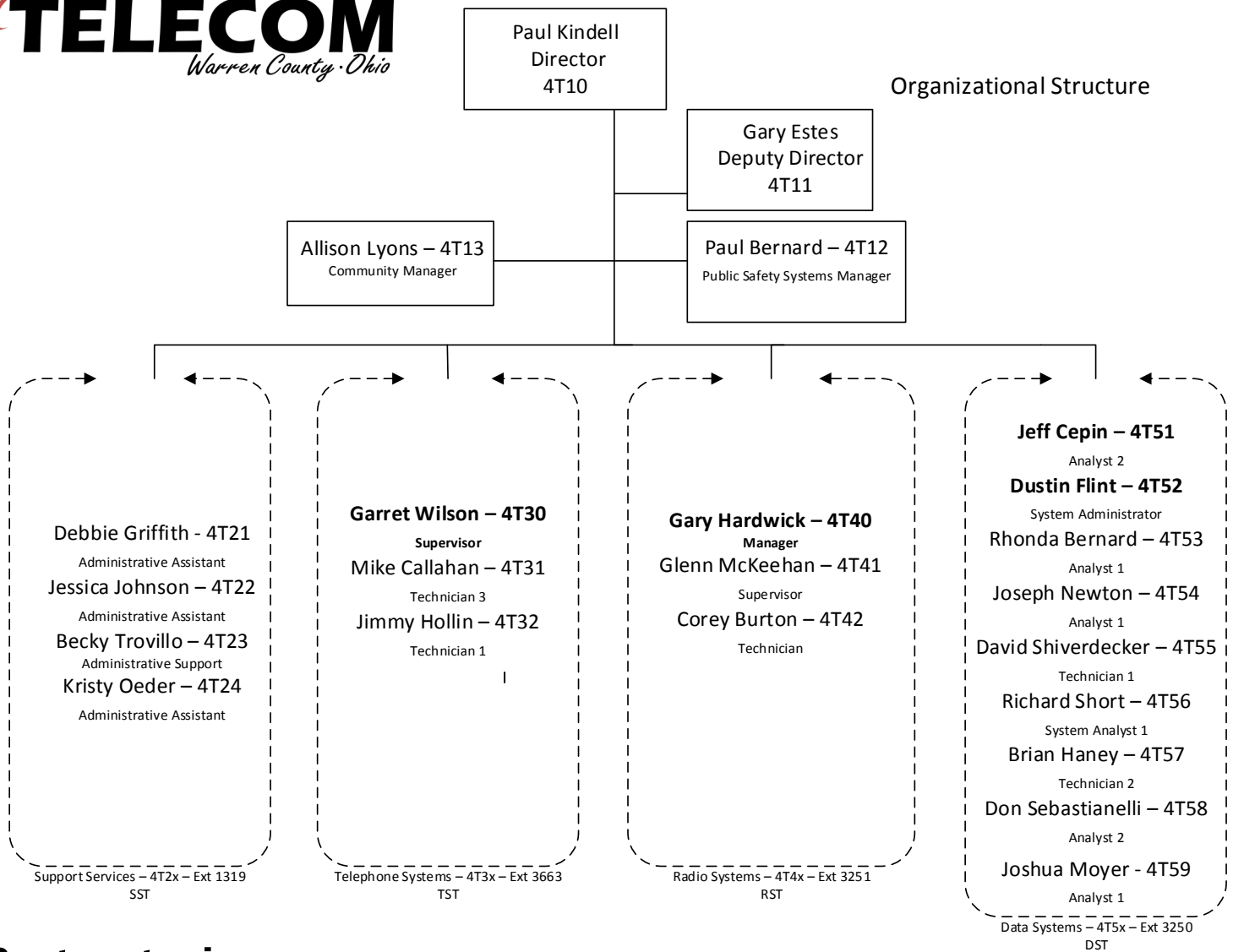
Paul Kindell
 2006-Present



We polled our customers to see what words come to mind when they think, "TELECOM." The bigger the word, the more times it was mentioned.

Revenue	2016
Equipment/Service Invoicing	
-Telephone Division	15,468.07
-Data Systems Division	33,945.87
-Radio Systems Division	31,394.94
Telephone Services	254,854.77
Cellular Receivables	81,592.98
Mobile Data Receivables	97,613.40
IC Solutions Inmate Services	<u>132,208.16</u>
	\$647,078.19
Expenditures	
Payroll	1,167,741.23
Other	3,798.55
Benefits/Insurance	403,373.95
Operating Costs	1,551,241.72
Capital Costs	<u>2,227,903.99</u>
	\$5,354,059.44

Organizational Structure



Restructuring

A priority project for our new Deputy Director was to restructure our department in a way that would maximize efficiency, minimize complexity, and properly represent job responsibilities.

DST: Estes’ departure from the Data Systems Team created opportunity for Jeff Cepin & Dustin Flint to grow their leadership skills, taking over staffing and infrastructure responsibilities. #ProjectTriTech further blurs the line between Data Systems & CAD Systems so it was a good time to migrate Sebastianelli’s Analyst 2 position over to this team. Knowing he is within a couple years of retirement, the Board of County Commissioners approved a new hire to begin learning both jobs of Systems Analyst & CAD operations.

CRT: The Trainer position has never been exclusive to one Telecom team, so it made sense to report directly to the Director and Deputy Director. Lyons’ job responsibilities have also grown in the last 6 years so a new title of Telecommunications Community Manager was most fitting. This left only Paul Bernard in CRT, who really straddles all teams of Telecom in addition to his CAD Systems expertise. This prompted his new title as Public Safety Systems Manager, not tied to one team.

TST: The retirement of Morton in Fall 2016 was a great opportunity to restructure the administrative positions in our team. Three of the four individuals were classified under the Telephone Team with one employee tied directly to the Director.

SST: In an effort to create backup relationships, enhance job responsibilities, and create a team identity, a Support Services Team was created to encompass the four administrative staff. This team’s responsibilities have exploded with guests services, Keep-the-Lights-on procedures, policy & procedure drafting, and other core administrative duties.

#ProjectTriTech

Inform CAD—Call Taking, Law & Fire Dispatching, Mapping/GIS, Reporting, CAD Browser

Inform Mobile & FBR Law Enforcement—Fire & Law Enforcement Mobile, Field Based Reporting

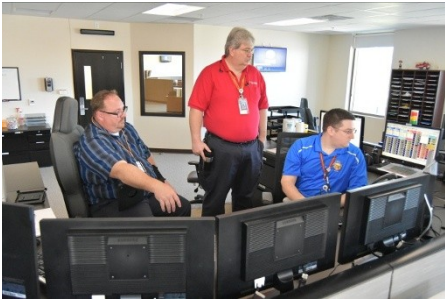
TriTech.com Inform IQ & Analytics— Query, Searching, Reporting, Dash Boards

Inform RMS -- Records Management Overview, Master Indexes, State Reporting, Citations, Case Management, Property/Evidence, Civil, Warrants, Inform IQ & Analytics

Inform JMS (Jail Management) - Booking, Release, Kiosk, Weekender, visitation, Prisoner Release, Inform IQ, Analytics

- | | |
|------|--|
| MAR | <ul style="list-style-type: none">▪ Product Suite Demo for All Participating Agencies▪ CAD Walkthrough allowed TriTech’s Business Analyst to observe Warren County’s current CAD workflow and operations within the Comm Center.▪ GIS Review allowed Telecom to ask questions in preparation of migrating/importing all map data (addresses, street segments, public safety layers, agency beats/districts) into TriTech software.▪ Mobile Work Flow - Police & Fire agencies walked TriTech through our current incident work flow, helping TriTech design our new mobile environment to maintain preferred functionality.▪ Walk through a SMS build form, the foundation of laying out the units, incident types, response types, dispositions, vehicle ID’s, etc. |
| APR | <ul style="list-style-type: none">▪ The Core PIT gathered to dive deeper into the System Module Spreadsheet (SMS)—a multi-tabbed spreadsheet that Warren County must complete and submit back to TriTech before an initial build of our system can happen... Incident Types, Priorities, Agency Rosters, Master List of Recommendable Vehicles/Apparatus, Statuses that units can be in, etc. CAD Manager, Paul Bernard is the keeper of this document with all agencies invited to contribute to its completion.▪ Inform RMS/FBR System Orientation with WCSO, Carlisle PD, and Mason PD. |
| MAY | <ul style="list-style-type: none">▪ Week #2 of InformRMS System Orientation with Springboro, Maineville, Hamilton Twp, Morrow, and Clearcreek Twp Police Depts. |
| JUNE | <ul style="list-style-type: none">▪ Agencies with jails collected and submitted Jail Data for a one-time conversion into the TriTech Inform Jail product. It included Booking / Confinement Data (dates, Booking Numbers, mug shots), Master Person Data, Arrest Information, Charge Information |
| JULY | <ul style="list-style-type: none">▪ Some large trainings and work sessions happened in August; offering an in-depth look at how the TriTech suite will function in Warren County. It also bolstered great discussion between attending agencies, and shed light on some automated features that will make how Warren County dispatches and interacts with incidents MUCH smoother.▪ CAD was installed with help from Telecom System Administrator Dustin Flint. TCRs 1-4 were signed by Commissioners Resolution 16-1085 (Task Completion Reports).▪ TriTech onsite validating the PSN Data Center.▪ CAD DOLF where TriTech offered a Demonstration of Licensed Functionality for the CAD product—field by field review, window-by-window walk through, mapping, etc. |
| AUG | <ul style="list-style-type: none">▪ Telecom’s Sebastianelli and Data Systems Tech walked through GISLink program with TriTech’s GIS Analyst.▪ CAD Workshop #1: Response Plan Building attended by several fire and law enforcement representatives▪ Law Enforcement’s Mobile System Orientation / Configuration. They got a glimpse at what field units will see from their MDC including button layout options, mapping functionality, interoperability, and collectively decided on some feature options. |
| SEPT | <ul style="list-style-type: none">▪ Fire’s Mobile System Orientation / Configuration, focusing on the above mentioned features of a unit’s view of CAD.▪ 3-day RMS DOLFs, demonstrating the licensed functionality of the system. Follow-up status calls and internal meetings were conducted to really dissect and express feelings on the progress of this project thus far. We had TriTech Project Management and Business Analysts on site many days, who traveled from Colorado, Arizona, and North Carolina to assist in standing up this system and the data components that will make it work for Warren County. |
| OCT | <ul style="list-style-type: none">▪ 3-day CAD FAT (Functional Acceptance Test) where attendees painstakingly walked step-by-step through a battery of tests, making sure command lines functioned, screens could be opened, fields appeared, information flowed, etc. |

#ProjectTriTech



CAD Walkthrough 3-29-16



CAD Demo 3-22-16



CAD DOLF 8-9-16



RMS Workshop 12-16



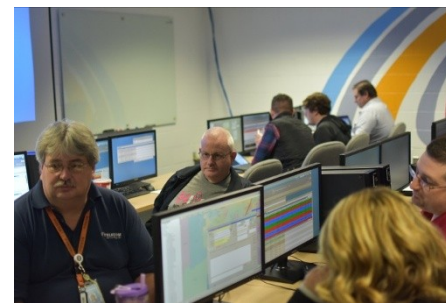
CAD+Mobile SMS 3-31-16



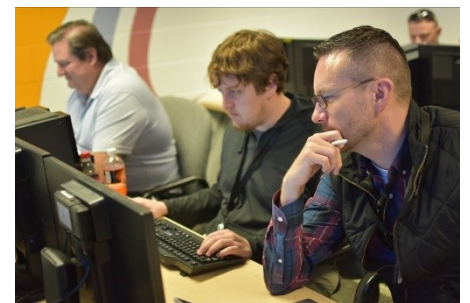
Mobile Workflow 3-30-16



GIS Link Training 8-18-16



CAD FAT 10-25-16



CAD FAT 10-25-16



RMS DOLF 10-5-16



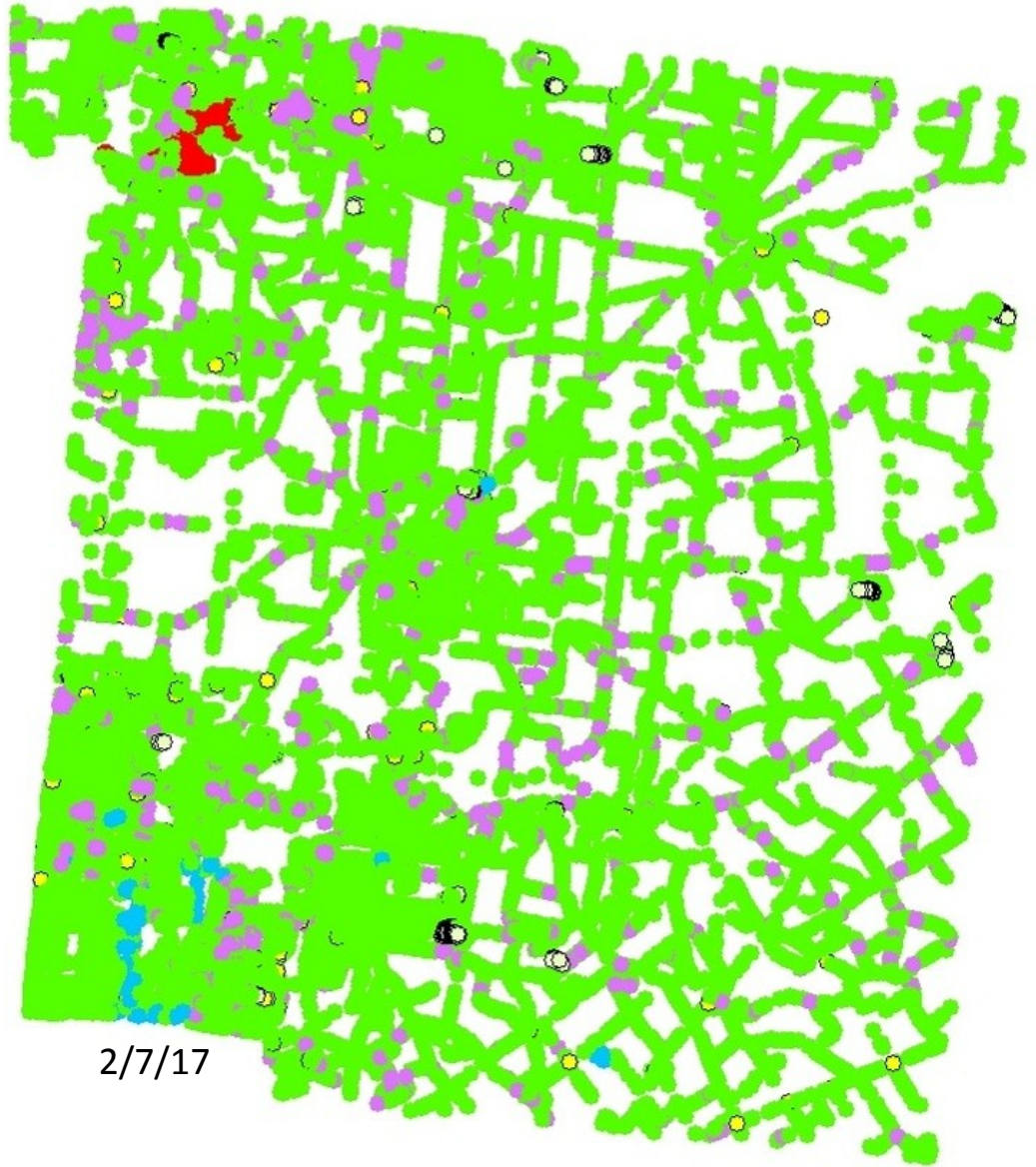
CAD DOLF 8-9-16

#ProjectTriTech Mapping BY TELECOM

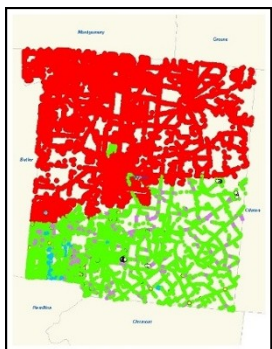
Telecom's Mapping / Data Analyst meticulously verified and adjusted the majority of **84,925 address points** in the final weeks of 2016 and first month of 2017. 80,572 of the points were supplied by Warren County GIS with Telecom manually creating the balance. For each point, he had to code it so that it appears as either:

- green (finished),
- yellow (a house whose address doesn't follow addressing guidelines),
- purple (common driveways),
- blue (businesses that need a phantom street created through a parking lot, so that CAD properly routes the drive).
- Red (incomplete)

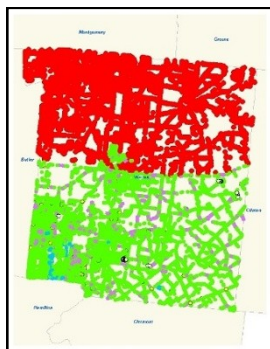
This is crucial for accurate routing and address locations, ensuring units follow the fastest route to an emergency. On our current CAD, there are no address points, just block ranges. For this new CAD, Sebastianelli is individually assigning a point at the apron of a home or business/building's driveway/entrance for pin-point accuracy.



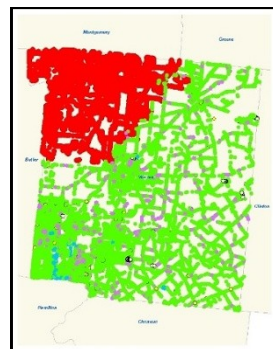
12/28/16



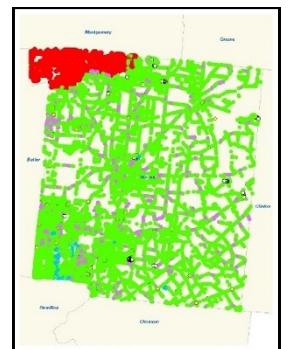
1/18/17



1/24/17



1/26/17



2/1/17

Team Lead: Jeff Cepin & Dustin Flint | 8 employees

Purpose (Warren County Public Safety Network)

Communications Center Technology Environment

- Computer Aided Dispatch (CAD) - Server, interfaces, workstations, required devices and applications, radio system workstations, required devices and applications, 9-1-1 Workstations, required devices and applications
- Genwatch – used for emergency button notification in Franklin and Lebanon Dispatch Centers.

Wants & Warrants

- Open Query Server and Clients allow Dispatchers to access LEADS, NCIC, BMV and other systems as required.
- LEADS Main Terminal – Support for this function for the Communications Center.
- Message Switch – Used by all mobile users in the county. This message switch interfaces CAD, Records, State, Federal databases.

Records Management Systems (RMS)

- Law and Fire/EMS Field Based Reporting
- Law Records Management System (LRMS) - Used by all Agencies except Franklin, Lebanon and Mason. Integrated to CAD and Law Field Based Reporting (LFBR)
- FRMS – Fire/EMS Records Management System - Used by all Agencies, Integrated to CAD and Electronic Patient Care Records (ePCR).

Mobile Environment

- In a secure and managed environment, Agencies have access to all the resources of the Warren County Public Safety Network (WCPSN) via mobile devices - Law Field Based Reporting (LFBR), Electronic Patient Care Records (ePCR), Agencies Mapping, Accident and Scene Diagram and Drawing, Mobile Printing, Drivers License and Document Scanning, In Car Camera Systems, Integration with Regional Licenses Plate Reader systems (LPR), Mobile Messaging – Secure email and chat all Agencies (LAW, FIRE, EMS and Dispatch) to communicate.

Data Center (provides the infrastructure to support the Warren County Public Safety Network.)

- Physical and Virtual Server environments - Reduces cost in physical hardware, operating systems, database platforms and environmental (electric, cooling) – more green.
- Access Infrastructure - Provides WCPSN applications to agencies without expensive site-to-site vpn. Allows users to use almost any client device for access from anywhere (lower cost and risk.)
- Networking - Provides Local Area Networks (LAN), Wide Area Networks (WAN), Cellular and secure connections to mobile environment.
- Standard Operation Environment (SOE) - allows for standardized support, deployment, upgrades and stability lowering downtime and support costs.
- Security - Implementation, upgrade and maintenance of Infection Management Systems, Intrusion Detection Systems, Patch Management Systems, and required logging and analysis systems.
- User Account Management - Creation, deletion, retention, access configuration, password/passphrase/token management for each WCPSN user.
- Messaging and Notification Environment - Allows for emergency and routing notification to users, system-to-system notification, system monitoring.

Driving considerations of DST projects are

(Federal) Criminal Justice Information System (CJIS)

(Federal) Health Insurance Portability and Accountability Act (HIPPA)

(State) Law Enforcement Automated Data Systems (LEADS)

(Local) Commission on Accreditation for Law Enforcement Agencies (CALEA)

5-Year Goals

- New CAD & Records Mgt Support
- New Mobile Data Computers (MDCs)
- Upgrade/maintain systems

Data Systems Team

The Data Team supports mobile data computers (MDCs) through software, security, and anti-virus updates. They also handle break/fix for all hardware and software related issues. We currently have 506 token users across all police, fire, and medical agencies. Tokens are used for MDC access as well as entry to the Citrix portal which provides applications and virtual desktops to users. We have portal users across all the law and fire agencies as well as Telecom, Emergency Services, Warren County Water Dept, and Warren County Human Services. The Portal was also used to facilitate the ShoreTel apps to non-county network users.

Data is now providing WCWS antivirus on the SCADA network, with security patching coming in the near future.

Agency	MDC QTY
11 Carlisle FD	1
AP Carlisle PD	6
21 Clearcreek Twp FD	33
LP Clearcreek Twp PD	14
56 Deerfield Twp FD	16
19 Franklin Twp FD	5
76 Hamilton Twp FD	10
EP Hamilton Twp PD	12
81 Harlan Twp FD	4
HP Harveysburg PD	1
15 JEMS	9
NP Lebanon PD	13
VP Maineville PD	2
51 Mason FD	17
CP Mason PD	20
28 Massie Twp FD	2
BP Morrow PD	3
71 Salem-Morrow Twp FD	5
ZP Springboro PD	18
31 Turtlecreek Twp FD	5
46 Union Twp FD	7
91 Wayne Twp FD	7
WP Waynesville PD	4
SO WCSO	50
SODF WCSO - Deerfield	23
SOSL WCSO - South Lebanon	6

Data was involved in several 2016 projects:

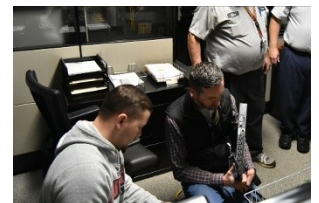
- Assisting with the 911 system implementation in dispatch *(see page 7)*
- Setting up the ProQA Priority Dispatch for WC Comm Center
- Upgrade of complete Zoll software suite (ePCR)
- Motorola CAD software upgrade
- Telecom Office Reorganization project
- Assisting with new WC VOIP phone system
- Implementing new CAD system #ProjectTriTech
- Providing phone service to Deerfield Twp Title Office
- Representing Telecom at the Warren County Amazing Race



Continual technical training



Updating fire service on mobile device options



Election Day BOE Blackout



Amazing Race 2016



Installing ProQA on WCCC consoles

9-1-1 System Upgrades

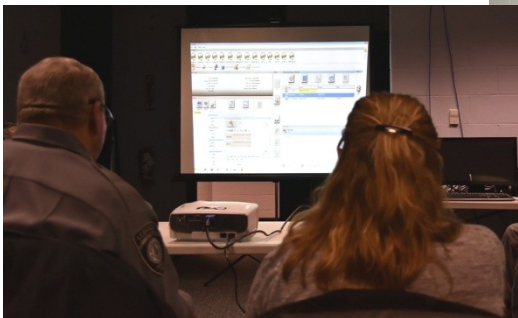
On July 6, Telecom cutover the Warren County Communications Center, Lebanon Communications, and Franklin Communications to their new Solacom 9-1-1 system, with the assistance of vendor, INdigital.

In the final months of the year, we began testing Text-to-911 capabilities with the area's cellular networks (AT&T, Verizon, Sprint, T-Mobile, etc) and equipped Emergency Services' Communications Center with TextTY. This online browser application allows dispatch to initiate a text message with a citizen or attempt contact after a 9-1-1 HangUp.

Telecom learned a lot in 2016 as we watched the evolution of telephone from a yesterday-technology to a forward-looking integrated data system, further blurring the lines between telephone and data systems in our world. If you look at the pictures of the install, it's not just our Telephone team in on the action. Our Data Systems Team was equally involved. The skills and knowledge to facilitate the County's maturing phone system is proof that technology is merging industries that once existed as silos, and are now integrated concepts. This has allowed Telecom staff to cross-train and offer backup to coworkers from other Telecom Teams. The buzz words "OPERATIONS" and "INFRASTRUCTURE" have been prevalent this year for Telecom as we focus more on FUNCTIONAL responsibilities across all teams, instead of the traditional vertical responsibilities you see on an organizational chart.

ProQA TECHNICAL SUPPORT in WC Communications Center

On March 8th, Emergency Medical Dispatching & Emergency Fire Dispatching went LIVE in the Warren County Communications Center, one of Telecom's many customers. Emergency Police Dispatching followed on April 6th. Our CAD Systems & Data Systems Teams were involved in the configuration and implementation of this latest ProQA Paramount software, which offers a consistent call-taking & aided experience for all citizens who call into the Comm Center.



Warren County Employee Desk Phones

On June 23rd, the Commissioners signed the contract and Purchase Order, approving the purchase and installation of a new ShoreTel VOIP phone system to be put on County employees' desks. This came after a lengthy RFP process with vendor bids ranging from \$300,000 to \$1.1 million. The finalists included ShoreTel, Cisco, Cincinnati Bell (CBTS), and Mitel. Telecom wanted to include the opinions of our end user base so we pulled together a review committee including the Warren County Sheriff's Office, Juvenile Probate Court, Health Department, Prosecutor's Office, and Human Services. Earlier in the year, the attendees completed a weighted ranking process for each vendor considering phone robustness (15%), vendor qualifications (15%), maintenance support & serviceability (15%), ability to expand and interoperate (15%), and price (40%).

- Button Programmability
- Button Size
- Cell Phone App to Answer Extension from Mobile
- Display Appearance
- Extension Status Display
- Headset Connectivity
- Overall Design / Aesthetics
- Overall Feeling in Hand
- Overall Feeling on Shoulder
- Overall Satisfaction with Product
- Overall Satisfaction with Vendor
- Touch Screen Features
- Volume Adjustability

Very Dissatisfied	Dissatisfied	Neutral	Satisfied	Very Satisfied	not present / not observed
1	2	3	4	5	N/A
1	2	3	4	5	N/A
1	2	3	4	5	N/A
1	2	3	4	5	N/A
1	2	3	4	5	N/A
1	2	3	4	5	N/A
1	2	3	4	5	N/A
1	2	3	4	5	N/A
1	2	3	4	5	N/A
1	2	3	4	5	N/A
1	2	3	4	5	N/A
1	2	3	4	5	N/A
1	2	3	4	5	N/A
1	2	3	4	5	N/A
1	2	3	4	5	N/A



In July, we received our first shipment of 490 phones, and laid out a deployment roadmap with the first phase including 520 Justice Drive, 416 East Street, and 406 Justice Drive. Also considered was a Disaster Recovery capability to keep the phones working in the event something happens to our building or systems.



THEN: the Harris 20-20 Integrated Network Switch... a giant box full of tiny wires, racks, and connectors that powered Warren County's legacy phone system.

NOW: the ShoreTel core maintained at Telecom, much smaller, and all GREEN LIGHTS!



More than 280 employees were trained in the final weeks of 2016 and the first month of 2017.



Computer-Aided Dispatch / Reporting / Mapping

Purpose	5-Year Goals
<ul style="list-style-type: none"> ▪ Computer-Aided Dispatch - Troubleshoot, configure, and monitor the software that Emergency Services Dispatchers use to recommend law and fire responses. Work with public safety agencies to set up their response tables and apparatus. ▪ Records Management - retrieves and packages records requests (9-1-1 / CAD) for Emergency Services. Maintains the Fire Records program. Retrieves 9-1-1 phone recordings from AudioLog software and ensures the servers stay up and running. ▪ Reporting - queries and runs monthly reports for phone system, CAD, 9-1-1, and radio available for related agencies and the public. End-of-year totals for 9-1-1 calls, CAD statistics, fire, and law runs by agency or area. Can also pull LRMS-DSS and CAD-DSS (Decision Support Software) reports if requested by a public-safety agency. ▪ Mapping - maintain the master map which Computer-Aided Dispatch software pulls from for Dispatch. Same data is used for map requests and the BINGO map used by public and non-public safety agencies. 	<ul style="list-style-type: none"> ✓ Replace current Computer-Aided Dispatch system (Premier CAD) with new CAD program. Submit the Purchase Order in 2015, implement in 2018 which is end of life for current system. ▪ Update Records Management System. ✓ Updating mapping software to support the new CAD and 9-1-1. ✓ Establish a training room to enhance our subscriber teachings.

Customer Service Processed **40** WCSO Jail Inmate Phone Call recording requests for **6031** files (**2.23GB**) and **14** subpoenas. **368** miscellaneous Emergency Services Requests. **102** Help Tickets resolved. **1098** receiver devices and **426** receiver groups maintained and configured within Hiplink's **2** servers. Hiplink allows incidents from CAD to be automatically sent to subscriber's mobile phones or emails to stay in-the-know even when not on shift or on premise. Assists users with CAD-DSS and LRMS-DSS questions, problems, and custom reports.

Mapping **4** Map Uploads to CAD System. **84** MSAG updates (Master Street Address Guide) to Century Link Feature Changes/Additions: **692,448** including **366** Street Feature changes/additions and **242** Common Place changes/additions. **478** page "Bingo" map updated annually and available to everyone. Various requests for printed and pdf bingo/street maps to users. Started process of configuring TriTech CAD software—primarily mapping creation and maintenance.

Reporting / Program Maintenance **29** 9-1-1 Call Problem Reports. Creates monthly and yearly reports for CAD, 9-1-1, Radio System, and Dispatch telephone. Axis Cameras Maintenance and configuration of **14** cameras. Maintained, installed, and configured **7** AudioLog servers (captures traffic on dispatch radios and 9-1-1 calls).

Maps + Large-Scale Prints

24/7 Accountability with emphasis on address/feature accuracy. Telecom's map data is a collective result of several sources. Telecom receives parcel, oddly shaped subdivisions, building footprints, and updated city boundaries. We then tighten it up for the purpose of public safety response needs.

Dispatcher-facing maps: Telecom maintains the source map used by Computer-Aided Dispatch which directs the program to the appropriate responding agencies, aids in address verification, and is customized by agency and beat/response region.

Agency-facing maps: The Bingo Map is accessible from MDCs and for download from the FTP site. Dispatch mentions the "Bingo Cell" for each call to help a responding

unit zero into the geography of the incident.

Printable maps: Telecom has an in-house plotter/printer capable of printing up to 42" wide. We provide wall maps, radius maps, pinpoint maps, incident command boards, and anything else a department can find useful.



Office Space Rejuvenation



Since the departure of Emergency Services, Telecom has slowly transitioned the basement space to better fit our 23-person department and the several systems, networks, operations centers, equipment we house.



Old hallways and storage closets once converted to offices are now being turned back into hallways and closets.

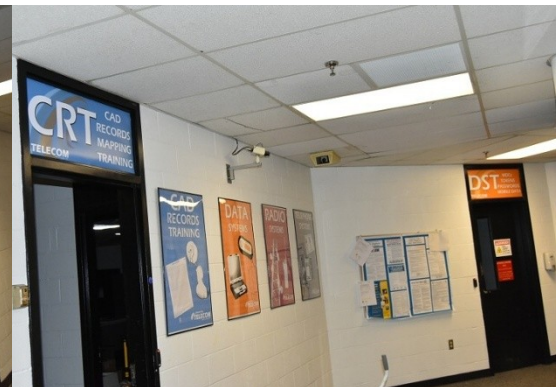
The Data Systems Team received a more conducive space to work on mobile data computers, manage infrastructure, and host the public safety agency visitors.

The phone techs have proper workbenches and space to program phones.



The new Support Services team is centrally located to receive guests and work together.

2017 should see the completion of our office space rejuvenation.



Training & Community Management

4140 minutes spent training fire, police, county departments, and corrections officers. **30** hours of in-station fire department radio/ePCR/Telecom Suite training. **11** newly hired WCSO Corrections Officers trained on radio. **3** Adult Probation employees trained on radio. **2** newly trained WCSO Deputies. **12** monthly TelecomMatters newsletters. **12** Technical Bulletins. **45** web pages maintained. **3** Telecom luncheons and dinners. **49** website posts. **17** professionally photographed headshots and team shots at no cost.

Social Media Engagement



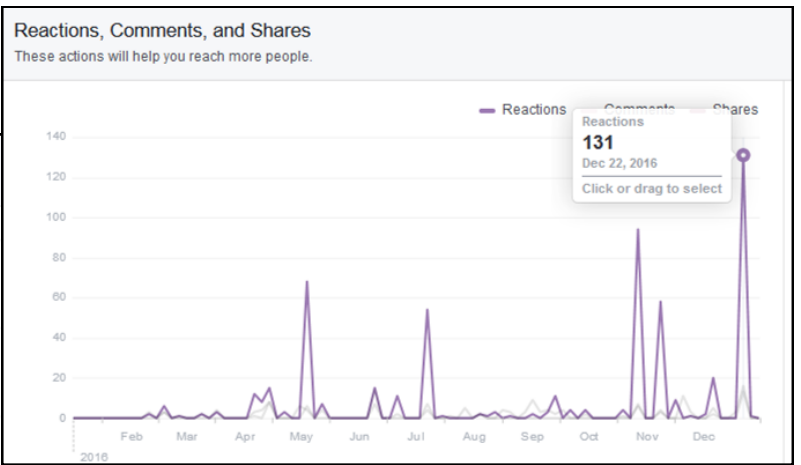
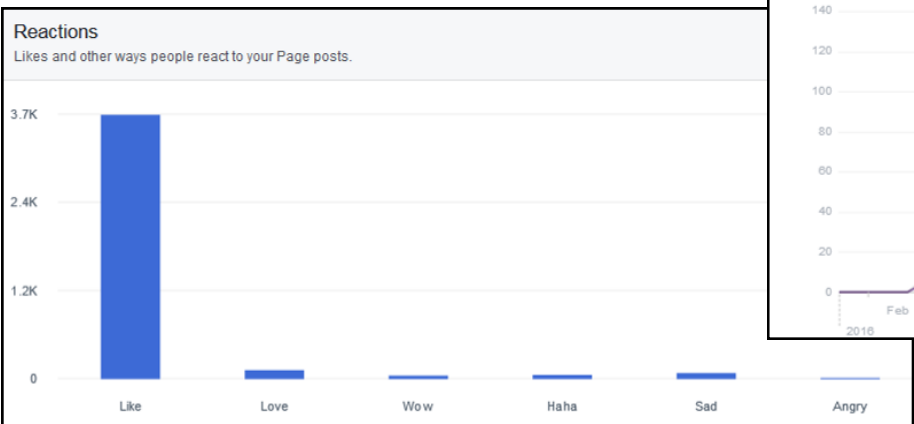
758 likes // Top Post: December 23rd—1560 people reached, 331 clicks, 112 reactions // 135 Posts



102 followers // 101 Posts //



34 New Subscribers totaling 174 // 15,042 video views of 39,147 total minutes // 43 video likes // 42 shares // Viewership in US, Canada, Indonesia, Australia, and India. 90/10 Male/Female Viewership // Most popular: XTS2500 Anatomy



Post Details

Warren County Telecommunications Department - Warren County Ohio joined 15 new photos to the album: Tonight we celebrated the 2016 accomplishments of our Teams — with Paul Kindel and 3 others. Posted by Gary Gates, IT · December 22, 2016 at 10:13pm

Year End Celebration 2016

1,458 People Reached

146 Reactions, Comments & Shares

- 123 Like
- 13 On Post
- 120 On Shares
- 7 Love
- 0 On Post
- 7 On Shares
- 5 Comments
- 0 On Post
- 5 On Shares
- 1 Shares
- 1 On Post
- 0 On Shares

750 Post Clicks

827 Photo Views

0 Link Clicks

122 Other Clicks

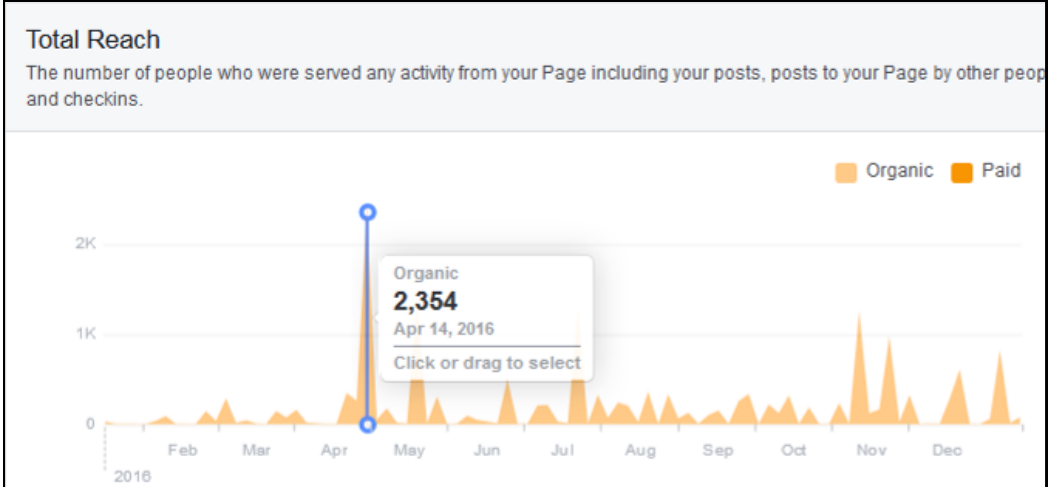
NEGATIVE FEEDBACK

- 1 Hide Post
- 0 Report as Spam
- 0 Hide All Posts
- 0 Unlike Page

1,458 people reached

13 Comments

1 Share



Training & Community Management

Repurposing the former Emergency Services EOC as Telecom's Training Room has been a huge blessing and asset to our department. It hosted at least **134 events/classes/work sessions** according to the room's calendar with **538 hours of use!** Some of those events include #ProjectTriTech work sessions, ShoreTel Phone Training for County employees, Ham Radio Classes, ePCR & FRMS work sessions for the fire service, radio training for Probation officers and law enforcement, and our annual Christmas luncheon. In addition to trainings, we're excited to use this space to host Telecom's Open House in April 2017, just one of the ways we're building CommUNITY within our industry and the diverse client base that we serve.



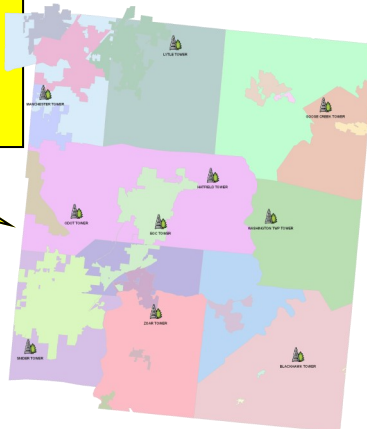
Radio Systems Team

Team Lead: Gary Hardwick 3 employees

Purpose	5-Year Goals
<ul style="list-style-type: none"> ▪ Radio Shop - We provide dependable communications for our Public Safety and non-Public Safety radio users. By maintaining a stock of repair parts and batteries, we provide timely service to minimize downtime for our customers. Our cache of rapid deployment HotBox radios provide 'instant' support to mitigate intense, short term requirements during disasters or special events. ▪ Systems Management, Infrastructure - We provide 24/7/365 'first call' Public Safety Systems response for Dispatch and our tower sites. This insures maximum reliability & minimum downtime for our Voice communications & Data backbone/backhaul (communications path availability exceeds 99.999%) 	<ul style="list-style-type: none"> ▪ Continue to upgrade Microwave Data network to provide more links and better bandwidth for Water, Wastewater, WCPSN, County Data, Radio & Telephone users that depend on fast, reliable, Ethernet, Internet, Scada, RoIP, VoIP & TDM service. ▪ Enhance our radio systems and programming to seamlessly mesh our Subscribers operations with our Regions changing interoperable communications environment. ▪ Continue to provide Systems, support and programming to keep our subscribers radios current with the rapid convergence of communications technology.

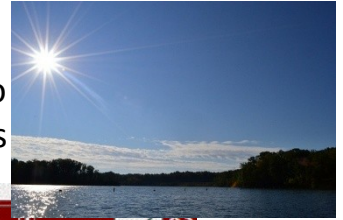
1 Radio System Network Operations Center hardened with layered redundancy and Emergency power. **10** Tower Sites with equipment, shelters & emergency power. **15** public safety grade microwave links for the Data Backbone and System Control (+1 from 2015). **47** Microwave links for Public Works Information Backhaul (+3 from 2015). **1271** handheld Portable radios (+91 from 2015). **747** Mobile radios (-8 from 2015). **230** Fixed Base stations. **178** Control base stations including School Emergency radios.

In **2016**, the users of our **70** subscribing agencies pushed-to-talk **5,920,998** times with an average call time of **4.8** seconds. The accumulated talk time was **472,806** minutes (**328** days)



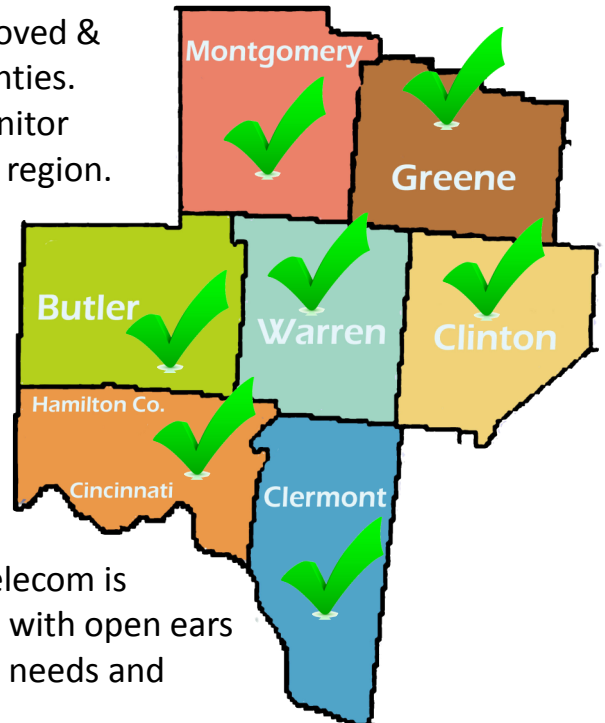
Marine Radio for Caesar Creek Monitoring

In September, Telecom's Radio Team completed the install of a marine radio at Caesar Creek. This radio allows the Warren County Communications Center to monitor one of two marine channels from their Motorola radio consoles for calls from watercraft in distress. We hope that this resource provides a valuable service to the safety of boaters in Warren County. Having this in the Warren County Communications Center will bridge that gap when no officers are on the water; yet boaters still are.



SW Ohio Reached 100% MARCS IP

All shown counties are part of one large radio system... improved & expanded interoperability and communication between counties. The Communications Centers can use a common MATAAC monitor screen to see which MATAACs are in use / available across the region. Updated talkgroups: Telecom's radio team updates WC agencies' radios as their bordering counties join MARCS. More MARCS partner tower sites in neighboring counties that we can use to roam outside Warren County. The State and the region have spent hundreds of millions of dollars to provide this Cadillac of radio systems. There isn't another dollar that could be spent to make it any better. If Public Safety can't communicate with one another now, it is because of either poor planning, poor training, or politics. Telecom is committed to training Warren County and neighboring users with open ears to the concerns of our agencies and foresight into the future needs and opportunities that this system affords us as a region.



Template Writing / Radio Programming

In 2016, the Tech shop not only provided "Walk in" parts, routine service, and repair for subscribers, but Glenn & Corey also wrote the software templates and reprogrammed nearly 1500 radios to keep our Users as current as any other Radio System in the region as interoperability needs changed with each new County joining the State of Ohio's MARCS radio system.

Telephone Systems Team

Team Lead: Garrett Wilson | 3 employees

Purpose	5-Year Goals
<ul style="list-style-type: none"> ▪ Work Orders - installation, operation, configuration, maintenance and repair of all county-owned telephone / communications equipment and circuitry. ▪ Telephone Service - Voice Mail, Fax Lines, Automated Attendant, Automatic Call Distribution, and interactive informational Recordings. These are billed to the agencies. ▪ Telecommunications Equipment/Services Invoicing and recording of accounts receivables for all related equipment and services billed by Telecom's divisions. ▪ Cellular/Pager Service Receivables - non-commissioner funded, billed directly to the agencies. ▪ IC Solutions Inmate Services - Warren County receives commission revenue based on the amount of calls completed by inmates at the County Jail. We have significantly increased our call volume and revenue without impacting the family/friends of our inmates by switching to IC Solutions in 2004. 	<ul style="list-style-type: none"> ✓ Replace 9-1-1 Phone System in 2015 (end of life is Q1 - 2015). ✓ Replace current County phone system with VoIP, including new switchboard. ✓ Convert Warren County's government buildings to new VoIP system as funds allow. ✓ Be IP (internet protocol) and NexGen ready for when state is able to support it in 3-5 years.

The Telephone Division of Telecommunications processes the majority of its work orders as an On-Call basis serving over 100 County, State, Federal and Private Agencies. The Telephone Division wires all telephone and data drops in all County buildings as well a manages all moves, changes and installing of temporary service to those displaced by construction. The division also provides all cellular and alpha paging services to county offices as well as assists Fire and Police Agencies of Warren County in obtaining contracts and maintenance of existing units.

MONTH	VZW Equipment Charges 2016
January	\$581.10
February	\$2,103.49
March	\$1,553.56
April	\$512.09
May	\$1,454.85
June	\$1,999.75
July	\$1,226.05
August	\$338.63
September	\$414.61
October	\$542.19
November	\$2,838.56
December	\$2,124.71
TOTAL:	\$15,689.59

<i>2016 Cellular/Service Receivables Non-commissioner funded and billed directly to the agencies.</i>	
MONTH	CELLULAR
January	\$7,042.11
February	\$7,237.78
March	\$7,208.97
April	\$7,395.66
May	\$7,733.55
June	\$7,805.96
July	\$7,745.83
August	\$7,791.41
September	\$7,878.68
October	\$7,955.69
November	\$8,546.65
December	\$8,252.32
TOTAL:	\$81,592.98

ICS Commission earned	
JANUARY	\$11,176.69
FEBRUARY	\$11,800.87
MARCH	\$14,132.03
APRIL	\$13,595.27
MAY	\$14,742.12
JUNE	\$12,949.29
JULY	\$13,518.46
AUGUST	\$13,703.26
SEPTEMBER	\$13,129.60
OCTOBER	\$13,460.57
Total:	\$132,208.16

<i>Mobile Data/Receivables</i>	
QUARTER	AMOUNT 2016
1st Quarter	\$24,137.80
2nd Quarter	\$23,943.35
3rd Quarter	\$24,463.35
4th Quarter	\$25,068.90
TOTAL:	\$97,613.40

Support Services Team

Verizon Cellular / Mobile Data (Monthly cell and Mobile data bill amounts)		
MONTH	Cellular 2016	Mobile Data 2016
January	\$18,291.92	\$10,782.48
February	\$20,810.75	\$10,959.52
March	\$19,582.57	\$10,867.21
April	\$19,017.81	\$10,867.38
May	\$20,357.65	\$10,919.28
June	\$21,072.81	\$10,925.25
July	\$20,261.94	\$11,027.22
August	\$19,448.76	\$11,019.78
September	\$19,441.07	\$10,371.36
October	\$20,527.95	\$10,552.00
November	\$23,409.81	\$10,750.42
December	\$22,526.99	\$10,770.93
TOTAL:	\$244,750.03	\$129,812.83

Cell Work Orders 2016				
MONTH	cell	MD/ PS orders	MyBiz	Total
January	51	3		54
February	75	30		105
March	33	1		34
April	26		1	27
May	42			42
June	76			76
July	31	1		32
August	41			41
September	38			38
October	35			35
November	58			58
December	74	1	1	76
TOTAL:	580	36	2	618

Equipment Counts	
DEVICE	COUNT FOR 2016
Smartphones	280
Aircards	52
Cell Phones	77
Tablets	83
TOTAL:	492

TELEPHONE	
Month	Monthly bill amount totals
JANUARY	\$45,276.16
FEBRUARY	\$46,642.31
MARCH	\$45,109.96
APRIL	\$45,504.55
MAY	\$48,504.37
JUNE	\$46,799.82
JULY	\$46,102.60
AUGUST	\$45,616.73
SEPTEMBER	\$45,826.55
OCTOBER	\$46,253.36
NOVEMBER	\$46,566.90
DECEMBER	\$46,688.90
TOTALS	\$554,892.21

Telecommunications Equipment/Services Invoicing			
The Telephone Division is responsible for the invoicing and recording of accounts receivables for all related equipment and services billed by Telecommunications Divisions.			
MONTH	TST	DST	RST
January	\$551.11	0	\$240
February	\$2,024.16	\$386	\$2,965.00
March	\$1,586.34	0	\$1,898
April	\$970.36	\$968.75	\$639
May	\$1,439.87	\$432	\$1,827
June	\$1,734.81	\$475.00	\$1,923.00
July	\$1,157.59	0	\$440
August	\$281.15	0	\$10,665.52
September	\$459.60	0	\$2,014.80
October	\$648.49	\$495.00	\$3,468.39
November	\$2,789.83	\$81.00	\$2,897.73
December	\$1,824.76	\$31,108.12	\$2,416.50
TOTAL:	\$15,468.07	\$33,945.87	\$31,394.94



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