

# Key Largo Wastewater Treatment District Board of Commissioners Meeting Agenda Item Summary

Meeting Date:

September 17, 2019

Agenda Item Number: G-1

Agenda Item Type:

Information / Presentation

Agenda Item Scope:

Review / Discussion

Recommended Action:

Discussion

Department:

General Manager

Sponsor:

Peter Rosasco

Subject:

## **FirstNet Presentaion**

Summary of Discussion:

AT&T FirstNet Representative, Barbara Walz will present and answer questions about the FirstNet program.

### Reviewed / Approved

Operations: \_\_\_\_\_

Administration: \_\_\_\_\_

Finance: \_\_\_\_\_

District Counsel: \_\_\_\_\_

District Clerk: \_\_\_\_\_

Engineering: \_\_\_\_\_

### Financial Impact

\$

Funding Source:

Budgeted:

Yes

### Attachments

1. FirstNet Utilities Flyer
2. FirstNet Deployable Program
3. FirstNet Disaster Recovery Flyer
4. FirstNet Case Study

Approved By: \_\_\_\_\_

General Manager

Date: 9/12/19

# The connections you need. For situations big and small.

## Enhancing communication for utilities workers

Whatever the situation, FirstNet gives those who support first responders – **utilities workers like you** – the ability to connect and communicate with emergency personnel every day. And when disaster strikes, you can be uplifted to priority status, so you can keep the lines of communication open – when it matters most. **Plus, you get:**

### Highly reliable network coverage

FirstNet gets a head start by launching on the nation's best network\* – featuring more than 99% population coverage.

### Trusted security and resiliency

Designed with heightened security in mind to help resist physical and cyberthreats. Ruggedized to help withstand power outages and backed by a dynamic, highly trained disaster recovery organization.

### Dedicated support

Your dedicated technical support is available 24/7/365 – staffed with highly trained professionals who have experience in emergency communications.

### Affordable plans with advanced features

So much more than a competitive rate plan – this nationwide broadband network comes with unique capabilities.

### So you can:

- Manage public safety incidents to restore the power grid and water supply
- Track and communicate with relief personnel and emergency vehicles
- Get enhanced situational awareness with innovative apps and devices

**Get the facts at [FirstNet.com](http://FirstNet.com)**



### Available

This powerful broadband LTE network provides a highly reliable connection. This means those who support first responders are not affected by throttling anywhere in the country. And they can be uplifted in priority when lives are at stake.

### Operable

Experience faster response times and enhanced situational awareness with improved information-sharing across agencies, disciplines and jurisdictions.

### Innovative

Foster an ecosystem of innovation, using advanced technologies, applications and devices that help first responders on FirstNet save lives and protect communities.



# FirstNet Deployables

## Unplanned events/emergency incidents requests, pre-planned event support

To facilitate public safety unplanned event/emergency incident requests and pre-planned event support, AT&T will provide deployable assets dedicated to FirstNet within the continental United States, Hawaii, Alaska, Puerto Rico, the U.S. Virgin Islands, and the Pacific Territories.

Deployables can support the priority and preemption capabilities of First Priority™. Because priority and preemption benefits are available across the AT&T Long Term Evolution (LTE) network, LTE deployables from any of AT&T's fleet of deployable resources are also able to support FirstNet Quality of Service, priority, and preemption capabilities. Deployable systems that utilize satellite backhaul may have more limited capacity as compared to terrestrial sites with microwave or fiber backhaul, though satellite-based deployable assets are able to be deployed more rapidly.

## FirstNet-dedicated SatCOLT deployables

AT&T stores, maintains, and deploys 72 FirstNet Band 14 Satellite Cell on Light Trucks (SatCOLTs) and terrestrial Cell on Wheels (COWs) for Business Continuity and Disaster Recovery to quickly address a variety of operational requirements where there is no terrestrial coverage in an emergency situation or a planned event. FirstNet SatCOLT assets are a "lending library" that FirstNet customer entities can request at no additional charge to support various scenarios – including unplanned event/emergency incident requests and planned events.

This FirstNet service includes all the underlying expenses directly associated with the 72 FirstNet deployables (i.e., fueling, staffing, backhaul charges, ancillary equipment such as routers, etc.), meaning that the FirstNet deployable service is available at no additional charge to authorized public safety agencies.

The FirstNet satellite deployables use non-preemptable satellite backhaul to the FirstNet Core. This will enable AT&T to rapidly respond to time-sensitive public safety deployments without the need to establish terrestrial backhaul.



## Unplanned event/emergency incident requests

AT&T has designed the deployment of these assets for unplanned event/emergency incident requests to support a 14-hour Recovery Time Objective (RTO) within the continental United States, populated regions of Alaska, Oahu, and Puerto Rico (RTO is 7 hours in CA, 10 hours in KS). The 14-hour RTO incorporates the following activities:

**Initial assessment** – Includes triage validation of coverage issues with Radio Access Network (RAN), etc.

**Warehouse response to make-ready equipment/depart** – Includes drive time from resource location to warehouse, Department of Transportation permitting and pre-trip inspections, asset readiness validation, trip planning, etc.

**Drive time to affected site** - Includes such items as weigh station compliance, planning commercial driving routes, weigh station stops, fueling, access and credentialing requirements, coordination on actual setup location, etc.

**Time to turn-up service** – Includes locating asset with clear view of southern sky, position and leveling of asset, performing environmental power and environmental turn-up, acquiring satellite signal, turn-up of RAN equipment, 911 services and testing, drive by testing, completing satellite network connectivity, etc. Once onsite, service is generally available within 1-4 hours.

The 72 FirstNet SatCOLT deployable assets are incremental to AT&T's existing Network Disaster Recovery (NDR) and Construction & Engineering (C&E) deployable assets. Based on need and availability, the NDR national fleet can also be available to public safety via mutual aid request.

AT&T deployable assets are housed at AT&T secure locations to facilitate roadworthiness and technology readiness. FirstNet Deployable requests (emergency, planned event) are initiated by calling FirstNet Care

A triage team assembles to quickly review requests following which a FirstNet Deployables Go/No-Go decision is made. At that point the Response Operations Group (ROG) informs the customer of deployment status. These units are deployed by the AT&T NDR and other AT&T technical teams which collaborate and share resources for responses. AT&T's deployable teams have extensive experience supporting both public safety and AT&T's network requirements.

FirstNet SatCOLTs will be Band 14 enabled, and provide voice (including Voice over IP), data, location, messaging, alerting, whitelisting, and priority and preemption services. Each FirstNet SatCOLT deployable is designed to be capable of up to 25Mbps downlink and 8 Mbps uplink. AT&T will continually evaluate transmission improvement capabilities.

## AT&T deployables

AT&T also brings an existing fleet of Cell on Wheels and Cell On Light Trucks (COLTs) that utilize either terrestrial or satellite backhaul, and are capable of providing LTE and Universal Mobile Telecommunications Service. Traffic for the terrestrial assets is typically backhauled via fiber, Ethernet, and microwave connections. The Network Disaster Recovery SatCOLTs are backhauled via non-preemptable satellite backhaul. NDR SatCOLT deployables are used to maintain AT&T's network to allow it to serve all of AT&T's customers, including public safety. NDR deployables are dispatched by the AT&T internal governance team for network restoration activities.

A portion of the AT&T commercial NDR deployable assets is satellite backhaul-capable, and are planned for upgrade to include Band 14 capability. They are staged strategically at AT&T secure locations. NDR deployable units are currently dispatched both for disaster recovery and to provide additional capacity for select activities (i.e., planned events, via mutual aid requests, etc.). When deployed by AT&T to restore the network, AT&T deployables are also benefitting public safety.

Requests from adopting public safety entities will be triaged in the following basic categories:

**Unplanned event /incident request** - Highest priority, intended to support public safety incidents where terrestrial coverage is unavailable (e.g., wildfires, search and rescue, etc.). Prioritization is reflective of asset considerations documented in many states' Tactical Interoperable Communications Plans: Disasters, large scale incidents, or extreme emergencies requiring mutual aid or interagency communications  
Incidents where imminent danger exists to life or property  
Incidents requiring the response of multiple entities  
Incidents involving a single agency where supplemental communications are needed for agency use  
14-hour RTO described above applies.

### **Preplanned event, drills, tests, or exercise requests**

Requests for planned events or demonstrations should be submitted at least 30 days prior to the event. Even after approval, these requests can be superseded by incident coverage requests. However, when at all possible, public safety entities already using an AT&T FirstNet deployable will not be redirected to another resource. Assets deployed for training exercises/drills are subject to be redirected. Planned event examples include sporting events, concerts, and festivals.

AT&T-owned deployables will remain deployed until the AT&T deployment team restores service (if responding to a disaster outage), or until the event/mission is completed. For public safety deployments, AT&T, FirstNet, and the requesting public safety entity will work together to determine when the deployable asset can demobilize.

The 72 FirstNet SatCOLT deployables are strategically positioned throughout the United States. Deployables servicing any specific incident may or may not originate within the requesting state.

Locations are selected to take advantage of secure AT&T facilities to safeguard the asset and to easily

incorporate that asset into weekly/monthly roadworthy and technical maintenance routines that keep deployables operational and ready for use.

Periodically, AT&T may decide to temporarily increase the number of AT&T FirstNet deployables in a given area and/or pre-stage units based on the scale and/or risks associated with a predicted incident or event (e.g., hurricane landfall, tornado regions, public unrest, seismic area activity, etc.). Locations are not advertised to the general public due to security reasons. Locations servicing states will be shared with public safety entities that adopt FirstNet services.

### **FirstNet deployables value proposition**

- Support public safety incidents where coverage did not previously exist and where terrestrial coverage is unavailable
- Facilitate rapid network restoration
- SatCOLT LTE deployables will support Band 14, FirstNet FirstPriority™, Quality of Service, priority, preemption (QPP) capabilities, non-preemptable satellite backhaul to FirstNet Core
- 72 FirstNet assets are a “lending library”
- 14-hour Recovery Time Objective; once on-site service is generally available within 1-4 hours
- Augmented as needed by AT&T terrestrial and satellite-based deployables
- If circumstances warrant, FirstNet adopting entities can also purchase new or convert existing assets into Customer Owned and Maintained (COAM) deployable units built to their specifications for deployment by the agency

## Customer owned and managed deployables

If circumstances warrant, FirstNet adopting entities can also purchase new or convert existing assets into Customer Owned and Maintained (COAM) deployable units built to their specifications for deployment by the agency.

Public safety entities that own COAM deployables have unlimited use of those assets.

However, when deploying COAM units, owning public safety entities need to contact AT&T to coordinate and mitigate any interference with existing terrestrial coverage. Further, to ensure COAM deployables are operational when needed, owning public safety entities will need to establish and adhere to a maintenance plan for each asset. AT&T will have standard offers for COAM management and support for COAM management and support.



For more information, go to: [FirstNet.com](https://www.firstnet.com)

# Disasters are unpredictable. We're not.

Whatever the situation, we've got your back.



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*"When it comes to natural disasters like Hurricane Michael, we're all in this together. When everything else was down, FirstNet was working."*

**Steve Casey,**  
Executive Director,  
Florida Sheriffs Association

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You take your mission to protect your communities seriously. And we take our role in that mission – to help maintain your vital communications – just as seriously. That's why we have designated personnel to work closely with you as hurricane season begins. To respond to your State Emergency Operations Center activations. And to serve as the primary link between your needs and FirstNet.

We work directly with the FEMA National Response Framework. This response model allows for direct operational status with public safety. So, we're uniquely suited to coordinate with you in times of disaster – whether you're a first responder, or someone who supports their vital efforts.

**In 2018, the first full year of FirstNet operation, we supported more than 200 events and emergency operations, including [hurricanes and record flooding](#).**

- Before [Hurricane Florence](#) even made landfall in South Carolina and North Carolina in 2018, we had assets staged and ready to support the post-storm efforts of national, state and local agencies.
- When [Hurricane Michael](#) pounded Florida, Georgia, and Alabama, we deployed multiple assets, including 32 Cells on Wheels (COWs) and Cells on Light Trucks (COLTs); 7 emergency communications vehicles and portables; and a Hazmat mobile command center.

**And as the 2019 hurricane season begins, we're ready to support you with the tools that you need to get the job done, including:**

- 75 mobile cell sites that link to FirstNet via satellite and don't rely on commercial power availability – including 3 Flying Cells on Wings (Flying COWs)
- Resources for initial assessment and recovery efforts – such as the FirstNet Response Operations at AT&T, which coordinates with the [National Incident Management System](#) to better guide the deployment of these assets.
- Emergency Communications Vehicles (ECVs) – and much more

FirstNet gives you the unthrottled connectivity you need, no matter the emergency. ***That's*** the power of **FirstNet**.





# An Ecosystem Approach to Disaster Response

Government agencies on the front lines need a trusted ally that can help manage all aspects of an emergency.

**COMMUNICATION IS CRITICAL** before, during and after a disaster. People need information, so protecting or restoring communications infrastructure is always a priority. But considering a disaster as a whole system promotes broader planning and better cooperation among different groups. Protecting or restoring communications infrastructure quickly requires a network of logistics support, emergency planning and experience.

“Disaster response is not just about helping communities get their systems back up, it’s about the whole ecosystem,” says Stacy Schwartz, vice president, AT&T Public Safety. “It’s about supporting first responders in every way possible so they can help citizens.”

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STACY SCHWARTZ, VICE PRESIDENT, AT&T PUBLIC SAFETY

The following are recent examples of how AT&T is uniquely supporting disaster response efforts side by side with first responders at the state, local and federal levels.

## Bouncing Back from Irma

As of September 2017, Monroe County, Fla., hadn’t been affected by a major hurricane for 12 years. But it was about to get hit by a whopper in the form of Hurricane Irma.

The most powerful Atlantic hurricane in recorded history — sustaining 185-mile-per-winds for 37 hours — Irma made landfall in Florida on September 10, a Sunday morning. On Monday morning, first responders arrived to assess the

damage and assist residents. The Monroe County Emergency Operations Center (EOC), located in Marathon, was directly in the path of Irma. Fortunately, the EOC building sustained only minor damage. But its fiber network was wiped out, crippling the County’s emergency communications capabilities. Satellite helped serve as a backup, but connections were limited.

On Wednesday, AT&T National Disaster Recovery crews arrived in Monroe County with Cell on Light Trucks (COLTs), which are mobile units equipped with high-capacity antennas. The COLTs provided County officials and emergency responders with cell phone coverage — a huge help in their disaster response efforts. By Wednesday night, AT&T had restored cellular antennas at the Marathon EOC and at three emergency response locations in Key West.

“It was a Godsend,” says Alan MacEachern, director of information technology for Monroe County. “All of a sudden we had voice, text and data capabilities. That was huge from

a disaster response perspective and for communicating information to the public. It also helped boost morale. By then, it had been a rough couple of days for the first responders, so to be able to trade a few texts or send a picture here and there definitely lifted the mood.”

When it came to restoring fiber within the County, however, expectations were low. County personnel projected it would be at least a month before the connections could be repaired.

“You could see the fiber floating in some of the waterways as you drove around town,” says MacEachern.

AT&T crews went to work, completing in days what was expected to take weeks or months.

“By Thursday evening fiber lit to Marathon, then it lit all the way down to Key West on the main trunk,” says MacEachern. “I was absolutely amazed.”

Restoring fiber connectivity helped facilitate continuing emergency response efforts throughout the county. But AT&T workers wanted to go beyond basic repairs and harden the county’s core communications infrastructure so it would be in a better position to handle future emergencies.

“We really got a sense that there was a long-term commitment,” says MacEachern.

**“All of a sudden we had voice, text and data capabilities. That was huge from a disaster response perspective and for communicating information to the public. It also helped boost morale.”**

*ALAN MACEACHERN, DIRECTOR OF INFORMATION TECHNOLOGY, MONROE COUNTY*

Once Monroe County recovered from the hurricane, AT&T helped leaders there replace a 20-year-old phone system with a voice over IP solution. It also extended fiber to homes throughout the county, which is attracting more home-based workers to the area. Finally, AT&T is testing 5G cellular in Big Pine, one of the areas hardest hit by Irma.

“Big Pine is now a test bed for some of the most modern cellular technology in the country,” says MacEachern.

“That is really impressive and a huge benefit for the citizens of Big Pine — we really appreciate it since that area was so strongly affected by Irma.”

### **Putting FirstNet to Work in Brazos County, Texas**

Many public safety agencies operate in silos. But when a major event occurs, those agencies need to share data with mutual responders. To address this issue,

the Brazos County Sheriff’s Office recently became the first local agency in Texas to subscribe to FirstNet.

FirstNet is the country’s first nationwide public safety broadband network being built by the First Responder Network Authority and AT&T. FirstNet is about connecting as many first responders as possible, from rural and remote areas to major metros, and it will give the Brazos County Sheriff’s Office a reliable always-on network connection.

“This is a game-changer, giving our communications capabilities a major boost,” says Brazos County Sheriff Chris Kirk. “FirstNet helps us address potential rural coverage gaps and, in times of network congestion, prioritize first responder communications.”

All of the County’s patrol vehicles, its Mobile Command Center and the Command Center at the Sheriff’s Office are now equipped with the new

## **Commitment to Public Safety**

AT&T is uniquely positioned to respond to disasters and serve the public sector in all types of disasters. “Disaster response is in our DNA,” says Schwartz with AT&T Public Safety. The company has more than a 140 years of history serving public sector missions and the public safety community to prepare for disaster response wherever it’s needed.

- > Most recently, AT&T was selected by the FirstNet Authority to build and manage America’s first nationwide public safety broadband network dedicated to first responders and supporting organizations.
- > The AT&T Network Disaster Recovery (NDR) program includes a fleet of more than 290 self-contained equipment trailers and support vehicles, and conducts readiness drills and simulations year-round to respond at a moment’s notice.
- > Since 1992, AT&T has invested more than \$650 million in the NDR program and spent more than 150,000 working hours on Network Disaster Recovery field exercises.
- > AT&T was the first private sector company certified under the International Business Continuity Management Standard (ISO 22301) for the Voluntary Private Sector Preparedness Program (PS-Prep™).
- > AT&T proactively monitors potential nature-related threats to the network, employees and communities through the AT&T Weather Operations Center.

technology, giving the Brazos County Sheriff's Office the tools it needs to make communications simpler, more collaborative and more secure.

"We're still doing the same job. But with FirstNet, we can do it better than before," says Kirk. "We now have all the information we need at our fingertips, backed by the connectivity needed to access it. And most importantly, it keeps our deputies out in the neighborhoods, so we can spend more time serving Brazos County."

FirstNet enables Brazos County to use data in new ways. For example, emergency responders can stream in near real-time what patrol vehicles are looking at and push that to dispatch, other vehicles or the EOC.

"We no longer have to call dispatch or head back to the office to run a license plate or criminal history check," says Kirk. "We can do it all ourselves, right from our vehicles."

Though Brazos County is the first local agency in Texas to officially adopt the nationwide public safety network and subscribe to FirstNet services with AT&T, the County had been engaged in a collaboration with Harris County on a FirstNet early build project.

"We worked with Harris County to implement the new technology, experiment with it, learn best practices and put it to the test during life-threatening incidents," says Kirk.

FirstNet has already proven its value. During a major flood, field officers positioned their vehicles to stream in near real-time what was happening back to the Command Center.

"We were able to capture different stages of the flooding or different views of the building to best assess the situation, make a plan and create the best outcome possible," says Kirk.

Having a nationwide public safety broadband network also means Brazos County officers can connect to their systems no matter where they are.

"We could send an investigator out to another agency, city or state which also subscribes to FirstNet services, and we would still be able to

## Irma and Harvey By the Numbers<sup>1</sup>



### HURRICANE IRMA: AUG. 30-SEPT. 11, 2017

Hurricane Irma's intense winds and storm surges did serious damage to the Florida Keys and some Caribbean nations and territories. Irma was the strongest Atlantic basin hurricane ever recorded.

MAXIMUM STRENGTH: Category 4 **185** MPH WINDS

AFFECTED AREAS: Florida, Georgia, South Carolina

COST: **\$150-\$200** BILLION IN DAMAGES

RESPONSE: **40,000** FEDERAL PERSONNEL



### HURRICANE HARVEY: AUG. 17-30, 2017

Hurricane Harvey brought record rain to parts of south Texas and Louisiana, burying the region in 27 trillion gallons of rainwater.

MAXIMUM STRENGTH: Category 4 **120** MPH WINDS

AFFECTED AREAS: Texas, Louisiana

COST: **\$180** BILLION IN DAMAGES

RESPONSE: **31,000** FEDERAL PERSONNEL



communicate with that investigator over our FirstNet-connected systems. FirstNet is the only solution that enables that type of interoperability prioritized over a nationwide public safety broadband network,” says Kirk. “It’s multiplying our capabilities and efficiencies.”

### Restoring Communications in Puerto Rico

Hurricane Maria was the worst natural disaster on record to affect Puerto Rico and the deadliest storm of the 2017 Atlantic hurricane season. The center of the near-Category 5 hurricane made a direct hit on Puerto Rico, lashing the island with wind and rain for more than 30 hours. Following on the heels of both Hurricane Irma and Hurricane Harvey, Maria hit the island when federal emergency agencies and personnel were already stretched thin.

Robert W. Patterson was acting administrator of the Drug Enforcement Administration (DEA) when Maria made landfall in Puerto Rico. As such, Patterson was responsible for ensuring the safety of DEA employees and their families.

“The DEA had hundreds of individuals consisting of employees and their families on the island,” says Patterson. “The storm was a huge public safety issue with very personal ties for our agency.”

When Maria made landfall, it knocked out power to the entire island. Ricardo Ramos, chief executive of Puerto Rico’s public power utility, told CNN that its entire electrical infrastructure was “destroyed.” Much of the island’s

population couldn’t access clean water without electrical power.

For Patterson, communication was critical to connect with DEA employees in Puerto Rico. But with 85 percent of the island’s 1,600 cell towers down, as well as the majority of internet and telephone lines, communication was difficult.

“Everybody knew the storm was going to be bad, but I don’t think we fully comprehended the level of destruction coming,” says Patterson.

Within a day, multiple federal agencies began arriving on the island. AT&T was among the first responders, and restoring communication was the company’s priority.

“AT&T was pretty much on the ground as the storm was leaving,” says Patterson.

Within hours, AT&T began coordinating with federal agencies to determine their most critical priorities.

“I was impressed with how prepared AT&T was,” says Patterson. “A lot of things had clearly been pre-planned and pre-staged. Because AT&T had clearly done the preparation up front, it made things much easier when Maria hit to get some communications back up and running. The support of AT&T in both Puerto Rico and the Virgin Islands allowed first responders to provide the critical assistance to private citizens and other private sector businesses to begin getting them up and running.”

AT&T used a variety of strategies to restore communications in parts of Puerto Rico. One of those tactics was its helicopter Flying Cell on Wings (COW), which helped provide data, voice and

text services. The Flying COW hovers 200 to 400 feet above the ground and offers wireless connectivity in a 40-square-mile area, which is farther than other temporary cell sites.

Patterson says AT&T’s ability to get communications up and running allowed his staff to conduct rapid wellness checks on employees and their families.

“If communications hadn’t been brought up so quickly, we would have been in significantly worse trouble,” says Patterson. “Having these plans laid out definitely aided our employees and their extended families, some of which became life-saving efforts for those that had critical medical needs. AT&T put forth a tremendous amount of effort not only for our employees and their extended families, but for everyone on the island.”

### Hoping for the Best, Preparing for the Worst

An estimated \$306 billion in losses made 2017 the most expensive year ever for natural disasters. In response, FEMA announced in June 2018 that it was streamlining its mission to focus on coordination with state and local stakeholders before disasters strike to shorten disaster recovery times. Today, therefore, it’s more important than ever that state, local and federal agencies adequately prepare for the unknown.

Before and after disaster strikes, AT&T works side by side with the public sector and public safety to help prepare for — and recover from — whatever might come their way.

1. A look at four storms from one brutal hurricane season, CNN, November 21, 2017, <https://www.cnn.com/2017/10/10/weather/hurricane-nate-maria-irma-harvey-impact-look-back-trnd/index.html>



> For more information, visit: [att.com/publicsector](http://att.com/publicsector)