City of Trenton
Mission Critical Radio Communications Network
November 9, 2021

NJ State Contract
T-0109
Current System - Critical Issues

- Network is **not** Public Safety Grade
- Police Radios are **not** Public Safety Grade
- Proprietary Network - **non-Standard, non-P25**
- Intermittent **System Failures**
- End of Life **Obsolescence**
- Cyber Threat **(No Encryption)**
- No **Interoperability** Between Other Public Safety Agencies
- **Proprietary System** – No control to manage radio fleet
Two Options for City of Trenton

1. State of New Jersey 700/800 MHz P25 Network

2. Mercer County 500 MHz UHF, T-Band System
Mercer County System

- UHF, T-Band 500 MHz County Owned Frequencies
- County Wide Coverage
- P25 Phase I (No - TDMA - 2 for 1 Channel Split)
- Planned Upgrade to P25 Phase II (2022/23)
State of NJ PSIC Network

State of NJ 700/800 MHz P25 Network

PSIC: Public Safety Interoperable Communications Network
700/800 MHz State Wide Coverage

P25 Phase II TDMA (Includes 2 for 1 channel split)

State Network upgraded with most current P25 hardware/software release including Smart Connect, Wi-Fi, Over the Air Programming, etc.

Two additional sites exclusively for the City Trenton

- 2 Sites in Trenton exclusively for Trenton users
- Using Trenton owned 800 MHz frequencies
- 9 Channels (TDMA - 18 Channel Efficiency)
- 10 fold capacity. Will support all Trenton department users
NJ PSIC 700/800 MHz Network

Utilizing ISSi to connect radio users across multiple P25 networks

Project 25 Network Interoperability

City of Trenton will retain full interoperability with Mercer County UHF system.
## Project Scope  
**NJ State Contract T0109**

- 12 Operator Position Dispatch Consoles - State of the Art Communications Center
- 12 Operator Position 911 Call Taker Telephone Network (NG911 Ready)
- 12 Operator Position Dispatch Console Furniture
- 2 Site Simulcast Cell in Trenton on State P25 Phase II Network
- 3 Microwave Backhaul links to Connect to State Network

### Radios

<table>
<thead>
<tr>
<th>Police Radios</th>
<th>Fire Radios</th>
<th>Other Department Radios</th>
</tr>
</thead>
<tbody>
<tr>
<td>400 Portables</td>
<td>125 Ruggedized Fire Portables</td>
<td>500 Portables</td>
</tr>
<tr>
<td>185 Mobiles</td>
<td>125 Fire Mobiles</td>
<td>500 Mobiles</td>
</tr>
</tbody>
</table>

- All radios include Wi-Fi SmartConnect for increased coverage & reliability
- All Radios include Encryption – AES for Public Safety, ADP for Non Public Safety
- Portable radios will include necessary accessories, i.e. spare batteries, chargers, carry cases, remote speaker mics, etc.
- System Staging, Installation (Infrastructure & Subscribers), Optimization, Warranty Included
- Maintenance on Simulcast Cells funded by State of New Jersey after 1 year Manufacturer Warranty
Procurement via existing NJ State Contract T0109
City of Trenton Owned 800 MHz Frequencies

10 FOLD CAPACITY WILL SUPPORT ALL TRENTON DEPARTMENT USERS

ALL CITY DEPARTMENTS ON ONE INTEROPERABLE NETWORK
# City of Trenton Owned 800 MHz Frequencies

**ULS License**
PubSafty/SpecEmer/PubSaftyNtlPlan, 806-817/851-862MHz, Trunked License - WPQP231 - TRENTON, CITY OF

<table>
<thead>
<tr>
<th>Call Sign</th>
<th>WPQP231</th>
<th>Radio Service</th>
<th>YE - PubSafty/SpecEmer/PubSaftyNtlPlan, 806-817/851-862MHz, Trunked</th>
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<tr>
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<tr>
<td>Control Points</td>
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<td></td>
<td></td>
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<tr>
<td>1</td>
<td>TRENTON COMMUNICATIONS CTR 225 N CLINTON AVE, TRENTON, NJ</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>P: (609)989-3990</td>
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**Licensee**

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<tr>
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<th>Type</th>
<th>Governmental Entity</th>
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<tr>
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<td>PRN</td>
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**Contact**

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<tr>
<th>Contact</th>
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<th>P: (609)394-0001</th>
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<tr>
<td></td>
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<td>F: (609)394-2555</td>
</tr>
<tr>
<td></td>
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<td>E: <a href="mailto:mpscomm@att.net">mpscomm@att.net</a></td>
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</tbody>
</table>

**Land Mobile Data**

<table>
<thead>
<tr>
<th>Extended Implementation (Slow Growth)</th>
<th>Assoc. Call Signs</th>
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**Eligibility**

90.17A - APPLICANT CLAIMS ELIGIBILITY AS A GOVERNMENTAL ENTITY ELIGIBLE TO OPERATE RADIO STATIONS FOR TRANSMISSION OF COMMUNICATIONS ESSENTIAL TO ITS OFFICIAL ACTIVITIES.

**Ownership and Qualifications**

<table>
<thead>
<tr>
<th>Radio Service Type</th>
<th>Mobile</th>
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<tr>
<td>Regulatory Status</td>
<td>Private Comm</td>
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<td>Interconnected</td>
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**Alien Ownership**
# City of Trenton Owned 800 MHz Frequencies

**ULS License**
PubSafty/SpeclEmer/PubSaftyNtPlan,806-817/851-862MHz,Trunked License - WPGP231 - TRENTON, CITY OF

## Frequencies Summary

<table>
<thead>
<tr>
<th>Call Sign</th>
<th>Radio Service</th>
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</thead>
<tbody>
<tr>
<td>WPGP231</td>
<td>Ye - PubSafty/SpeclEmer/PubSaftyNtPlan,806-817/851-862MHz,Trunked</td>
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</table>

### Frequencies for Location 1
Frequencies per Summary Page

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<thead>
<tr>
<th>Frequency</th>
<th>Loc#</th>
<th>Ant#</th>
<th>ID</th>
<th>Units</th>
<th>Power</th>
<th>ERP</th>
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<td>FB2</td>
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</tbody>
</table>
APX™ 6000 SINGLE-BAND PORTABLE RADIO

VOICE AND DATA, ALL AT ONCE
Update your radio fleet without interrupting voice communications with secure Wi-Fi. This dramatically improves the speed of configuring new codeplugs, firmware and software features over-the-air via Radio Management*. Agencies can pre-provision up to 20 secure Wi-Fi hotspots so personnel can easily access updates at the facility or in the field.

HEAR AND BE HEARD
The APX 6000 is equipped with a 3-watt speaker, 3 integrated microphones and the Adaptive Audio Engine. This changes the level of noise suppression, microphone gain, windporting and speaker equalization to produce clear and loud audio in any environment.
APX™ 6000XE SINGLE-BAND PORTABLE RADIO

VOICE AND DATA, ALL AT ONCE
Update your radio fleet without interrupting voice communications with secure Wi-Fi. This dramatically improves the speed of configuring new codeplugs, firmware and software features over-the-air via Radio Management*. Agencies can pre-provision up to 20 secure Wi-Fi hotspots so personnel can easily access updates at the facility or in the field.

HEAR AND BE HEARD
The APX 6000XE is equipped with a 3-watt speaker, 3 integrated microphones and Adaptive Audio Engine. This changes the level of noise suppression, microphone gain, windporting and speaker equalization to produce clear and loud audio in any environment.
APX™ XE500 REMOTE SPEAKER MICROPHONE

KEY FEATURES

- Available With and Without a Channel Knob
- High Visibility Strobe Light
- Adaptive Audio Engine
- IP68, 2 Meters, 4 Hours Submersion
- Heat Resistant Housing and Cable
- Orange Illuminated Emergency Button
- Transmit / Receive LED
APX 6500
SINGLE-BAND MOBILE RADIO

STAY INFORMED. STAY SAFE.

You may not know what the next call will entail, but you do know that your team needs communication they can count on. Whether on a motorcycle, in a squad car or a fire truck, the rugged and compact design of the evolved APX™ 6500 mobile radio is designed to maximize the real estate in your vehicle and keep your entire agency safely connected. Now with integrated Wi-Fi, Bluetooth and SmartConnect, the APX 6500 gives you more ways to manage your radio and stay connected. And when your vehicle sustains a high impact, the radio can automatically alert dispatch.

Security is more important than ever. Criminals are testing you on the streets and over the air. Fight back with multiple levels of protection to encrypt and secure your voice and data communication against eavesdropping.

Stay connected, keep safe and secure your communications with the APX 6500 single-band mobile radio.
APX 6500
SINGLE-BAND MOBILE RADIO

Dedicated volume and channel knobs for quick control

Easy to read, anti-reflective color display

Programmable menubuttons

Bluetooth MPP Pairing
STAY INFORMED. STAY SAFE.

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APX™ 6500 SINGLE-BAND MOBILE RADIO

O2 CONTROL HEAD

EXTREME USABILITY
The O2 control head provides rugged simplicity for efficient and confident communication. Extreme controls with easy to read color display and a built-in 7.5 watt speaker provides clear visual and audible user experiences. Available in high impact green or black.

Exaggerated design and rugged housing for extreme environments

Full color display with night mode and intelligent lighting

Integrated high density speaker for loud, clear audio

Programmable multi-select buttons

Enlarged multi-function channel/volume knob
Non Public Safety Portables

APX™ 900 SINGLE-BAND P25 PORTABLE TWO-WAY RADIO

FEATURES AND BENEFITS

- Dual-Knob Solution
- Available in VHF, UHF (R1 and R2), 700/800 MHz, and 900 MHz bands
- Modes of Operation:
  - Clear or digital-encrypted ASTRO® 25 Trunked Operation
  - Analog MDC-1200 and Digital P25
  - Conventional System Configurations
- Narrow and wide bandwidth digital receiver (6.25 kHz equivalent / 12.5 kHz / 25 kHz)
- Embedded digital signaling (ASTRO and ASTRO 25)
- Intelligent Priority Scan
- Available in models 2 and 3
- Radio Profiles
- Unified Call List
- User-programmable Voice Announcement
- Instant Recall
Non Public Safety Portables

APX™ 1500 SINGLE-BAND P25 MOBILE TWO-WAY RADIO

P25 CONNECTIVITY.
EXCEPTIONAL PRICE.

Your city infrastructure represents a large investment and its users depend on that investment every day. Why not protect it by giving your team the tools they need to operate and maintain it efficiently? Equip them with the affordable APX™ 1500 P25 mobile radio so they can get work done.

The APX 1500 mobile is designed to provide reliable P25 radio communication at an affordable price while standing up to the rigors of every day work. The rugged simplicity of the O2 control head includes an easy to read color display and a built-in 7.5 watt speaker for efficient and confident communication. P25 radio capability enables seamless interoperability with first responders and other P25 radio users. Integrated Bluetooth provides wireless communication with Commercial off the shelf (COTS) Bluetooth accessories.