

## *OASIS Milestones 2020-2022*

### **System Performance 2020 – 2022**

The OASIS System has sustained a 100% efficiency rating between 1/20 – and 12/22, with over 13.6M radio PTTs, and an average call time of 4.40 seconds. ISSI has been stable for the entire year, leading us into a request for additional ISSI talkgroups. Milwaukee County has completed the appropriate PTT and system loading studies prior to any additional ISSI programming. Currently, the entire Milwaukee Fire template has been programmed into the core of the OASIS System, and a new municipal fire template has been created. Pending further testing, it is anticipated that the new Fire template will be rolled out via radio manager, to all municipal fire departments mid-summer 2021.

### **Radio Division Staff (Current Status)**

Radio Division Director – Dan Weber (2017)

Radio Division Specialist - Teresa Bryer (2020)

Radio Division Specialist - Harris Truno (2022)

Radio Division Coordinator – VACANT (as of January 2023)

### **Civil unrest Wauwatosa Fall 2020**

The Milwaukee County OASIS Team responded to the Wauwatosa Civil Unrest events with WinTak support, COMT cache radio support, and COML communications planning. The OASIS System retained its 100% efficiency rating for the duration of the event.

### **Civil unrest – post event**

The OASIS system has proven its strength and reliability during the most recent civil unrest, week of 5/25 – 6/1. Radio PTTs had increased by 29% of the normal weekly volume, and the system was able to sustain operations at 99.9999% reliability. Post event, AES 256 has been offered at a reduced rate for all municipalities.

### **Motorola Critical Connect & Motorola WAVE**

After careful consideration, Milwaukee County has executed its contract to continue use of Motorola Critical Connect. Motorola WAVE, included in the Critical Connect package, will be rolled out Summer 2021 as an option to all end users. WAVE and WAVE Dispatch will be used as an OASIS LMR augmentation over broadband 4G LTE, effectively extending our OASIS system coverage beyond traditional limits of RF. WAVE is currently deployed with MCSO Civil Process, as part of their extradition efforts. WAVE has been successfully tested in Chicago IL, Nashville TN, Duluth MN, Las Vegas NV, and as a bugout option for Wauwatosa PD Dispatch. Critical Connect infrastructure also plays a key role in the deployment of next generation radios following the APX6000 & APX7000. This will allow for proper replacement planning in the near future.

### **New Subscribers**

Marquette Police Department, ATF, City of Waukesha, and WI Capital Police are all among the newest IGA subscribers on the OASIS system. All radios are programmed and currently deployed. An IGA has also been executed with the City of Milwaukee with initial loading of 15 radios from Milwaukee Police Department.

### **Infrastructure Upgrades 2020**

New generators have been installed at McKinley, Ch49, and Muridale. We have requested a quote for a budgeted replacement at HOC. Motorola has also completed a budgetary estimate for channel expansion of the OASIS system to include 6 channels, 12 talkpaths, and TDMA service.

### **2020 Municipal IGA Verifications**

Municipal IGA verifications for 2020 were completed with zero errors, and submitted to CBO for invoicing by Oct 31<sup>st</sup>, giving ample time for municipal end of year budgeting.

### **APX Next Testing**

MCSO will be evaluating the APX Next radio and considering the next generation radio as an upgrade to the APX7000 in the near future. The Motorola APX Next, Motorola APX N model radios, Harris XL200, and Harris XL400 radios have received certification on the OASIS system and can be programmed as replacements as needed. Motorola Smart Connect is pending install for full NextGen LTE compatibility.

### **Motorola discontinued FM battery certifications.**

Motorola has ceased production of FM batteries, and stopped repairing XTS/APX radios to meet the FM standard. This leaves about 890 subscriber radios without a battery or repair solution. West Allis has brokered an agreement for any radio being sent to depot requiring FM certification to be replaced with a LOANER UL APX8000, or APX8000XE. Milwaukee County has been awarded the same replacement agreement, to include the APX Next and APX Next XE. Loaners will be available until 1/1/2026, when the radio can either be returned to Motorola or purchased outright for 65% off list price. This replacement offer also assists OASIS users with creating an APX replacement plan over the next 5 years.

Currently, the APX8000XE radio replacement is complete, except for GMIA Airport Fire. These radios are scheduled to be programmed Q1 of 2023. Radios, and programming have been provided at zero cost to the municipalities. Radio mics and additional batteries have been quoted and submitted to the municipalities for consideration.

### **ISSI Software Upgrade**

ISSI had required daily resets, and constant monitoring due to talkgroups locking up and not passing audio. Packet captures and evaluation allowed us to identify a possible Harris coding change. Once verified by Harris, the coding change was processed, tested, and a new software revision was released. ISSI gateway had been upgraded on May 5<sup>th</sup> 2020, with zero faults since.

### **Democratic National Convention**

DNC efforts have been tireless over the last 9+ months. Expected outcomes include successful joint comms planning (with MPD, MFD, WISP, and the state of IL), and potential radio system expansion. OEM Radio Director has secured a free trial period of Motorola Critical Connect, including a Motorola WAVE Gateway Server. This will allow OASIS users to test and evaluate the integration of 4G LTE technology. This will be advertised to subscriber agencies after initial testing is complete.

### **Marquette PD**

Marquette Police Department has outfitted its agency with OASIS compatible dispatch consoles, and Motorola APX subscriber radios. Template is complete, approved, and Baycom is in possession of the radios.

### **Lightning Strike at US Bank 7/9/20**

The US Bank radio site sustained a major lightning strike on the evening of 7/9/20. Both Motorola and Milwaukee County radio staff continued to monitor the radio site for 24 hours after. No defects noted since the event.

### **2020 IGA Verifications**

Municipal IGA verifications were initiated 8/10. Pushed up radio counts this year due to financial planning around COVID and end of year expenses. Target completion date is September 18th.

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### **US Bank UPS Operational Load Test**

Milwaukee County was notified of a major power disruption at US Bank for a main power upgrade to the buildings main power feed. The radio site UPS is maintained on a yearly basis, however, an operational period had only been a estimate in the past. During the power upgrade to the building, the voltage and amp draw was constantly monitored to provide a more accurate projection and yielded more than 4 hours of backup power during average system usage. This test allowed Milwaukee County adequately to assess the UPS and make future plans for troubleshooting and performing soft equipment shutdowns in the event of a future unscheduled or extended power outage. With the test complete, we can accurately predict usage scenarios and save costly components from sustaining damage from a hard shutdown.

### **2020 Radio Site PMs**

McKinley AC unit (2) installation complete, Brown Deer Park Generator install complete Spring 2020, HVAC PMs complete Spring 2020, Site antenna and line PMs complete Spring 2020, and DC powerplant battery PMs are currently in progress.

### **8/16/2020 – Lakeshore Tower Fire**

Received a text message around 730am on 8/16 from MCSO dispatch indicating that the OASIS Lakeshore Tower radio site was on fire. Arriving on scene shortly after, the building was being evacuated and heavy smoke was coming from the south side of the building. After the fire was extinguished, and the floors were cleared for entry, the radio room was inspected for damage. Thankfully, the only damage sustained was a deadbolt lock on a fire door.

### **2021 Radio Site PMs**

HVAC PMs complete Spring 2021, Site antenna and line PMs complete Spring 2021, and DC powerplant battery PMs are currently in progress.

### **System Performance 2022**

The OASIS System has maintained a 100% efficiency rating between 1/22 – 12/22, which includes the newly deployed MFD talkgroups.

### **New Subscribers**

In addition to Marquette Police Department, ATF, WI Capital Police, and State of WI DCI, we are pleased to welcome WI State Patrol and WI DNR to OASIS. With the addition of WSP and WI DNR, we will be able to increase overall daily interoperability within the SE region of WI and interoperability for major events.

### **ISSI and MFD Update**

The ISSI network experienced one failure this year, due to a City IT staff member cutting an incorrect fiber line. This issue was quickly identified and resolved within 1 hour. As a result, Milwaukee County OEM Radio and the City of Milwaukee Radio Shop are planning to install a redundant connection point at a separate geographical location.

The reduced MFD template has been 90% deployed to all OASIS end users. Results have been promising with increased interoperability, and there are plans in the very near future to accomplish a second touch to deploy the entire MFD template to OASIS Fire radios.

### **US Bank Site Improvement**

With general age lifecycle of equipment, the entire UPS battery bank at US Bank had been replaced in May of 2022, ensuring the stability and longevity of the site for the next 7-10 years. The UPS contains 24 batteries at 160lbs each.

### **Municipal IGA verifications**

Yearly municipal inventory for 2022 is underway, with a goal of 9/30. We are expecting invoicing to go out around the second week of October.

### **2022 CPI Increase**

The CPI rate increase for 2022 has been released by Milwaukee County Central Business Office at a rate of 7.9%. Previously in 2021, OEM Radio had elected to entertain a collective decision from OASIS Governance Board on a reduced rate. For 2022, OEM Radio is attempting to revisit the 7.9% figure with the Central Business Office to review sustainability if we were to further reduce this increase to our municipal partners. The final figure will be released no later than COB 8/5.

### **Site Maintenance**

All 2022 site PMs for radio infrastructure and HVAC are complete. One single AC unit at Muridale is expected to be replaced in 2023 due to equipment age.

### **Upgraded OASIS Site Security**

DVRs have been installed at each OASIS site, giving OASIS greater site security.

### **DBE Contracting Services**

OEM Radio is pleased to announce that we have found a DBE grounds maintenance company to provide services to 3 of our OASIS sites. The OASIS System is now a proud supporter of DBE, further increasing equity and equality within Milwaukee County.

### **County Capital Project – Microwave Backhaul**

A current County capital project for OEM Radio is the microwave loop replacement of both OASIS North and South rings. This equipment is becoming end of life/end of support. OEM Radio currently has a healthy supply of spare parts to support this system until execution of the capital project. The Microwave County capital project was funded November of 2022, without the use of Municipal capital improvement fund dollars. This project is being funded solely by Milwaukee County. As an added benefit, we are including a redundant connection to the OASIS core via the Greenfield radio site. This also allows Greenfield Dispatch to utilize this upgrade to microwave, reducing dependency on local fiber, and further reducing downtime caused by frequent outages. The decision to utilize the Greenfield radio tower was made based upon an RF survey. This survey showed Greenfield as the most geographically viable option.

### **Supply Chain / CV19 Impact on OASIS**

During the onset of CV19, OEM Radio had pre-planned for a worst-case scenario and created a small stockpile of spare OASIS infrastructure parts. Advanced replacement has been severely limited recently, from the ongoing chip shortage, causing repair times to increase exponentially. Thankfully through careful planning, we are sustaining our 100% grade of service while being able to deploy multiple spare parts as needed. Current lead time on infrastructure part repair is up to 6 weeks.

### **MCC7500 End of Life, End of Support**

As briefed in OASIS Governance Board, OASIS Technical Committee, OASIS Operational Committee, MCLEEA, Fire Ops, and ICC, the MCC7500 is end of life and soon to be end of support. Milwaukee County OEM Radio Division has noted supply chain issues with Motorola advanced replacement and extended repair times. Milwaukee County OEM Radio also confirms a healthy supply of spares for OEM 911 Dispatch, until the next OEM 911 upgrade estimated to be in 2024/2025.

Options for replacement include the MCC7500e, Motorola AXS, or other vendors through an additional CSSI gateway that would need to be purchased for each PSAP looking outside of Motorola products. Advising to take caution; a CSSI gateway carries its own risks and compatibility issues when blending different vendors.

The opinion of OEM Radio is that the MCC7500e is an available option, however, its longevity and support are in question. The MCC7500e has been deployed on the Motorola K core for over 12 years already, and Motorola is not willing to comment on future support. The Motorola AXS is a cloud-based product that offers a next generation solution to radio dispatch. The Motorola AXS was released in late 2021 and offers the most longevity for the foreseeable future. Milwaukee County is exploring any future financial benefits between current maintenance contracts and any future subscription services.

### **Infrastructure Upgrades 2019-Present**

**New radio site generators installed at Muridale, Ch49, and Browndeer Park.**

**US Bank UPS replaced.**

**New AC unit at Muridale**

### **NEW HARDWARE**

**Motorola Cirrus Central – Core level system monitoring**

**Motorola WAVE – LTE PTT Application (Milwaukee County Only)**

**Motorola Critical Connect – Cloud Based ISSI (Milwaukee County Only)**

**Municipal Siren OASIS Radio Upgrade – APX6500 Install (No cost to Municipalities)**

**Remote Security Upgrade Service – Dispatch Security Patching (Currently County Funded)**

**Managed Detection and Response – OASIS/Dispatch Cybersecurity (Currently County Funded)**

### **OEM Internal Process Updates and Additional Services Provided**

#### **Radio repair services**

Zero revenue approach, passing savings down to Municipalities. Vendor rate \$1300+ per radio repair, OEM Rate \$650 at cost.

#### **Radio Templating**

Free of charge to Municipal partners

#### **Radio Programming**

Free of charge to Municipal partners

#### **Core configuration changes**

Free of charge to Municipal partners

**On-site subscriber troubleshooting**

Free of charge to Municipal partners

**Event support**

Presidential, Other DV, Emergency planning, Active shooter support, Civil unrest, DNC, RNC, etc.

**ISSI support**

Maintain the current OASIS connection to MPD & WISCOM

**Budgetary numbers as needed**

Motorola direct, including quote review to ensure best price available to our Municipal partners

**100% EMS radio support**

County OEM Radio funds to support assets issued to Municipal EMS Med units, repairs radios broken in the field, and provides parts as requested without reimbursement.

**Next generation technology research**

Research, development, integration, and deployment of NextGen technology.

**Maintenance of conventional assets****Cost savings analysis of new products****Tracking asset end of life and end of support****Continuous capacity study of the current OASIS system and loading****System expansion planning****Operational Expenses****Motorola Support contract SUAll Upgrade Schedule**

This contract covers the field service contract for the OASIS system, as well as the SUAll upgrade schedule. The OASIS system is upgraded with new software and hardware every two years, to a “like new” condition, to extend system longevity as long as possible and maintain the investment into the County public safety system.

\$647K

**Salaries and Wages**

Covers the costs and benefits of (4) OEM Radio staff members, to provide administration of Milwaukee County OASIS Site 2.

\$326K

**Other Shop Expenses**

To include radio parts, radio assets, misc. maintenance expenses, tooling, training, and other support services. \$186K

**Radio Site Leases**

\$152K

**Motorola Core Contract**

This contract covers all aspects of Core maintenance by the Motorola field technician.

\$126K

**MDR/RSUS**

This provides IT Network security and security patch upgrades to the entire OASIS network, including Municipal Dispatch centers.

\$100-120K

**OASIS Core Hosting at Waukesha.**

\$90K

**Motorola Critical Connect**

Cloud based ISSI, Smart Connect, and WAVE LTE integration at the OASIS Core.

\$67k

**Motorola Repair Bank**

Deposit with Motorola on a yearly basis to provide a funding structure for infrastructure parts and maintenance. \$50k

**Cirrus Central system monitoring**

Used to monitor the OASIS system remotely. Email and text notifications to Admin staff for expedited repairs and reduced system down time. Also provides advanced data analytics.

\$25k

**Milwaukee County Master Site Fiber**

Remote administration of the OASIS system.

\$17K

**Nice Silver**

Nice logger integration of the OASIS Radio system and recording of OASIS countywide talkgroups.

\$13k

**General radio site maintenance**

Includes landscaping, snow removal, tower climbing, tower strobe lamp replacement, structure maintenance, and video surveillance.

\$12.5K



**Specialized training**

OASIS required specialized training to administer, operate, and program on the OASIS System.  
\$12K

**Radio site generator service**

\$11.4K

**Fortinet Firewall**

Allows for secure remote access into the OASIS system core. Replaced due to end of life.  
\$8K

**Radio site HVAC maintenance**

\$7K

**KVL Keyloader upgrade**

Provides the requires radio authentication, and encryption keys to County and Municipal subscriber radios.  
\$7k

**Frequency Management**

Contract services for FCC radio frequency management.  
\$2.5k

**Fire Inspection**

Radio site fire protection and inspection services  
\$1.4k