Public Safety Communications Board

Leon County
City of Tallahassee
Leon County Sheriff
Tallahassee Fire Department
Tallahassee Police Department
Leon County Emergency Medical Service

(The following attachments are for the January 11th meeting)

Agenda
Public Safety Communications Board Meeting
January 11, 2007

Meeting Time and Location: 11:00 p.m. Tour of the Traffic Management Center
11:30 p.m. in the Tallahassee Room of City Hall

1. Approval of the December 7, 2007 PSCB Mecting minutes.
2. Approval of the December 19, 2007 Potential Land Sites Tour minutes.
3. Acceptance of the Status Report regarding the current 800Mhz System operational issues.
4. Status Report from Winbourne and Costas.
5. Review the Radio Communications Request For Proposal.
6. Follow-up regarding the tour of the potential site locations for the Public Safety Communication Center.
7. Discussion regarding the Emergency Operations Center.
8. Discussion regarding the status of the selection process for the Public Safety Communications Director.
9. New Business
10. Next meeting date:
    Date: February 8, 2007
    Time: 11:30am to 1:30pm
    Location: 2nd Floor Community Room
    Renaissance Center
    435 North Macomb Street
11. Possible agenda topics for the next meeting

Minutes for the December 7, 2006
Public Safety Communications Board Meeting
11:34 A.M.

1. Approval of the October 27, 2006 minutes.

   The Sheriff moved, seconded by the Chief Dick, to approve the October 27, 2006 minutes. The motion passed unanimously.

2. Update on issues regarding the existing 800 Mhz System

   Leven Magruder, 800 Communications System Manager, presented the PSCB with an update regarding the existing 800 Mhz System:

   i. The system continues to perform satisfactorily for Public Safety and local Government personnel.
   ii. FAMU PD requests permission to use one TPD DATA system ID for the purpose of testing the COT DATA system throughout the FAMU campus. This is consistent with approval granted previously to FSU PD. FAMU is interested in establishing a DATA system and connectivity to the COT DATA platform, in some capacity.
   iii. City and LCSO resources are heavily involved in the planning and later operations during the Governor's inauguration activities. We are committing personnel and resources to this commitment.
   iv. 800 MHZ Rebanding, required by the Federal Government, is proceeding very slowly. A letter was attached from the City Attorney in Washington, hired for rebanding, helping to explain the delay in progress.

   The City Manger moved, seconded by Chief Quillin, to grant FAMU PD permission to use TPD DATA system ID for the purpose of testing the COT DATA system throughout the FAMU campus. The motion passed unanimously.

3. Status of joint dispatch consultant contract with Winbourne and Costas:

   Ira Grossman, Consultant with Winbourne and Costas, presented a brief report to the PSCB.

4. Update regarding the Radio Communications Request For Proposal:

   Don DeLoach, Chief Information Systems Officer, updated the PSCB on the current status regarding the radio communications RFP. Tusa, a consultant hired to draft the RFP, has completed a draft RFP and the Technical Subcommittee is in the process of reviewing the draft.

   The County Administrator requested the RFP be completed for review by the PSCB at their next meeting, January 11, 2007. Mr. DeLoach stated that the Technical Subcommittee will attempt to meet this goal.

5. Possible partners for co-location:
   - Capital Area Chapter of the American Red Cross:

     Chris Floyd, Interim Director of the Capital Area Chapter of the American Red Cross, gave a presentation to the PSCB. The Capital Area Chapter is looking break ground by next summer for a new building and is interested creating a campus center for emergency management. This campus center would hopefully include the Joint Dispatch Center. Mr. Floyd stated that he has $4.5 million to allocate toward the project. Mr. Floyd stated that if land was donated towards their project that the Red Cross would be able to contribute funds toward site infrastructure.

   - State of Florida Traffic Management Center (TMC):

     Gabriel Menendez, Director of Public Works for the City of Tallahassee, gave a presentation to the PSCB regarding the Traffic Management Center. Mr. Menendez stated that State of Florida intends to contract with the City to monitor traffic flow. The state has started setting aside funds toward funding a portion of the facility. In addition, Mr. Menendez stated that the PSCB has a unique opportunity to include traffic management into the Joint Dispatch facility.

     The City Manager requested that during the PSCB's next meeting that they tour the Traffic Management Center in City Hall. The PSCB will be touring the Traffic Management Center on January 11, 2007 at 11:00 am.

     The County Administrator stated that the County in the process of hiring an architect for construction of an EMS building. The current location planned is the corner of Blairstone and Miccosukee. The County Administrator also stated that he liked the idea of a campus concept for emergency management and determinate on the location and timing, the County and PSCB may consider adding the EMS building to the campus concept.

     The Sheriff stated that he agreed with the campus concept for emergency management. The Sheriff stated that he believed it would be important to include all emergency management and that this would be a perfect opportunity to address including an Emergency Operations Center in the campus concept.

6. Preliminary discussion regarding the location of a Public Safety Communications Center:

   The PSCB reviewed the recommended potential site locations for a Public Safety Communications Center. The PSCB decided that due to height restrictions, the Tallahassee Airport should be removed from the list. In addition, Pat Curtis, Leon County MIS Director, commented on the complexities in technology issues related to the landfill site.

   The City Manager requested that the PSCB tour the five remaining sites for the Public Safety Communications Center. The PSCB will tour the potential land sites on December 19, 2006 at 9:00am. The PSCB will meet behind City Hall (on Duval Street) in order to begin the tour.

7. New Business:

   None.

8. Next meeting date:

   Date: January 11, 2007
   Time: 11:00am* to 1:30pm
   Location: City Hall

   *Note: PSCB will tour the Traffic Management Center in City Hall at 11:00am. The PSCB regularly scheduled meeting will begin at 11:30am.

9. Possible Agenda Topics for the Next Meeting:

   i. Acceptance of the Status Report regarding the current 800 MHz System operational issues
   ii. Status Report from Winbourne and Costas
   iii. Review of the Radio Communications Request For Proposal
   iv. Follow-up regarding the tour of the potential site locations for the Joint Dispatch Center
   v. Discussion regarding the Emergency Operations Center
   vi. Discussion regarding the status of the selection process for the Public Safety Director

   The Sheriff moved, seconded by the City Manager to adjourn the meeting. The motion passed unanimously.

Meeting adjourned at 12:30 p.m.

Minutes for the December 19, 2006
Public Safety Communications Board
Potential Land Sites Tour

The members of the Public Safety Communications Board and staff toured the potential land sites for the Public Safety Communications Center. The following sites were observed by the PSCB and staff:

1. City of Tallahassee: Public Works – Tree Farm
   2310 Miccosukee Road – behind Leon County Public Works Buildings
   11 acres

2. City of Tallahassee: Public Works – Real Estate
   Generally bounded by Miccosukee Road, Centerville Road, and I-10
   429 acres

3. Leon County: Tom Brown Park – Easterwood/Weems
   The land is located between the Armory and Animal Shelter
   17 acres

4. Leon County: Fair Grounds
   411 Paul Russell Road
   50 acres

The following site was not visited during the PSCB tour due to small acreage of building land:

City of Tallahassee: Parks and Recreation – Jackson Bluff
2803 Jackson Bluff Road – adjacent to the ball parks
8 acres

MEMORANDUM

DATE: January 11, 2007

TO: Parwez Alam, Chair
Anita R. Favors Thompson, Vice Chair
Sheriff Larry Campbell
Chief Walter McNeil
Chief Cynthia Dick
Chief Tom Quillin

FROM: Leven Magruder, 800 MHz Communications System Manager, City of Tallahassee

SUBJECT: Monthly Status Report for the 800 MIIz System

800 MHz System Status Report

- 800 System-continues to perform well and support all Public Safety and Governmental users.
- Interoperable Communications-support for '07 Governors Inauguration was highly successful—see attached spreadsheet
- 800 MHz Rebanding—Sprint Nextel financial offer due to RCD on 1-05-07 delayed until 1-11-07. The Request For Planning Funding (RFPF) is designated to reimburse the Vendors for activities and tasks to write the initial rebanding plan. The next plan is the Frequency Reuse Plan. We will start work with the Vendors to assemble this next plan after February '07.
- Motorola R 56 Grounding Audit—FY 07 Continuation of Upgrade at all sites—work ongoing, being conducted by Morgan Electric and First Communications
- Implementation of Mobile DATA Computers (MDC) merging with City Network and high-speed Internet access using cellular technology. This is the 30 MDC unit test by TPD.
- Technical support and program coordination for TSC on the Tusa Consulting RFP in support of the PSCB.
- Continue to support Region 2 agencies with Florida Interoperable Network training for agency-to-agency Interoperability.
- Work closely with FDLE in gathering date for the DSTF and HS requirement for a Tactical Interoperable Communications (TIC) plan for each region within Florida

800 MHz Voice System

Snapshot for 1:00pm to 1:15pm 1/2/2007

Table 1 Time Period	Chan #	Total Sec	PTT Count	Chan usage %
13:15	1	0		
13:15	2	0		
13:15	3	0	Control Channel	
13:15	4	0		
13:15	5	0		
13:15	6	0		
13:15	7	0		
13:15	8	296	79	33%
13:15	9	0		
13:15	10	269	69	30%
13:15	11	363	73	40%
13:15	12	0		
13:15	13	340	82	38%
13:15	14	267	70	30%
13:15	15	314	74	35%
13:15	16	392	77	44%
13:15	17	366	73	41%
13:15	18	322	78	36%
13:15	19	286	66	32%
13:15	20	325	85	36%
13:15	21	0		
13:15	22	332	74	37%
Total		**3872**	**900**	**20%**

This 15 minute snapshot shows all 22 channels and their usage. This time period had the most use on January 2nd. As this shows channels 1,2,4,5,6,7,9,12,& 21 were not used at all. These channels are kept in reserve and are not used until all the others are busy.

Total system use was 20% for this time period (1/2/07 @ 1:00pm) I also checked on (1/3/07 @ 4:00 pm) which was the system high usage for that day and it was 19%. This indicates the inauguration didn't have much affect on the system usage.

This is the total System usage % (all 22 channels) for 15 minutes.

Table 2 **All 22 Channels on the 800 MHz Voice System**

All Talk groups		**Total Seconds**	**PTT Count**	
800001 thru 800759	Total	**208,567**	**57,118**	This is the total time used by the system for January 2nd. The total system use for the day was **12%.**
		Average length of conversation was 3.7 sec.		

This is for the whole day 24 hours.

Table 3 **Talk groups used for the inauguration**

Talk group		**Total Seconds**	**PTT Count**	
SPV10A		1520	351	
SPV10B		8361	2223	
SPV10C		3000	752	
SPV11A		1417	371	
SPV11B		7800	1423	
SPV11C		903	222	
PSCALL		373	162	
PSTAC1		2060	307	
PSTAC2		3000	576	
PSTAC3		0	6	
	Total	**28434**	**6393**	This amounts to 14% of the time used by all 300+ talk groups or 1% of the total system time.
		Average length of conversation was 4.5 sec.		

This table shows all the talk groups used for the inauguration and the time for each one.

Memorandum

To: Parwez Alam, County Administrator

Anita Favors Thompson, City Manager

Walt McNeil, Chief of Tallahassee Police Department

Sheriff Larry Campbell

Cindy Dick, Chief of Tallahassee Fire Department

Tom Quillin, Chief of Emergency Management Services

From: Public Safety Communications Board Technical Sub Committee

Date: 1/9/2007

Re: Technical Sub Committee Update

On August 25, 2006 you directed the PSCB Technical Sub Committee to design a Request For Proposal to upgrade our current Simulcast Analog 800Mhz System. With your approval and the approval of both the City and County Commissions, we hired Tusa Consulting Services to help meet this challenge. Your directive was to design an RFP that allowed open competition and would take into account all options that the PSCB should consider.

During the drafting of the RFP, it became very apparent to all Technical Sub Committee members that to devise an RFP that would allow the PSCB to consider all options would result in an RFP that would not allow a true "apples to apples" comparison. After much discussion, it was decided that Tusa Consulting would design an RFP that would allow open competition on a APCO Project 25 Phase I 800 Mhz System. This RFP is complete and we anticipate it being released on January 29, 2007.

To meet your directive about addressing all other options, the Technical Sub Committee proposes the following three sole source options:

- A formal letter will be sent to MACOM with criterion established for coverage and subscriber units and a request for a proposal to become a part of the State Law Enforcement Radio System (SLERS).

- A formal letter will be issued to Motorola to provide a proposal to install an analog upgrade to the current existing system.

- A formal letter will be issued to Motorola to provide a proposal for a digital upgrade to the current system. This upgrade would only upgrade Public Safety subscribers.

All of these items will be released at the same time with proposal dates due back to the technical sub committee at a future date to be decided. The result of these four options will give the PSCB the best information on how to proceed. Based on the proposals received and in consultation with Tusa, the Technical Sub Committee will recommend which option best meets the needs of our radio users. It is the Technical Sub Committee's intent to provide the PSCB all of the information available so that a decision on how to proceed can be made with confidence.

Options:

1. Approve the recommended process established by the Technical Sub Committee in this memorandum, which includes the following:

    a. Issue an RFP for an APCO Project 25 Phase I 800 Mhz System

    b. Direct the following sole source options also be conducted:

        i. A formal letter will be sent to MA/COM with criterion established for coverage and subscriber units and a request for a proposal to become a part of the State Law Enforcement Radio System (SLERS).

        ii. A formal letter will be issued to Motorola to provide a proposal to install an analog upgrade to the current existing system.

        iii. A formal letter will be issued to Motorola to provide a proposal for a digital upgrade to the current system. This upgrade would only upgrade Public Safety subscribers.

2. PSCB direction.

Recommended option – Option 1

Attachment:

RFP from Tusa

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MEMORANDUM

DATE: January 11, 2007

TO: Parwez Alam, Chair
Anita R. Favors Thompson, Vice Chair
Sheriff Larry Campbell
Chief Walter McNeil
Chief Cynthia Dick
Chief Tom Quillin

FROM: Alan Rosenzweig, Assistant County Administrator

SUBJECT: Site Locations for the Public Safety Communications Center

Background:
During the December 7, 2006 meeting, the PSCB reviewed seven potential site locations for a Public Safety Communications Center (Center). Upon discussion, the PSCB decided that due to height restrictions, the Tallahassee Airport should be removed from the list. In addition, Pat Curtis, Leon County MIS Director, commented on the complexities in technology issues related to the landfill site. This site was also removed from the list. The City Manager requested that the PSCB tour the five remaining sites for the Center.

On December 19, 2006, the PSCB and staff toured the remaining five potential sites for the Center. The following sites were observed by the PSCB and staff:

- City of Tallahassee: 2310 Miccosukee Road – behind Leon County Public Works Buildings (11 acres)
- City of Tallahassee: Public Works – Generally bounded by Miccosukee Road, Centerville Road, and I-10 (429 acres)
- Leon County: Easterwood/Weems – located between the Armory and Animal Shelter (17 acres)
- Leon County: 411 Paul Russell Road – Fairgrounds (50 acres)
- The following site was not visited during the PSCB tour due to small acreage of building land: City of Tallahassee: 2803 Jackson Bluff Road (8 acres)

Analysis:
Two out of the four sites appear to be viable locations: the Easterwood/Weems site and the Miccosukee Road/Centerville Road/I-10 site. Although the exact amount of acreage needed for the Center has yet to be determined, these two sites appear to be adequate locations. County and City staff have begun to develop preliminary site selection criteria in order to continue the evaluation process (attachment #1).

Due to the limited options of possible sites owned by the County and City, the PSCB could also consider expanding the search of site locations to privately owned property. One solicitor, Mr. J Lee Vause, has already offered 17 acres of privately owed land for consideration of the Center (attachment #2). In order to begin exploring the option of evaluating privately owed lands for the center, the PSCB would need to establish a process to conduct this effort (i.e. hiring a realtor).

Part of the complexity of the site selection process is the result of not knowing with certainty all of the uses which will be housed at the location. The following uses have been discussed:

- Joint Dispatch Function
- Co-locating with the American Red Cross
- Co-locating with City Traffic Management Center
- Leon County Emergency Medical Services (EMS)
- Emergency Operation Center (EOC) – listed as a separate item on the PSCB agenda

Issues for Consideration:
In order to keep the site selection process moving forward, the PSCB may wish to consider the following:

1. Determine if privately owned lands will be considered for the siting of the facility. If so, establish an appropriate process for creating a possible list of sites.
2. Direct staff to refine and modify the attached site selection criteria to be used in evaluating all possible sites being considered.
3. Seek a formal commitment from the Red Cross for their desire to co-locate.
4. Consider directing staff to proceed with issuing a Request for Proposal (RFP) for architectural services for the design of the facility. The intent here is to parallel the site selection process and architectural services selection as opposed to proceeding in a linear fashion. This approach would reduce the overall amount of time required to complete the project.
5. Possible co-location of an EOC at the facility.

Attachments:
#1 Draft Site Selection Criteria
#2 Letter from J. Lee Vause
#3 Letter to J. Lee Vause from Public Safety Communications Board Chair

Joint Dispatch Site Selection Criteria

DRAFT

Issue	Matrix Weight Factor	Score

Physical

- Area of Site
  - Joint dispatch 8.5 acres
  - w/Red Cross 14.6 acres
  - Leon EMS 4 +/- acres
- Configuration of site
- Topography
- Elevation
- Easements

Constructability

- Flood Zone
- Soil conditions
- Stormwater management
- Environmental issues
- Utility availability
  - Water
  - Sewer (Gravity)
  - Power (overhead/underground)
  - Gas
- Dual utility service
- Communications
- Vegetation/Trees

Controls

- Land use
- Zoning
- Concurrency requirements
- Adjacent land use
- Traffic Capacity

Access

- Public Access (bus)
- Vehicle access
- Large vehicle access
- Air access (helicopter)
- Access to support elements (State, EOC, hospital, Public Works, Supply Distribution Points, etc.)
- Access & central to City Hall & Courthouse
- Storm/Non Storm Access

Services

- Fire
- Police
- EMS

DRAFT

Security

Hazard (Threat) assessment
- Bombing
- Explosion
- Fire
- Terrorist

General

LEED/FGBC Certification
Public visibility
TV Broadcast Support

Cost

Cost of acquistion
Cost of property
Cost of site development

Attachment # 2
Page 1 of 3

J. Lee Vause
57 Springview Drive
Crawfordville, FL 32327
Telephone 850-926-3181 Fax 850-926-9451
e-mail: jleevsr@comcast.net

RECEIVED DEC 27 2006

December 21, 2006

Mr. Parwez Alam, County Administrator
Leon County
Leon County Courthouse
301 South Monroe St.
Tallahassee, FL 32301

Ms. Anita Favors-Thompson, City Manager
City of Tallahassee
City Hall
300 South Adams St.
Tallahassee, FL 32301

Dear Mr. Alam and Ms. Favors-Thompson:

I noted with interest the story in the TALLAHASSEE DEMOCRAT yesterday, December 20, 2006, regarding the potential locations for the Joint Emergency Dispatch Center. Parenthetically, allow me to extend my personal congratulations to both of you and your staffs and the two Commissions for this milestone event.

The reason for this letter is to offer to you another site for your consideration. I own a site consisting of seventeen acres, together with other property across the street. The seventeen-acre site is located within the city limits; fronting on a four-lane major thoroughfare (SR 61 Crawfordville Highway with a frontage of approximately five hundred and fifty feet. The property is located at the intersection of a collector road (Shelfer Road) and the intersection is fully signalized. The property fronts approximately Nineteen hundred and fifty feet on Shelfer Road and is approximately one and one-half miles from Capital Circle and three and one-half miles from downtown, providing excellent access to the road transportation network serving Tallahassee and Leon County. The property across the street (two and one-half acres would appear to me to be adequate for a helicopter landing facility it that is part of your ultimate plans and the seventeen-acre site is not adequate.

The property is currently zoned for a mixture of Commercial and Industrial which should be suitable for your announced program and, I think, would be welcomed by the area. Across the street on a ten-acre site is the Florida Department of State Archives and public records center.

All city services and utilities are on site, including Electricity, Water, Sewer and Natural Gas.

I am enclosing a survey of the subject site(s) and am available to meet with you or your designated staff to provide any other information you might need should you be interested in considering this site. I have a complete topographical survey, a recent environmental report and various other data which might be useful.

December 21, 2006

Mr. Parwez Alam, County Administrator
Ms. Anita Favors-Thompson, City Manager
Page 2

If you deem this proposed location to be worthy of consideration, I can be reached at the above address and phone numbers or my cell phone at 567-3732.

Sincerely,

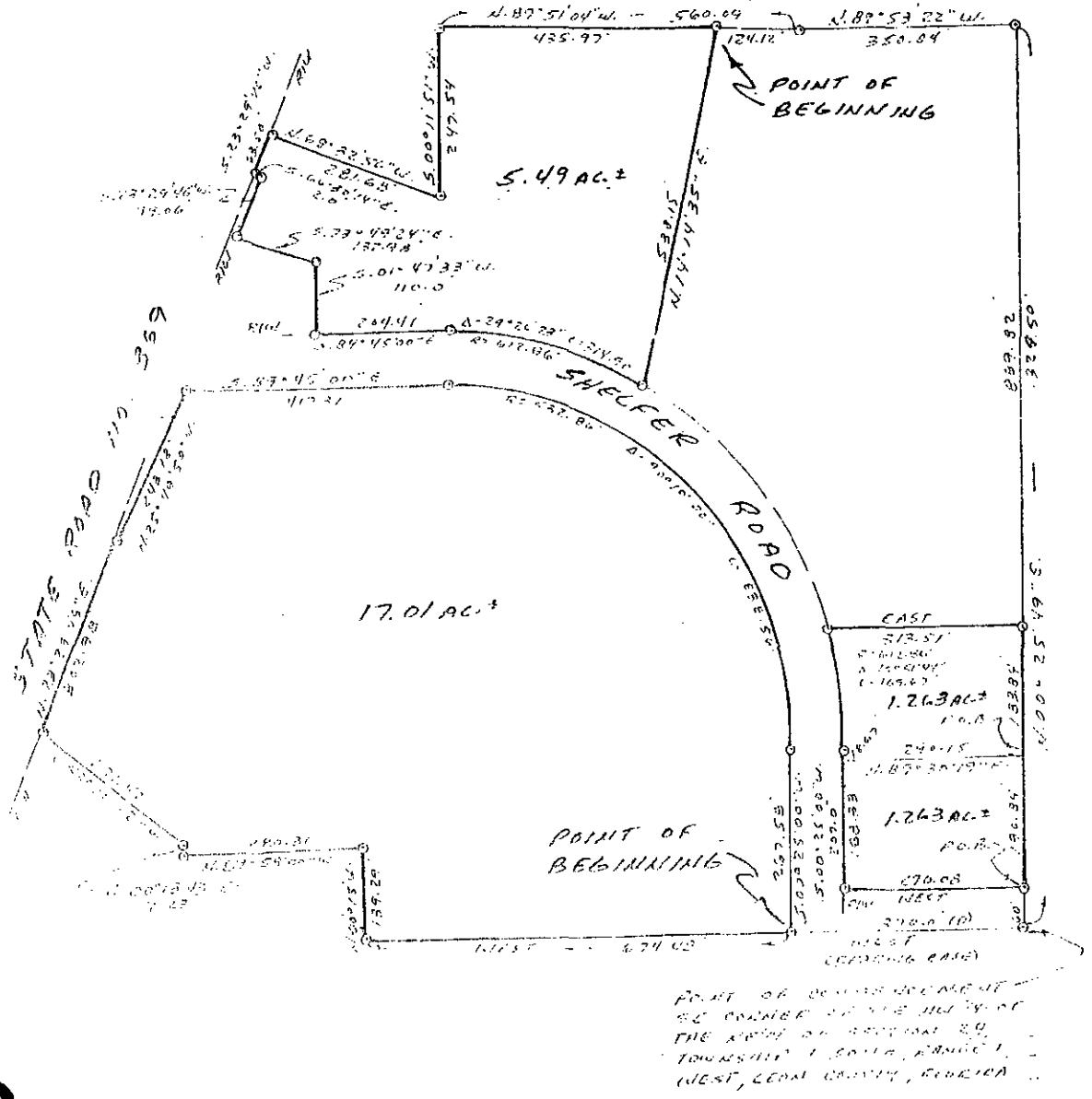
J. Lee Vause

Enclosure: Survey

Copy:

Hon. Larry Campbell, Leon County Sheriff
P O Box 727
Tallahassee, FL 32302

Chief Walt McNeill, Chief of Police
234 East 7th Avenue
Tallahassee, FL 32303



I hereby certify that this is a true and correct representation of the property shown hereon and that this survey substantially meets the minimum technical standards of land surveying (Chapter 61G17, Florida Administrative Code).

The undersigned surveyor has not been provided a current title opinion or abstract of matters affecting title or boundary to the subject property. It is possible there are deeds of records, unrecorded deeds, easements or other instruments which could affect the boundaries.

DONNIE R. SPARKMAN
Surveyor and Mapper
Florida Certificate No. 5147
(LB 6475)

NOTES:

1. See attached sheets for legal descriptions.
2. Not valid without the signature and original raised seal of a Florida Licensed Surveyor and Mapper.
3. THIS IS NOT A BOUNDARY SURVEY.

LEGEND

FND -FOUND
C.M. -CONCRETE MONUMENT
POB -POINT OF BEGINNING
SPB -SET 5/8" RE-BAR #1475
D -DEED
M -MEASURED
R -RECORDED PLAT
R/W -RIGHT OF WAY
R -RADIUS
Δ -DELTA
CD -CHORD
L -ARC LENGTH
C -CALCULATED
R/C -ROD AND CAP
I.P. -IRON PIPE
P.C. -POINT OF CURVE
CL -CENTER LINE
C.O.T. -CITY OF TALLAHASSEE

SKETCH OF PROPERTY FOR
CEE VAUSE
PREPARED BY
EDWIN G BROWN AND ASSOCIATES, INC.
2825 CRAWFORDVILLE HWY. P.O. BOX 618, CRAWFORDVILLE, FL 32326 (850)926-3010

DATE		DRAWN BY: DRS	CHECKED BY:
REVISION		SCALE: 1" = 200'	
		DATE: APRIL 10, 2003	
		JOB NUMBER	PSC#
		03-220	22641

Attachment # 6
Page 3

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Leon County
Board of County Commissioners

301 South Monroe Street, Tallahassee, Florida 32301
(850) 606-5302 www.leoncountyfl.gov

Attachment # 3
Page 1 of 1

issioners

ROCTOR
:t 1

3. SAULS
:t 2

DAILEY
:t 3

N DESLOGE
:t 4

ACKLEFF
:t 5

THAELL
:ge

:PUY
rge

/EZ ALAM
ty Administrator

ERT W.A. THIELE
ty Attorney

December 29, 2006

Mr. J. Lee Vause
57 Springview Drive
Crawfordville, Florida 32327

Re: Site location for the Joint Emergency Dispatch Center

Dear ~~Mr. Vause~~ Lee:

I appreciated receiving your letter of December 21, 2006 regarding a site for the Joint Emergency Dispatch Center.

At this point in the process, the Public Safety Communications Board (PSCB) is in the very preliminary stages of evaluating sites. We will be discussing the site selection and evaluation process at the PSCB's next regularly scheduled meeting, January 11, 2007. I will share your letter with the rest of the PSCB at the meeting. It has not been determined if we will restrict ourselves to sites already owned by a local government or if we will be looking at privately held locations as well. The PSCB will ultimately make site recommendations for both the County and City Commissions to consider.

Again, I appreciate your suggestion and will keep in touch as we move through the process.

Sincerely,

Parwez Alam, County Administrator
Chair, Public Safety Communications Board

CC: The Honorable Chairman and Members of the Board of County Commissioners
Honorable Larry Campbell, Leon County Sheriff
Ms. Anita R. Favors Thompson, City Manager
Walt McNeil, Chief of Police
Tom Quillin, EMS Chief
Cynthia Dick, Fire Chief

MEMORANDUM

Date: June 21, 2006

To: Public Safety Communications Board Members

From: Lillian Bennett, Leon County, Director of Human Resources
Gloria Hall McNeil, City of Tallahassee, Director of Human Resources
Joe McCabe, Leon County Sheriff's Office, Human Resources Manager

Subject: Job Description – Director Public Safety Communications

The attached job description (Attachment #1) for Director, Public Safety Communications has been developed as the result of the combined efforts of the Human Resources Divisions of Leon County, City of Tallahassee, and the Leon County Sheriff's Office. The job description reflects the essential duties of this position. Job descriptions from local governmental agencies throughout the country, with joint communications functions comparable in structure to that which has been adopted for Tallahassee-Leon County, were reviewed and utilized in developing the job description for this position. In addition, each member of the Public Safety Communications Board has been given an opportunity to provide input into the major duties and responsibilities of this position, and each member's comments have been incorporated accordingly.

We surveyed a number of local governments around the country and, through our research, identified six (6) municipal agencies that most closely aligned with the joint communications program model adopted by the Public Safety Communications Board. (A summary of these findings is provided in Attachment #2.) In the six jurisdictions, the reporting structure of the public safety communications function may differ in that the function may be placed under one agency (i.e., Police or Sheriff), serve as a separate joint-powers entity, and/or report to a joint authority, commission or board. Further, some have multi-jurisdictional joint powers or inter-local agreements that guide the operations and administration of the public safety communications center and its personnel.

We also collected market data from the six (6) surveyed entities to establish a salary range for this position. Based on the survey findings, the salary range is $70,522 - $95,632. While the starting salary of the selected applicant would be set based on the applicant's education and experience, it would be reasonable to employ an experienced candidate at a beginning salary of $83,077, the midpoint of the pay range.

Please contact the Human Resource Director for your respective agency if you have any questions regarding the job description for the Director, Public Safety Communications.

Municipal Agencies with Combined/Joint Dispatch/Communications Center

	Alachua County/ Gainesville, FL	Vanderburgh County/ Evansville, IN	Lane County/ Eugene, OR	Stanislaus County/ Modesto, CA	San Mateo County CA	Dakota County, MN
County/ City Population	223,852/ 109,146	173,187/ 117,881	335,180/ 142,185	505,505/ 206,872	699,610	383,592
Number of Employees	76	43	61	64	58	No Staff Yet
Includes	Sheriff Police Fire-Rescue	Sheriff Police Fire	Sheriff Police Fire-EMS	Sheriff Police Fire	Sheriff Police Fire-EMS	Sheriff Police Fire-EMS
Type of Agreement	Interlocal	Dispatch Charter Signed by City & County	Interlocal	Joint Exercise of Powers	Separate Contractual Agreement between County and Cities	Joint Powers Agreement
Responsibility	Sheriff	City	City (Police)	County	County	Joint Powers Entity
Type of Board Executive	Sheriff, Mayor, Member of BCC	8 Members: Sheriff, Fire Chief (2), Police Chief, Reps from City/County Govt.	PSAP User Board: Sheriff, Police Chiefs(3), Reg. Cmdr. State Police, Fire & EMS Chief, Fire Chief Defense Board(2)	Sheriff, City Council Rep., County Supv., City Manager, Mayor, CEO County, County Fire Warden, City Fire Chief, City Police Chief	Reports to Employee & Public Services Department	12 member Board consisting of elected official from each jurisdiction (11 cities & 1 county)

DIRECTOR - PUBLIC SAFETY COMMUNICATIONS DRAFT

MAJOR FUNCTION

This is highly responsible managerial, administrative and professional work directing the operations and resources dedicated to the combined fire, law enforcement, and medical emergency communications functions of the City of Tallahassee, Leon County, and Leon County Sheriff's Office. Reporting to the Public Safety Communications Board, the incumbent is responsible for the effective and efficient management of the Joint City/County Public Safety Communications Center, developing and implementing work and operational policies, managing the dedicated budget and serving as liaison between the Public Safety Communications Board and the member agencies. Work is performed with considerable independence and latitude and is reviewed through conferences, reports, and by results attained.

ESSENTIAL AND OTHER IMPORTANT JOB DUTIES

Essential Duties

Plans, develops, coordinates and directs staff in implementing directives of the Public Safety Communications Board. Manages the daily operations of the Joint City/County Communications Center. Directs the use of resources allocated to public safety communications for maximum return on investment. Serves as liaison between the Public Safety Communications Board and technical staff on technology issues. Develops and implements policies, procedures and protocols to accomplish the center's work plan objectives. Develops short-range and long-range goals for the work unit. Establishes and maintains the operational integrity and response capability of the public safety communications system to meet existing and anticipated requirements. Oversees the acquisition, integration, implementation, and operation of communications equipment, systems, and other resources, as needed. Prepares and monitors the unit's budget, and makes budgetary recommendations to the board, as necessary. Maintains an active liaison with local law enforcement and emergency service providers, as well as other applicable state, federal and local agencies to keep abreast of changes that may impact the center's operations. Establishes and maintains data management system(s) coordinated with law enforcement, fire, emergency medical services, participating telecommunications companies and system suppliers, as applicable. Directs the collection and reporting of data and other information, as required. Manages the development and execution of plans for system testing, employee training, and other essential operational and procedural activities. Recommends the hiring, transfer, promotion, grievance adjustment, discipline and discharge of employees. Conducts performance evaluations and recommends approval or denial of merit increases. Investigates complaints from citizens and/or agencies regarding public safety communications. Maintains appropriate contacts with the media and public on the use of the public safety communications systems. Performs related work as required.

Other Important Duties

Attends meetings of the Public Safety Communications Board as required. Serves on the various management teams as required. Attends meetings, conferences, etc. and completes special projects as needed. Performs related work as required.

DESIRABLE QUALIFICATIONS

Knowledge, Abilities and Skills

Considerable knowledge of ordinances, laws, regulations, statutes, procedures and processes related to public safety communications management. Knowledge of communications systems and the various aspects of system interfacing with other wired and wireless communications. Considerable knowledge of City and County geography and street systems. Knowledge of the principles and procedures of the operations of a dispatch center. Knowledge of local emergency plans and procedures. Considerable knowledge of the principles of supervision, training, and performance evaluation. Ability to follow direction provided by the governing board. Ability to effectively plan, develop, implement and administer a public safety communications program and the dedicated resources. Ability to conduct system analysis and evaluate operational and technical processes and procedures. Ability to communicate effectively, orally and in writing, and to maintain records and prepare reports. Ability to establish and maintain effective working relationships as necessitated by the work. Ability to accurately assess and analyze situations and draw conclusion(s). Ability to plan, organize, direct and coordinate activities of technical and professional staff. Skill in the use of personal computers and associated programs and applications necessary for successful job performance.

Minimum Training and Experience

Possession of a bachelor's degree and five years of professional work experience that includes emergency or public safety communications for law enforcement, fire and EMS agencies, emergency management, emergency response management, or a closely related field; or an equivalent combination of training and experience. At least three years of the required experience must have been in a managerial capacity.

Necessary Special Requirement

Must possess a valid Driver's license at the time of appointment. Position requires on-call status in the event of an emergency or disaster within Leon County and may require work or travel outside of regular office hours.

Established:

CITY OF TALLAHASSEE

Request for Proposal Specifications
700/800MHz Digital Trunked Radio Network

DRAFT

City of Tallahassee/Leon County, Florida

Request for Proposal Specifications
700/800MHz Digital Public Safety Radio Network

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CITY OF TALLAHASSEE/LEON COUNTY, FLORIDA

Request for Proposal Specifications
700/800MHz Digital Public Safety Radio Network

1.0 GENERAL PROPOSER RESPONSE PROVISIONS

1.1 **Purpose**

This Specification encompasses a turnkey project to provide the City of Tallahassee and Leon County, Florida with a new 800 MHz digital simulcast trunked radio network capable of meeting current and future communication needs, both reliably and functionally. The City of Tallahassee, Florida and Leon County's public safety radio communications system management are governed by a combined Public Safety Communications Board (PSCB), which includes agency and administrative representatives from both the City and County. City/County public safety agencies, as well as all governmental departments, are utilizing PSCB's shared 800MHz 22-channel simulcast trunked radio system that, while conforming to APCO Project-16 functionality objectives, is of a proprietary analog technology that is incompatible with other vendor radio solutions.

A key desire of PSCB is to transition away from such proprietary solutions and to embrace new, emerging radio technology that is in full compliance with Industry-recognized open standards. A second, critically important aspect of this communications network procurement involves infrastructure reliability and hardening in response to heightened terrorism activities, worldwide, and to regional natural and environmental hazards such as hurricanes and tornadoes.

This Specification defines key functional and technical aspects of a standards-based enhanced digital radio communications network, aligned toward full Project-25 compliance within a fixed time period. Public Safety agencies that will immediately utilize this new digital radio network include the City of Tallahassee Police Department, Leon County Sheriff's Office, Leon County EMS and City/County Fire Services. It is envisioned that

other, non-public safety agencies will likewise participate in this new digital radio network.

PSCB recognizes that the most important aspect of any public safety radio network is coverage reliability coupled with clearly understood audio quality delivered to users throughout their various working environments. PSCB appreciates the need for Proposers to have adequate flexibility in these Specifications, such that proposed solutions can be technically optimized to meet user desires and coverage expectations. Accordingly, this Specification does not define a required use of any specific 800 MHz antenna site placement, antenna system hardware or minimum number of sites to achieve the desired coverage performance. That is, these Specifications are designed to functionally describe user expectations, reliability and the PSCB's desire for near-term APCO Project-25 infrastructure compliance.

Interoperability between PSCB first responders and other adjacent Florida jurisdictions, including State of Georgia border agencies, is another area of concern that is addressed by these Specifications. The State of Florida enjoys a number of communication networks supportive of wide-area interoperability goals. One such network is Florida's Statewide Law Enforcement System, termed SLERS. Another innovative approach to wide area interoperability is the State's ongoing construction of VHF/ UHF/ 800 MHz mutual aid gateway infrastructures. This new Florida Interoperability Network (FIN) addresses the urgent need for effective cross-band communications, which is a problem rooted in the very makeup of both rural public safety communication facilities and federal disaster response capabilities.

PSCB is also aware that the voluntary development and user adoption of APCO Project-25 open-standards has been a laboriously slow one. APCO Project-25 standards development commenced nearly seventeen years ago and has only recently achieved the ratification of switch interconnectivity standards for networks. Additionally, it is recognized that

final development of narrowband Project-25 Phase-II 6.25KHz specifications is several years from completion.

Due in large part to the protracted development of Project-25 standards, vendor development of high-capacity voted/simulcast Project-25 infrastructure solutions (necessary to provide reliable in-building portable radio support) has been slow and has not achieved the same degree of competitive availability as exists for VHF/UHF conventional Project-25 needs. Fortunately, the federal government's desire for all military and federal agency radio networks to transition to Project-25 narrowband technologies has fueled both the standards-completion process and has accelerated development of complex network infrastructures, inclusive of simulcast technology, by the radio vendor community.

Following the federal government's lead, it is perceived that significant and tangible improvements to local-area 800MHz operations as well as wide area interoperability can be achieved, minimally, through the application of Project-25 technologies. This Specification addresses those functional, operational, and to a limited extent, technical requirements for PSCB's envisioned new Project-25 digital radio communications network.

1.2 Instructions

This Specification is a complete document and must be returned intact as well as any addenda, which are released subsequent to the issuance of this Specification package. The RFP Authorization Form in Section 16 must be completed. The Appendices do not need to be returned. All responses and attachments should be placed into the RFP Response immediately behind the page, on which the information was requested, in the form of a point-by-point response. Supplementary material may not be substituted for direct responses to questions.

If supplementary materials are inserted, each inserted page must be labeled in the bottom margin with the number of the Specification page

behind which it is being placed. If more than one page is inserted behind a particular Specification page, then each must be labeled with the appropriate page number plus a letter designator, e.g. 121a, 121b, 121c, etc.

1.2.1 Procurement Process

PSCB has determined that the procurement of a high technology 800 MHz trunked radio network shall be accomplished by response to these Specifications rather than through the receipt of unsolicited proposals. **Responses in the form of a unsolicited proposal or of a type that offer technology solution approaches other than those ultimately resulting in minimally a Project-25 Phase I compliant network will be rejected without further consideration.**

Proposer Responses must be adequate to cover all expenses related to compliance with all applicable requirements of this Specification. Any related costs, direct or indirect, must be clearly identified in the Proposal Response. All cost related to the preparation or submittal of the response to this Specification is the responsibility of the Proposer.

1.2.2 The Proposal Process

1.2.2.1 Proposal Release

The Proposal will be publicly advertised and released in accordance with applicable City of Tallahassee/ Leon County Procurement policy and State of Florida laws and shall include the notification of the time and place when and where the Proposal is due. Additionally, these Specifications may be directed to those businesses that are known to be a potential offerer of goods or services of the type required.

1.2.2.2 Pre-Proposal Conferences

PSCB and Consultant will hold one mandatory Pre-Proposal Conference with potential Proposers concerning the requirements. This Conference will be held at the City of Tallahassee's City Hall (Tallahassee Room) at a date and time to be determined. Any verbal agreements or representations made at this Conference or at any other time during the Proposal period will not be binding on PSCB. Official statements concerning the Proposal will be issued in writing as an RFP Specification Addenda.

1.2.2.3 Proposal Questions

If during the review or preparation of the Proposal submittal, a Proposer discovers any errors, omissions or ambiguities, they should submit, in writing, their questions to the Consultant. Written questions that are submitted at least 48 hours in advance of the Pre-Proposal Conference will be addressed during the Conference. Written questions submitted after this time period will be addressed in a written addendum to the City of Tallahassee Procurement Department, forwarded to the Consultant and if received by the Consultant at least seven days prior to the Proposal Submission Date. Direct contact with any PSCB public safety or local government departments concerning this Proposal must have prior approval as identified in Section 1.9.

Failure to follow this contact procedure may result in Proposer disqualification.

1.2.2.4 Late Proposal Submission

Any Proposal Response submitted after the specified submission due date and time, as publicly advertised, will not be accepted and will be returned unopened to the submitting organization. Any Proposal Response may be

withdrawn by the Proposer prior to the scheduled Proposal Submission Date.

1.2.2.5 Proposal Submittal

All copies of the Proposal, in the indicated quantities and including all requested materials, should be provided to the address listed below by the date specified in Proposal Advertisement or as may be amended by addendum:

City of Tallahassee Procurement
300 South Adams St.
Tallahassee, Fl. 32301
(850) 891-8282

Proposal Response submittals shall be valid for a period of one hundred and twenty (120) days after Proposal submission date. Exceptions taken on any part of the stated functional or operational requirements, particularly to those that directly relate to coverage reliability and delivered audio quality, may disqualify the Proposer.

1.2.2.6 Proposer Qualifications

PSCB reserves the right to discontinue consideration of a Proposer's submittal if information requested on the Proposer's ability to perform is not submitted or is otherwise unacceptable. PSCB may, at any time prior to Contract Award, request proposal clarification information submitted on other similar systems or the specific hardware/software solution. Proposers shall not be allowed to enhance, add/remove services or otherwise alter their proposal configuration submittal beyond that described in their initial Proposal response.

PSCB may enter into discussions with qualified Proposers concerning their submission during the proposal evaluation process. These

discussions will be closed to third parties including other Proposers, unless such discussions are prohibited by the State of Florida's Sunshine Law. During these discussions, clarifications or minor corrections to their Proposal Submittals, with the exception to price charges, will be considered, as appropriate, within City of Tallahassee Procurement Policy.

Proposer(s) may be disqualified if there is reason to believe that: some form of collusion exists between Proposers; the Proposer is involved in litigation with the City of Tallahassee or Leon County; and the Proposer is not performing on another contract of similar scope or has previously defaulted on another City/County contract, within the last five years.

1.2.2.7 Recommendation

After all qualified Proposals have been evaluated, the Consultant and the Technical Services Committee (TSC) will provide to PSCB an evaluation of all responsive proposals and a written recommendation. Proposal response submittals will not be publicly released until PSCB has authorized the granting of a Contract to the responsive and best Proposer.

1.2.2.8 Contract Award

Upon notification of Contract Award, the Contractor shall provide Performance and Payment Bonds and Proof of Insurance as set forth herein. Failure to provide the required bonds or proof of insurance within ten (10) days after notification of Contract Award shall entitle PSCB to rescind the award and retain any Proposal security. If PSCB then must re-advertise the project because of this failure to timely execute the Contract, the defaulting party shall not be eligible to submit a subsequent Proposal response.

PSCB shall authorize award of the Contract to the best responsive Proposer that is compliant with these Specifications. No Contract shall be binding on PSCB until it has been approved as to form by the

City/County's Legal Counsel and executed by both responsible parties (PSCB and Contractor).

A Pre-Construction Conference will be held at which time all required Contractor documents must be submitted. Upon PSCB approval of these documents, a Notice to Proceed will be issued to the Contractor.

1.2.2.9 Proposal Response

The Proposal Response shall be divided into three sections: Technical, Infrastructure Pricing and User Equipment Pricing. Ten (10) copies of the Technical Response and four (4) copies each of the Infrastructure and Subscriber Equipment Pricing Responses are to be submitted. The Pricing Responses shall be separated from the Technical Response and independently sealed.

Each Proposal Response shall be submitted in standard 8 1/2" x 11" three ring binders. The entire Response package must be submitted in a sealed container addressed to: City of Tallahassee Procurement; 300 South Adams St.; Tallahassee, Fl. 32301 and identifying the title and RFP Number of the procurement. The time and date of the Proposal Opening must be plainly marked on the container as well as the Proposer's name, address and Florida Contractor's License Number. All Proposal Responses should be delivered by hand, with receipt requested, or by certified or registered mail. All Proposal Responses become property of PSCB. A cover letter transmitting the Proposal Response must accompany the package.

1.2.2.10 Proposal Evaluation and Selection by Consultant

Technical and Pricing Proposals shall be evaluated separately using a weighted point system whereby out of a maximum 100% Overall Project Score, 70% shall be allocated to Technical Proposal evaluation scores

with 30% being allocated and equally shared between Infrastructure and Subscriber Equipment Price Proposals.

Technical Proposals will first be evaluated for overall responsiveness and completeness to the RFP Specifications. Proposals that are determined responsive and complete will be evaluated by the Consultant.

Technical Proposals will be graded in the following areas, listed in relative order of importance, with respect to the requirements as outlined in this RFP:

1. Performance, compatibility, expansion capabilities and versatility (30%).

2. Reliability, redundancy and warranty (18%)

3. Proposer qualifications, history of product support and RFP deviations (10%)
4. Equipment repair, installation, and implementation (10%)

5. Interoperability (15%)

6. Training (7%)

7. Maintenance and time limit of availability of service parts (6%)

8. Organization, scope and detail of proposal (4%)

The scored results of this Technical Evaluation will be multiplied by 0.70, thereby yielding a weighted technical project-total score. The results of this portion of the Evaluation shall be submitted to the PSCB.

At the direction of the PSCB as to the suitability and acceptability of the Technical Evaluation Results, the Consultant, at the direction of PSCB will

next open and evaluate proposed costs for each responsive Technical Proposal.

The relative cost differences between responsive Cost Proposals shall be compared and evaluated. Each of the two Infrastructure and Subscriber Equipment Cost Proposals received from responsive Proposers shall be have their individual evaluation raw scores multiplied by 0.15 and those two portion results added together and with the Technical Evaluation score, thus yielding an Overall Project Score for each Proposer's Submittal. That Proposer Submittal receiving the highest Overall Project Score shall be recommended by the Consultant as being the most responsive, best proposal. In the case of a tied Overall Project Score, the Consultant shall recommend that Proposal Submittal having the highest Technical Proposal evaluation score.

1.2.2.11 Total Costs

PSCB reserves the right to evaluate total project price on the basis of initial cost and life cycle analyses. Any deviations by Proposers from the pricing requirements herein shall be approved in advance of Proposal Submittal or they will be construed as being non-conforming and the Proposal Submittal will not be given further consideration.

1.3 Definitions

Definitions as used herein:

(a) Proposer:
Any organization, company, vendor, or supplier responding to this specification.

(b) Contractor:
The Proposer to whom a Contract is awarded.

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(c) Proposal, Proposal Response, Submittal:
Correspondence or material furnished by Proposers in response to this specification.

(d) Public Safety Communications Board, PSCB:
System Owner/Client

(e) Tusa Consulting Services, TCS or Consultant:
909 Poydras Street, Suite 2150
New Orleans, Louisiana 70112
(504) 586-1725, Telephone
(504) 586-1846 Fax

(f) City of Tallahassee Radio Communications Division, RCD

1.4 Proposer Standards

The Proposer must have manufactured, delivered and installed at least five radio systems of equivalent technology (800MHz IMBE digital voice simulcast transmit/receiver voted) having comparable size and scope. These five systems shall be described with enough information that PSCB or its Consultant can reasonably determine their project equivalency. The Proposer shall prepare a summary report for a minimum of three of the installed and fully operational systems that best emulates that being proposed for PSCB. These reports should include a detailed summary of the system and its significant operational features/components as well as a current customer contact including name, address, and phone number, title, department and system responsibility.

Radio spectrum allocations now occupied by commercial television broadcast interests within the 700MHz band will become available solely to public safety operations on February 17, 2009. Proposers will likewise be required to provide sufficient information necessary to support claims that both proposed infrastructures and user equipment will be functionally

and operationally compatible with these new channels (764-767MHz and 773-776MHz, paired with 794-797MHz and 803-806MHz, respectively). Failure to propose equipment capable of operations on this new spectrum shall be considered non-responsive and that proposal submittal shall be given no further consideration.

A factory authorized service center that is fully staffed and trained to support the proposed infrastructure network, and all related subsystem equipment, must be located within Leon County, Florida to be considered adequate to satisfy initial installation, implementation, optimization, warranty and ongoing maintenance needs. The Contractor and all subcontractors, if any, must be able to legally conduct business within the State of Florida.

The following standards shall apply, as a minimum, to all equipment, installation methods and materials:

A. EIA/TIA–Electronic/Telecommunications Association
B. NEC - National Electric Code
C. NEMA - National Electrical Manufacturer's Association
D. IEEE - Institute of Electrical and Electronic Engineers, Inc.
E. FCC - Federal Communications Commission
F. FAA – Federal Aviation Administration
G. NFPA – National Fire Prevention Association
H. Building Codes for Leon County, Florida
I. Building Codes for City of Tallahassee, Florida
J. OSHA - Occupational Safety and Health Administration

1.5 Workmanship

All workmanship must conform to normal and accepted standards for the telecommunications industry and will be thoroughly examined by PSCB Representatives, RCD and its Consultant at various stages during project implementation and before final network acceptance. All fixed site

equipment, including electronic communications infrastructure, dispatch consoles; alarm system consoles, network management consoles, electrical wiring, towers, antennas, mounts etc. must be installed by or under the supervision of the Contractor.

The Contractor must completely remove and properly dispose of residue due to its work, return the site to a useable state and will be responsible for the cost of repairing all damage caused by the Contractor or its Sub-Contractors during network installation.

PSCB and its Consultant reserve the right to halt the installation process due to poor workmanship, housekeeping, scheduling, work interruptions, etc. Work halts that have resulted from poor workmanship shall not relieve the Contractor of their responsibility to conform to the installation time requirements as stated in this Specification.

1.6 Materials

All equipment, except with the expressed written permission of PSCB and its Consultant, must be new and unused, meet telecommunications industry standards, and, where applicable, be registered with and approved by the Federal Communications Commission. PSCB or its Consultant reserves the right to reject and require the return, at the Contractor's expense, of any and all components which are defective or fail to comply with this Specification. Such rejections and/or returns will neither validate nor invalidate the remainder of the Contract. Rejections of material for cause shall not provide an extension of time to the Contractor.

1.7 Sub-Contractors

It is intended that a single Contractor have total turnkey responsibility for the project so as to assure a fully operational network. Therefore, any Proposer desiring to use Sub-Contractor(s) must include within their Proposal Response a list and description of the qualified Sub-

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Contractor(s). PSCB may require documentation and references to ensure the qualification of a Sub-Contractor. The Sub-Contractor(s) cannot be changed after submission of the Proposal Response except with the written permission of PSCB. Changes in Sub-Contractors shall not provide an extension of time to the Contractor.

1.8 Premises Visits

Proposers, before submitting a Proposal Response, may desire to visit selected public safety premises in order to familiarize itself with conditions, which may affect the work. PSCB, it's designated local representative RCD or the Consultant will coordinate access and escort to the various sites. If more than one visit to a site is requested and time allows, PSCB designee will make the necessary arrangements.

Proposers must indicate any special requirements, i.e., architectural, mechanical, electrical, civil or structural modifications, that their equipment may need at either County-owned, City-owned or non City/County-owned locations that are intended to be utilized.

The costs for these special requirements shall be disclosed in the Proposal Submittal as this is a **turnkey project** whereby the costs to furnish and install the proposed network infrastructure are fixed to the Proposal amount.

1.9 Contact

All contact and inquiry concerning this Specification shall be directed to:

Dominic F. Tusa
Tusa Consulting Services, LLC
909 Poydras Street Suite 2150
New Orleans, Louisiana 70112
Phone (504) 586-1725

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FAX (504) 586-1846

All contact requiring PSCB input shall be directed to:

Don DeLoach, Technical Subcommittee Chair,
City of Tallahassee, ISS
300 South Adams St.
Tallahassee, Fl. 32301,
(850) 891-8402.

1.10 Notification

Proposers will be notified of PSCB's selection according to City of Tallahassee Procurement Policy.

1.11 Installation

1.11.1 Project Time Frame for Completion

The Project's time frame for completion is **eighteen months** from the Notice to Proceed. The Project will not be deemed completed until a *fully-compliant* Project-25 simulcast infrastructure has been installed, all system functionality, audio quality and mandatory coverage testing has satisfactorily been completed to the reasonable satisfaction of PSCB and their Consultant and a Certificate of Substantial Completion has been issued by PSCB.

1.11.2 Installation Delays

If, at any time after the Contract Award, the Contractor becomes aware of any problems that may result in a delay in completing installation and system acceptance, the Contractor must immediately notify the designated PSCB Representative and the Consultant by telephone, with

confirmation in writing, citing the cause, probable effect and potential time delay durations with recommendations for alternative action. This paragraph does not relieve the Contractor of contractual responsibilities; however, failure to notify promptly will be a basis for determining the Contractor negligent of an otherwise excusable delay.

1.11.3 Installation Damage

The Contractor shall be responsible for the repair of any damage to City/ County property caused by the Contractor or its Sub-Contractors during installation, implementation, optimization, maintenance, or de-installation of any equipment or services.

1.12 Training

PSCB considers training to be of paramount importance. User and dispatcher training shall be completed on-site by the Contractor's personnel. Dispatcher training shall be more extensive than user training and will involve all designated regular and relief dispatchers employed by the City, Sheriff's Office, County, and Universities at the time of system operational testing.

The Contractor shall provide administrative training for two (2) Communication Managers. Software training shall be provided which will enable these personnel to perform functionality/feature changes to fixed site equipment and portables/mobiles; poll the network diagnostics; perform traffic and feature usage studies; etc.

The Contractor shall provide comprehensive maintenance training whereby City Radio Communications Division (RCD) service/support personnel are qualified in the proper diagnostic, maintenance and repair service skills needed to quickly resolve 800MHz communications equipment malfunctions as well as microwave backhaul operational problems. The Contractor shall provide operational and full maintenance

training for all RCD personnel, either on site or at remote factory locations. This level of training will be essentially equivalent to the level of service training required by the Contractor for its proposed Maintenance Providers. Additionally, the Contractor shall develop and train RCD personnel in those aspects of maintenance necessary to ensure the highest availability and reliability of infrastructure and subscriber equipment resources. Preventative maintenance training shall encompass all elements of supplied infrastructure equipment, inclusive of standby generator equipment, battery plants, battery charging systems, tower light systems, site grounding systems, alarm systems and all other subsystems directly or indirectly related to infrastructure reliability and operations.

The Contractor shall be responsible for all direct or indirect costs of user, dispatcher, maintenance personnel and communications manager training, such as meeting rooms, travel, lodging and transportation as necessary for City/ County personnel.

The Contractor agrees that the Consultant and appropriate PSCB personnel will be permitted to observe user equipment installation, network implementation and all optimization/testing phases.

The Contractor agrees that, upon network system acceptance, designated PSCB maintenance personnel shall be provided with security and access codes, which will allow PSCB to make routine operational changes and conduct radio profile maintenance. The Contractor shall continuously and within a reasonable time frame notify PSCB of any computer and radio network software code revisions and any recommended equipment modifications. All such code revisions, upgrades and modifications shall be automatically incorporated into the project, up through the commencement of formal acceptance testing.

The Contractor shall coordinate with PSCB all training sessions. All training must be approved by the City, Sheriff's Office and County. Dispatch, users/operators, maintenance personnel and network manager

follow-up training shall be provided and scheduled no more than ninety (90) days after network acceptance for the purpose of training reinforcement.

1.13 Parallel Implementation

The new network must be installed in a parallel implementation. That is, infrastructure equipment will be fully installed and operationally ready before the existing analog voice system can be relocated, reallocated or decommissioned. The current analog system is the only Public Safety Voice communications system and must operate 24/7/365. No interruptions in service of any duration may be allowed without prior approval of the PSCB or their designee. Therefore, fully duplicated voice radio systems will coexist for some period of time. The period of time of parallel installation will be used to perform testing of operational functionality of the entire network, dispatch consoles, mobiles, portables, network features, high capacity receiver-voting and simulcast transmitter operations. After the new network has been tested on a subset of radio channels and later accepted, the Contractor must remove the existing system equipment, inclusive of any surplus antenna system components, as directed by the PSCB designee.

Since existing dispatch console equipment will potentially control the old system during the parallel phase, the Contractor is responsible for developing a plan to accommodate both existing and proposed systems during the parallel and transitional periods of installation and implementation.

1.14 Manufacturer Support

Proposers shall provide a letter from sub-system manufacturer(s) which guarantees manufacturer's support in the case of any conditions or problems which can not be remedied by the Contractor or in case the Contractor defaults on its warranty and/or maintenance agreements.

1.15 Parts Availability

The Proposer shall provide written guarantee that all proprietary backbone components and repair parts shall be available for at least ten (10) years from the date of network acceptance. End user equipment (i.e. portables, mobile, etc.) repair parts shall be available for at least five (5) years from the date of cessation of equipment manufacturer.

Proposers shall fully disclose the end-of-life status of each major equipment grouping proposed in response to this Specification. That is, end- of-production dates should be provided, minimally, for base stations, microwave radios, network controllers, power supplies, dispatch consoles, audio switches, simulcast optimization subsystems and all models of user equipment. It is the intent, to the maximum extent possible, for PSCB to avoid the purchase of any network equipment that is nearing (within 24 months) the end of its production cycle.

1.16 Warranty of Network Performance

In submitting their Proposal Response, the Proposer acknowledges that it has carefully reviewed the functional requirements and warrants to PSCB that the 800MHz P-25 radio network installed shall function according to equipment specifications, industry standards and the minimum operative characteristics specified in Sections 4.0 and 5.0 of this Specification.

The Contractor is further responsible for providing radio network coverage as specified in Section 7.0. All costs incurred in order to comply with the functional, operational and technical requirements of this Specification shall be the responsibility of the Contractor.

1.17 Remedies

Remedies shall be negotiated with the apparent responsive and best Proposer, as part of contract negotiations.

1.18 Contracts

This Specification and the Proposer's Response will be an integral part of the Contract. Any and all statements made in the Proposal Response will automatically become part of the final Contract for equipment and services. Inability to contractually guarantee any statement made in their Proposal Response will result in Proposer disqualification.

Omission in the Proposal Response of any equipment, services or provisions herein prescribed shall not be construed so as to relieve the Contractor of any responsibility or obligation necessary to the complete and satisfactory installation of any and all systems, equipment, and services specified. The network price and any optional prices quoted must include all equipment, service, features, materials, labor, etc. necessary to make all the features, services, and equipment, which are included, fully functional. The Proposer agrees that the cost of additional equipment, materials, or labor necessary to meet these requirements, which was not otherwise calculated in his Proposal Response, shall be solely at the Contractor's expense.

Each Proposal Response must be signed by a duly authorized officer who is empowered to contractually bind the Proposer.

PSCB shall enter into contract negotiations with the apparent responsive and best Proposer. Should PSCB be unable to negotiate a Contract with the apparent responsive and best Proposer, PSCB may exercise the right to enter into Contract negotiations with the apparent responsive Proposer having the next-highest evaluation score.

1.19 Non-Appropriation of Funds

In the event no funds or insufficient funds are appropriated and budgeted by the City/County or are otherwise unavailable for fulfilling the requirements of the Contract, the obligations of PSCB shall terminate on the last day of the fiscal period for which appropriations are received without penalty or expense to the City, County and PSCB of any kind whatsoever. PSCB will immediately notify the Contractor or its assignee of such occurrence. In the event of such termination, PSCB agrees to peaceably surrender possession of the equipment to the Contractor or its assignee on the date of such termination. The Contractor will be responsible for packing all equipment and any freight charges. PSCB will not cancel if any funds are appropriated to it, or by it, for the acquisition, retention or operation of the equipment or other equipment performing similar functions for the current fiscal period in which the termination occurs or the next succeeding fiscal period thereafter and that it will not during the funding period give priority to other functionally similar equipment or services. The Contractor shall covenant and agree to indemnify and hold the City, County and PSCB harmless against any loss, damage liability, cost, penalty or expense, including attorney's fees, which it is not otherwise agreed to by PSCB in the equipment Contract and which is incurred and arises upon a failure of PSCB to appropriate funds in the manner described herein for a continuation of the Contract or exercise of the option to purchase the equipment.

1.20 Acceptance

Acceptance testing procedures shall be negotiated with the apparent responsive and best Proposer as part of Contract negotiations.

1.21 Purchase Payment Schedule

The following payment schedule shall apply:

10% - at Contract execution

35% - at delivery of and inventory by PSCB designee of network infrastructure components to PSCB designated location(s)

15% -upon infrastructure installation completion

10% -upon satisfactory completion of audio quality and range coverage testing

15% -upon issuance of subscriber equipment and satisfactory completion of all training

15% - upon Final System Acceptance.

The Proposer agrees that all prices quoted in its Proposal Response are valid for one year from the Contract execution date. Future price discounts are valid for the time periods indicated in Section 16.

1.22 Right of Refusal

PSCB reserves the right to reject any and all Proposals received. Acceptance of any Proposer's Response will not place PSCB under any obligation to accept either the lowest priced or most technologically advanced response.

1.23 Contractor's Insurance

The Contractor shall be responsible for any and all loss of material connected with the construction due to unexplained disappearance, theft or misappropriation of any kind or nature. The foregoing provisions shall not operate to relieve the Contractor and any Subcontractors of

responsibility for loss or damage to their own or rented property or property of their employees of whatever kind or nature, including but not limited to tools, equipment, forms, scaffolding and temporary structures including their contents. PSCB shall in no event be liable for any loss or damage to any of the aforementioned items or any other property of Contractor and any Subcontractors, which is not included in the permanent construction. The Contractor and any Subcontractors hereby waive any right of recovery they may have against PSCB for damage or destruction of property of whatever kind or nature whether it is their own property or property of their employees.

The Contractor shall procure and maintain for the duration of the Contract the following insurance policies as mandated by and with minimum limits set by the City of Tallahassee Procurement Policy with coverage for occurrences and claims that may arise from or in connection with the performance of the obligations hereunder by the Contractor, its agents, employees, representatives and subcontractors:

1. A policy or policies to insure the Contractor for legal liability on account of personal injury (including death resulting wherefrom) or loss of or damage to property however arising in the execution of this Contract and specifically including explosion, collapse, and underground damage. The combined liability limits shall not be less than $1,000,000. This insurance shall include coverage for (a) Premises - Operations; (b) Broad Form Contractual Liability; (c) Products and Completed Operations; (d) Use of Contractors and Subcontractors; (e) Personal Injury; (f) Broad Form Property Damage. "Claims made" form shall not be acceptable. The "occurrence form" shall not have a "sunset clause".

2. The policy or policies for this combined liability shall also include products/completed operations liability for one year after completion of the work and acceptance by PSCB.

3. A policy to cover the full liability of the Contractor in accordance with the provisions of the Worker's Compensation Law of the State of Florida. The Contractor shall also maintain employer's liability coverage with limits of not less than $1,000,000 per year. The Contractor shall also obtain from its Workers' Compensation Insurance carrier a waiver of subrogation in favor of PSCB.

4. The Contractor will provide evidence of automobiles liability coverage for owned, non-owned and/or hired vehicles in limits not less than $1,000,000 combined single limit per occurrence for bodily injury and property damage.

The policies or certificates evidencing the coverage provided above shall be submitted at a Pre-Construction Conference prior to commencing any work or PSCB issuance of a formal Notice to Proceed. Such policies or certificates shall provide that insurance will not be materially altered or cancelled without thirty (30) days prior written notice to PSCB.

1.23.1 Other Provisions

The insurance policies required by the Contract shall contain, or be endorsed to contain, the following provisions:

1. PSCB, its officers, agents, servants and employees of the City of Tallahassee and Leon County and the Leon County Sheriff's Office shall be added as "additional insureds" under the Comprehensive General Liability and Automobile Liability Coverages.

2. The Workers' Compensation and Employer's Liability coverages shall contain an express waiver of all rights of subrogation against PSCB, its officers, agents, servants, and employees, for losses arising from work performed by the Contractor for PSCB.

3. All insurance policies required by this Contract shall be endorsed to state that coverage shall not be suspended, voided, cancelled by either party, or reduced in coverage or in limits except after thirty (30) days prior written notice by certified mail has been given to PSCB.

1.23.2 Acceptability of Insurers

All insurance required by this Section shall be placed with insurers that are authorized to do business in the State of Florida and have a rating of no less than A- in the most current edition of the A.M. Best Insurance Report. Insurers shall have a minimum financial size category of VIII according to A.M. Best.

1.23.3 Certificates of Insurance

The Contractor shall furnish to the PSCB Certificates of Insurance affecting coverage required by this Contract. The certificates are to be signed by a Florida licensed agent authorized by that insurer to bind coverage on its behalf and endorsements. The certificates and endorsements must be received and approved by PSCB prior to the Contract's effective date.

1.24 **Indemnity**

Indemnity shall be negotiated with the apparent responsive and best Proposer as part of Contract negotiations.

1.25 Performance and Payment Bonds

A Performance Bond in the amount of one hundred percent (100%) of the Contract Price shall be provided by the Contractor in the event the Proposer is awarded a contract. The Performance Bond shall be exercised by PSCB for failure of the Contractor to perform according to the terms of the Contract and this Specification.

A Payment Bond in the amount of one hundred percent (100%) of the Contract price shall be provided by the Contractor. The Payment Bond submitted must be from a surety company authorized to do business in Florida with a rating of A- or better in the most current edition of the A.M. Best Insurance Report. The Payment Bond must be countersigned by a Florida licensed agent authorized to represent the surety company writing the Payment Bond. That agent's power of attorney must be attached to the Payment Bond submitted.

The cost of these Performance and Payment Bonds are the responsibility of the Contractor.

Bonds shall be executed on statutory forms acceptable to PSCB under the policy of City of Tallahassee Procurement. They shall be maintained in force through completion of the work and its acceptance by PSCB and the Consultant. They shall guarantee the Contractor's remedying any defects and damages due to faulty workmanship and/ or material for one year after the date of Final System Acceptance.

The Surety Company issuing bonds in connection with this project must be approved by the client and authorized to do business in the State of Florida. All bonds must be presented prior to Contract execution.

1.26 Certificate of Ethics

Proposers are required to provide a Certificate of Ethics acceptable to the City of Tallahassee Procurement policy stating that no commission or any other compensation has been or will be paid to Consultant or to PSCB or its employees in regards to the selection and purchase of this radio communications network.

1.27 Proposal Pricing Summary Sheets

Proposers shall provide detailed price breakdown submittals for infrastructure and subscriber equipment items, system integration/project management and installation/engineering services. Additionally, Proposers shall furnish a Proposal Summary Sheet for each of the two required Price Proposals. The entries on the Proposal Summary Sheets must agree with the same entries provided elsewhere in the Proposer's Response to these Specifications. In the event of any discrepancies, and not as a result of simple arithmetic of submitted prices, the lowest figure will prevail. Any errors or omissions in submitting pricing for the equipment or services shall be the responsibility of the Proposer.

1.28 Non-Collusion Affidavit

If the following affidavit on Page 28 is not properly executed and notarized, your Proposal Response will not be considered:

NON-COLLUSION AFFIDAVIT

STATE OF_____

COUNTY OF_____

_____, Being first duly sworn, deposes and says that:

(1) Executor is (Owner) (Partner) (Officer) (Representative) or (Agent), of _____, the Proposer that has submitted the attached Proposal Response:

(2) Such Proposal Response is genuine and is not a collusive or sham Proposal:

(3) Neither the said Proposer nor any of its officers, partners, owners, agents, representatives, employees or parties of interest, including this affiant, has in any way colluded, conspired, connived or agreed, directly, or indirectly with any other Proposer, firm or person to submit a collusive or sham Proposal in connection with the Contract for which the attached Proposal Response has been submitted or to refrain from proposing in connection with such Contract, or has in any manner, directly or indirectly sought by agreement or collusion or communication or conference with any other Proposer, or to fix any overhead, profit or cost element of the Proposer price or the Proposer price of any other proposer, or to secure through any advantage against the City of Tallahassee/ Leon County, Florida or any person interested in the proposed Contract; and

(4) The price or prices quoted in the attached Proposal Response are fair and proper and are not tainted by any collusion, conspiracy, connivance or unlawful agreement on the part of the Proposer or any of its agents, representatives, owners, employees, or parties in interest, including this affiant.

_____

Subscribed and sworn to, this _____ day of _____, 200____.

1.29 Brokerage Fee

The Contractor warrants that he has not employed any person to solicit or secure this Contract upon an agreement for a commission, percentage, brokerage or contingent fee. Breach of this warranty shall give PSCB the right to terminate the Contract, or, at the discretion of PSCB, to deduct from the Contract price or consideration, the amount of such commission, percentage, brokerage or contingent fee. This warranty shall not apply to commissions payable by contractors upon contracts or established commercial or selling agencies maintained by the Contractor for the purpose of securing business. No elected official or employee of the City of Tallahassee, Leon County or PSCB shall be permitted to share any part of this Contract or any benefit that may arise wherefrom, and any contract made by PSCB in which such individual(s) shall be personally interested shall be void, and no payments shall be made thereon by PSCB or any officers thereof.

1.30 Conflict of Interest

In the interest of ensuring that efforts of the Contractor do not conflict with the interests of PSCB, and in recognition of the Contractor's professional responsibility to PSCB, the Contractor agrees to decline any offer of employment if its independent professional work on behalf of the City or County is likely to be adversely affected by the acceptance of such employment. The initial determination of such a possibility rests with the Contractor. It is incumbent upon the Contractor to notify PSCB and provide full disclosure of the possible effects of such employment on the Contractor's independent, professional work on behalf of PSCB. Final decision on any disputed offers of other employment for the Contractor shall rest with PSCB.

1.31 Corporate Resolution

Proposal Response submittals must contain a Corporate Resolution or Power of Attorney authorizing and identifying agents to sign their Proposal or other documents as required by this Specification, PSCB, City of Tallahassee Procurement or the State of Florida. This Corporate Resolution or Power of Attorney must be certified and notarized.

2.0 EXISTING PUBLIC SAFETY RADIO NETWORK

2.1 General

The City of Tallahassee is Florida's Capitol City, the seventh-largest city in the state, and is located within Leon County. In 2003, the City's population was estimated to be 153,000 where Leon County's population was estimated to be 250,100. The City of Tallahassee is also home to two major universities, Florida State and Florida A&M, as well as the Tallahassee Community College.

Prior to 1996, the City's public safety agencies operated a legacy UHF conventional radio network. In 1996, Motorola commenced construction of an APCO Project-16 800MHz trunked/simulcast radio system. Construction of the initially-contracted four-site, 13-channel system was completed and formally accepted in April of 1998, providing trunked voice communications for the City's then-1889 radio users. The system was next augmented with the addition of the 8-channel Motorola RD-LAP 19.2kB mobile data solution in June of 1998, thereby completing a voice/data radio network.

Prior to the selection of Motorola in 1996, the City solicited vendor proposals for its envisioned trunked radio network. The two principal vendors of 800MHz trunked/simulcast systems at that time, Motorola and Ericsson, presented differing solutions. Motorola structured its proposal using a 4-site Smartnet-II configuration while Ericsson (now M/A-COM) proposed a 7-site EDACS solution. After much consideration, the City Commission awarded its contract to Motorola.

The initial deployment of the four-site trunked radio network was considered to be inadequate, with coverage shortfalls being the predominant user-agency complaint. Additional coverage was facilitated by Leon County's purchase and installation of the network's "Spray Field" site. Due to the contentious nature of initial-configuration coverage deficiencies, Motorola voluntarily installed a sixth simulcast tower site located at Hopkins Power Generation Facility. And, as other agencies desired operations on the radio network, the number of active radio channels grew to the current 22-channel configuration.

The addition of these two sites greatly improved countywide coverage, but still did not address the most critical coverage deficiencies noted by the Tallahassee Police Department along the City's Orange Avenue corridor. Tallahassee's natural topography is challenging, from the aspect of radio signal propagation, with significant hill crests running east and west along the Orange Avenue corridor, thereby creating a valley, the floor of which is Orange Avenue. It is readily observed that portions of Orange Avenue are topographically "shadowed"

from the radio network's prime-site vantage point. Resolution of this topographic limitation would seemingly require installation of at least one additional tower site.

Tallahassee is currently experiencing high population growth and continued suburban housing expansion within the Southwood and Waulanee Plantation areas. There is also development of a key industrial area, Innovation Park, which has seen the proliferation of medium density, two and three-story building structures. The result of this on-going population growth is a heightened awareness for improved radio network performance.

Today, the voice portion of the network supports a total of 3,194 users, 1809 are public safety users, with the remainder either supporting public works, or administration operations. A detailed list of primary public safety users currently supported by the Network can be seen below. This listing is a result of a recent user agency interviews completed by Tusa Consulting Services.

City of Tallahassee Police Department

City of Tallahassee Fire Department

Leon County Emergency Medical Services

Leon County Sheriff's Office

Florida State University Police Department

Florida A & M University Police Department

Other non-public safety agencies either currently using or are considering the use of this new digital trunked radio network. Details of these user agencies are contained in Attachment B.

The combined Smartnet-II voice and data network represents a near $20-Million investment, inclusive of infrastructure and subscriber/user equipment. It is PSCB's desire to maximize the utility of its current investment, and reuse as much of this existing infrastructure in any proposed expansion, should such reuse be operationally, functionally and technically feasible. The radio network's infrastructure is currently supervised by City personnel, with maintenance services provided by Motorola. The annual cost of this maintenance contract for the radio network, including subscriber/user equipment, is approximately $847,000. This figure, however, excludes the salaries, benefits and operational expenses of the City's internal Radio Communications Division.

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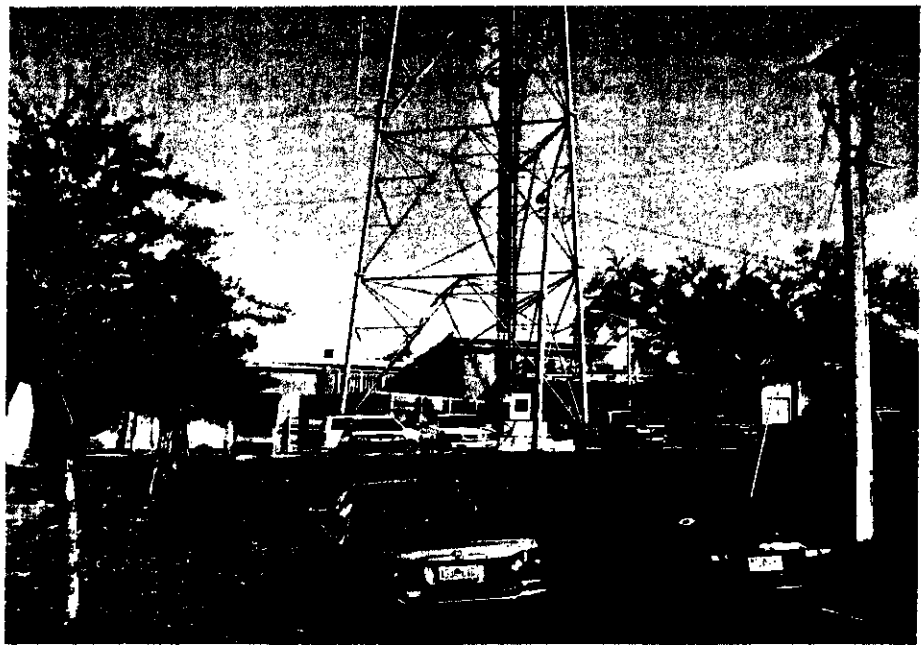
2.2.1 **Existing Infrastructure Site Details**

2.2.2 Prime Site

The Prime site (ASR1063790) is located adjacent to the Tallahassee Police Department on 7th Avenue. This site is the control point for the trunked simulcast voice radio system and is also a transmit/receive site for both voice and data operations. The USGS coordinates for the site are Lat 30-27-29.9N; Lon 84-16-48.1W.

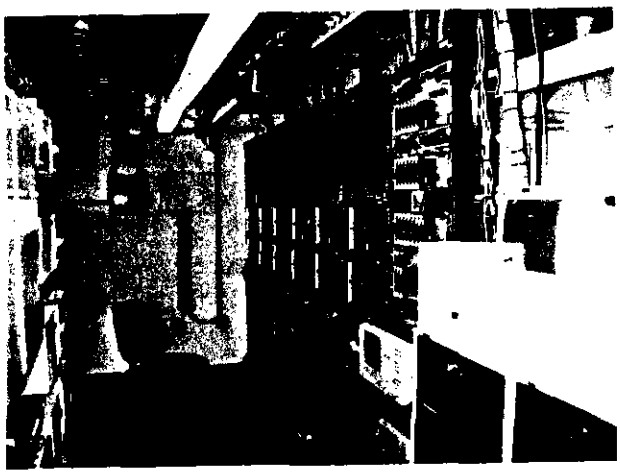
The Prime site network equipment is located with in a separate building adjacent to the Tallahassee Police Department. The site facilities are well maintained with parking spaces to the side and rear of the equipment shelter. See Photograph below.



Photograph of Prime Site, adjacent to Tallahassee PD HQ

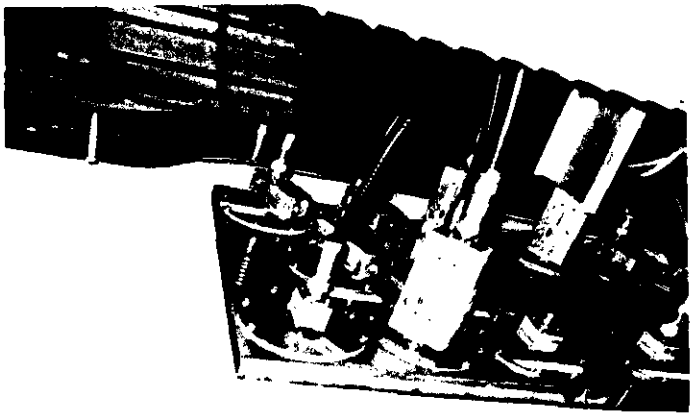
The Prime Site shelter layout is somewhat awkward in shape, but generally approximates a wedge, with an additional (recently-added) equipment room measuring approximately 27ft x17ft. There is sufficient room within this room

addition to install new base station/infrastructure equipment. Photographs of the interior of the Prime Site equipment shelter follow.



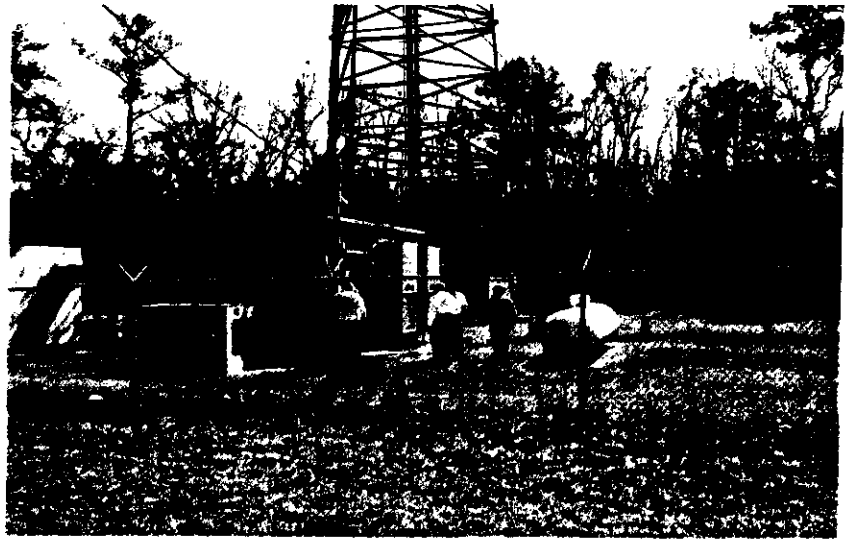
Interior View: Prime Site Equipment and Site Controllers

The Prime site recently completed a Grounding Audit. No major deficiencies were noted during the TCS inspection of this site with the exception of a closed-loop interior ground halo. Recent practice is for interior ground halos to be configured as open-loops. See photograph of typical grounding of transmission lines as they enter the interior of the shelter, below.



2.2.2 Hopkins Power Generation Site

The Hopkins site (ASR 1063815) is located adjacent to the Hopkins Power Generation facility. Coordinates are Lat 30-27-04.1N; Lon 84-23-56.0W. The site currently supports simulcast voice and data operations for the 800MHz radio network. Network equipment is located within a separate building approximately one-quarter of a mile from the main power generating facility. The grounds are well maintained with limited parking spaces to the side and rear of the equipment shelter. Note that the site is enclosed by a chain-link security fence, which will require attention as discussed later.

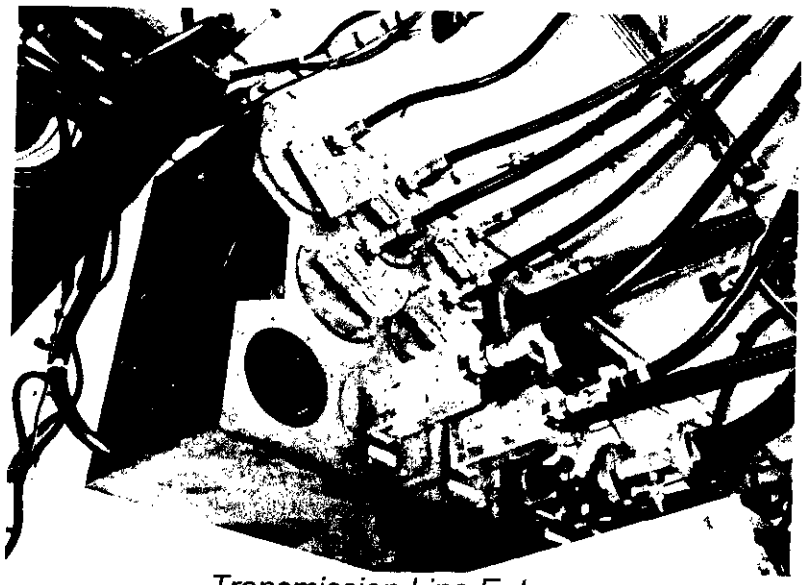


Site Equipment Shelter and Tower

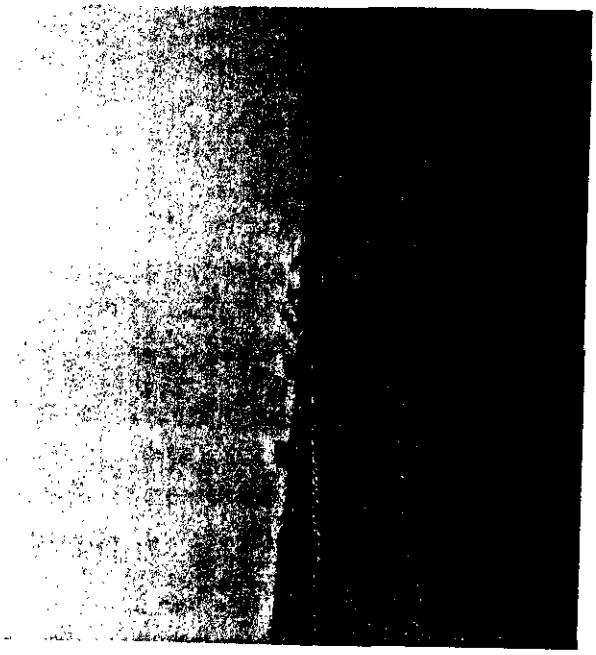
Photographs of interior of Hopkins site equipment shelter.

The equipment shelter is rectangular in shape, with measurements of approximately 20ft x 12ft. There does not appear to be sufficient space for network expansion available within this equipment shelter, therefore reuse of this location may require the addition of a new communications shelter. Installation of a new shelter may require the temporary removal of portions of the existing fence.

The Hopkins site has completed a Grounding Audit with the intention of an upgrade to current Motorola R56 Grounding Standards. See photograph of typical grounding of transmission lines as they enter the interior of the shelter, below.



Transmission Line Entrance



Photographs of Hopkins 250ft Self-Supporting Tower

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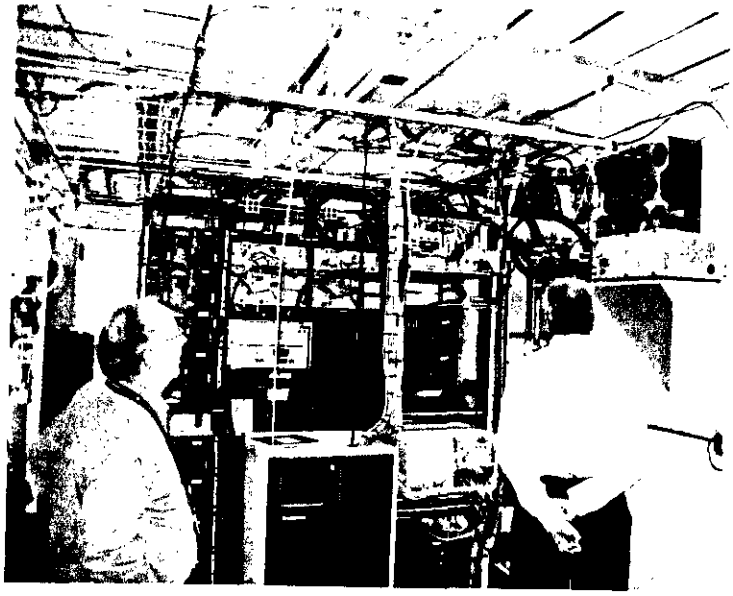
2.2.3 Crooked Road Site

The Crooked Road site (ASR 1063816) is located in the far western tip of Leon County. Coordinates are Lat 30-23-01.2N; Lon 84-39-01.0W. It currently supports simulcast voice and data operations for the trunked radio network. The site's radio network equipment is located within a separate concrete telecommunications building, set in the middle of a large field. The grounds are well maintained with virtually unlimited access and parking space surrounding the equipment shelter. See Photograph below.

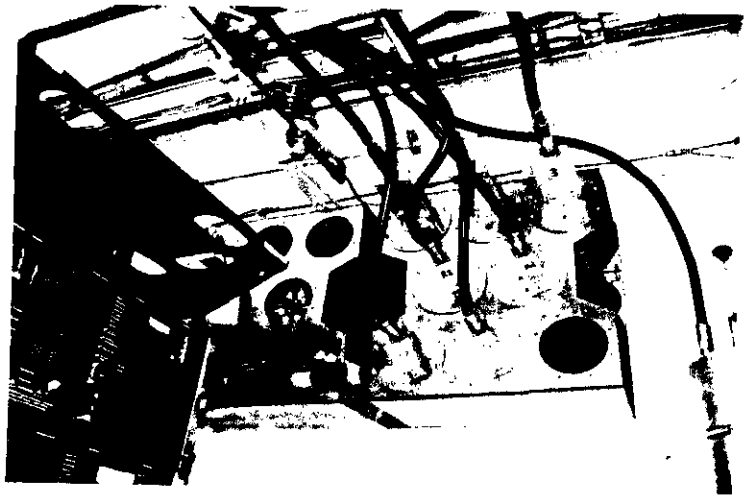
Photograph of Crooked Road site.



Interior View of Equipment Shelter

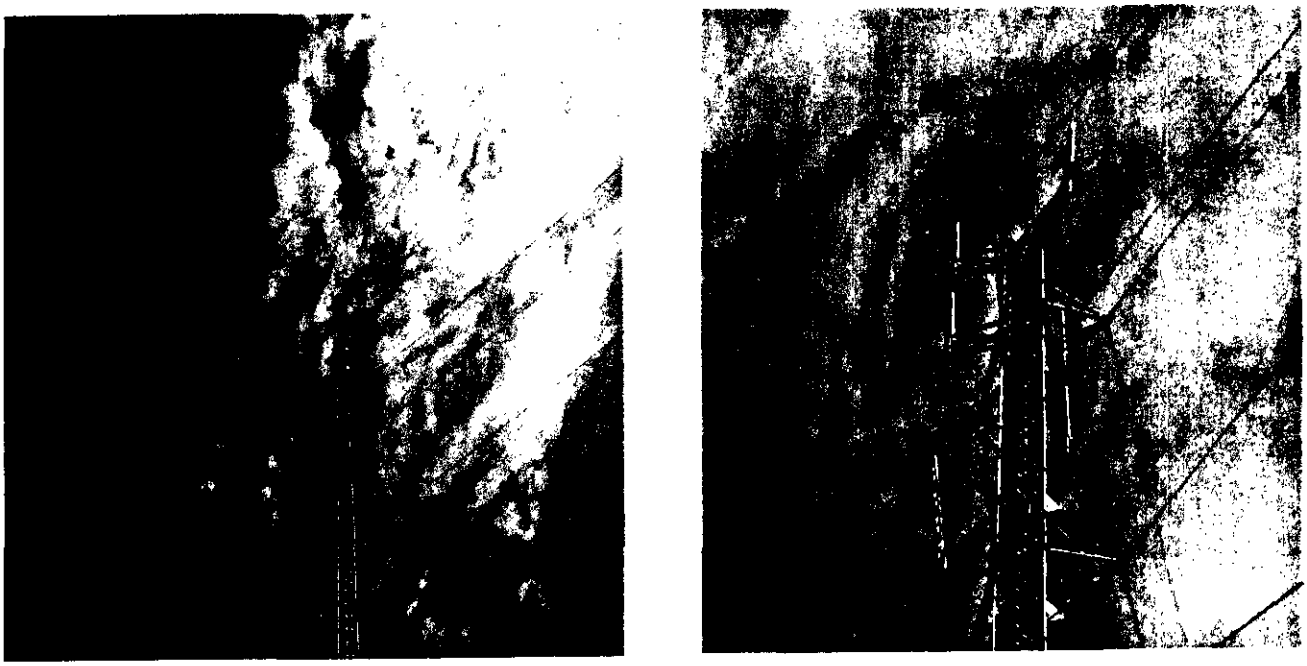
Transmitter Combiners

The Crooked Road equipment shelter is rectangular in shape, measuring approximately 30ft x12ft. There is ample space for radio network expansion available within this equipment shelter.



DRAFT

The Crooked Road site tower is a 400ft guyed Rohn Model 90. See photographs of Crooked Road site tower below.



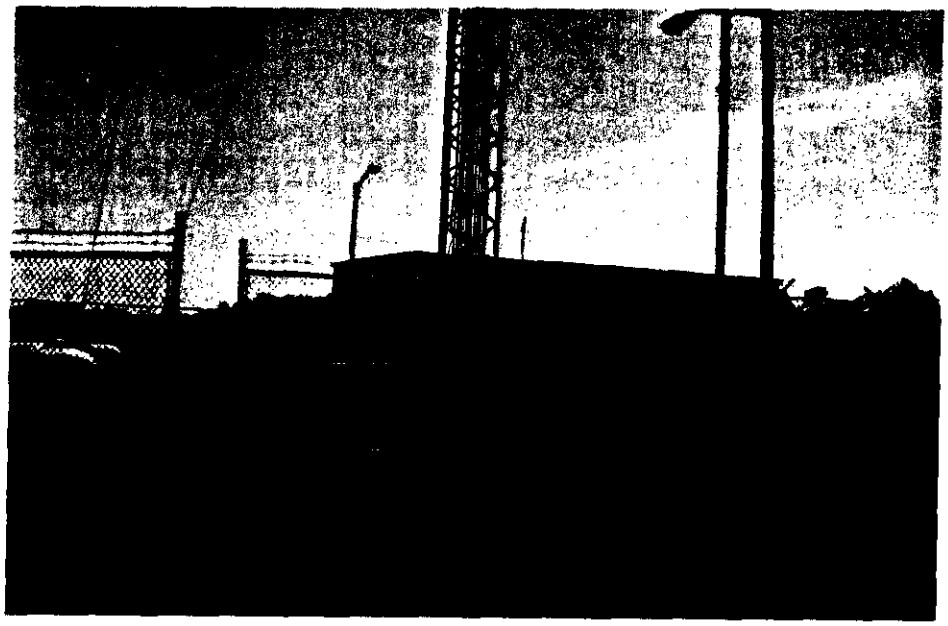
Photographs of Crooked Road site tower

No major deficiencies were noted during the TCS inspection of this site with the exception of a closed-loop interior ground halo. Recent practice is for interior ground halos to be configured as open-loops.

2.2.4 Blocker Site

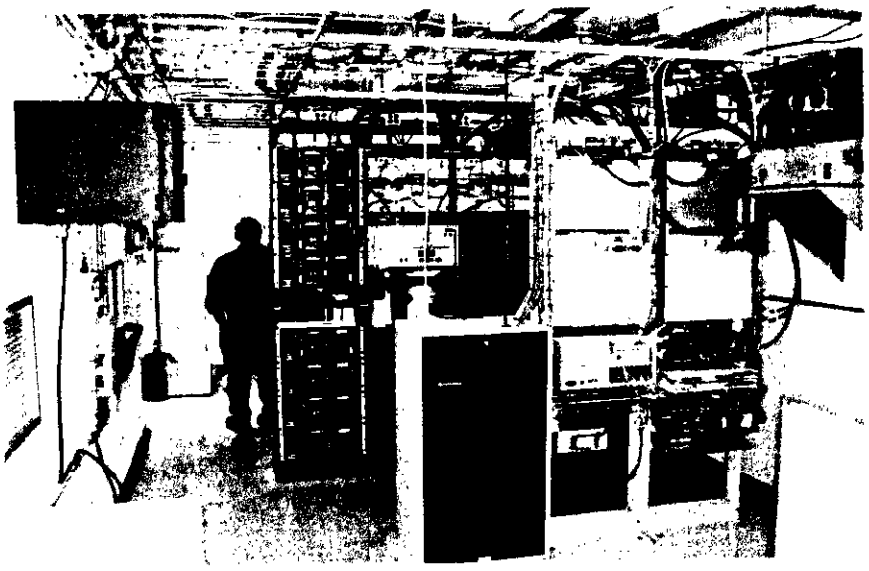
The Blocker site (ASR 1063810) is located in the north central area of the County. Coordinates are Lat 30-34-45.5N; Lon 84-15-57.0W. It currently supports simulcast voice and data operations for the 800MHz radio network. It is surrounded by two other towers, one of which is the WTNT-FM broadcast tower.

The Blocker site's network equipment is located in a separate concrete building in the middle of a large field. The grounds are well maintained with virtually unlimited parking space surrounding the equipment shelter. See Photograph below.



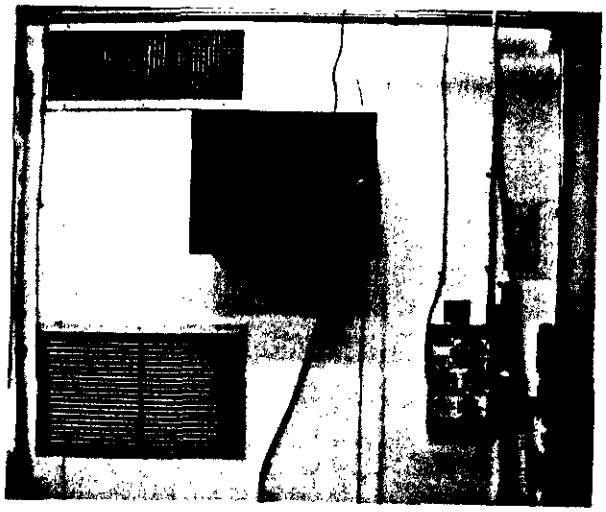
Photograph of Blocker site.

The Blocker site equipment is located in a separate concrete-style equipment shelter, which remains locked at all times. See the following photograph depicting the interior of Blocker site equipment shelter.



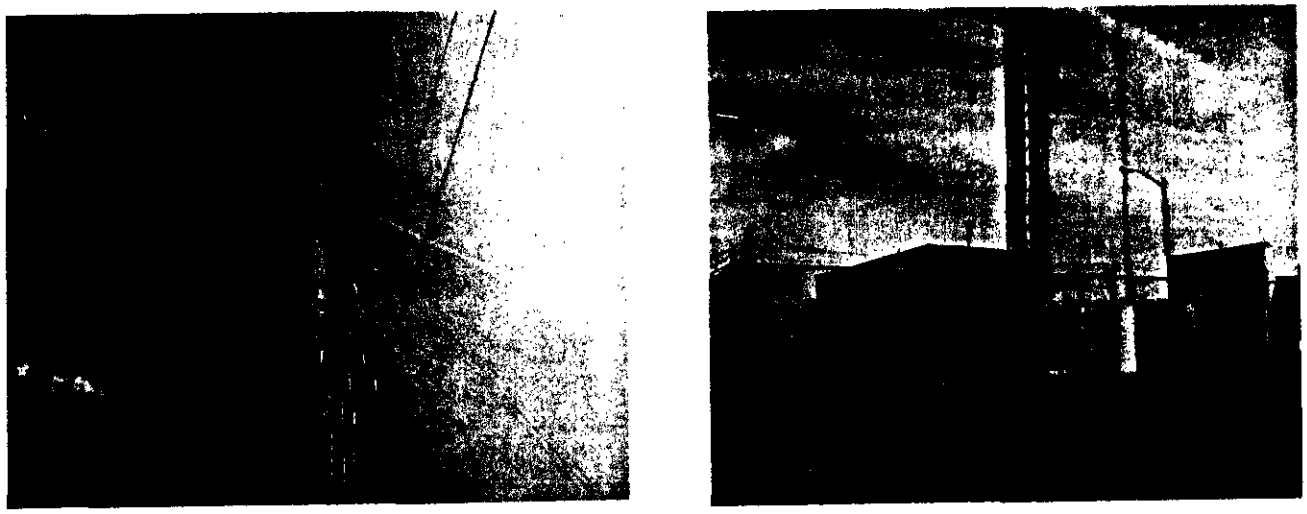
Photograph of interior of Blocker site equipment shelter.

The Blocker site layout is rectangular in shape, measuring approximately 30ft x12ft. There is ample space for network expansion available within this equipment shelter. The site has completed a Grounding Audit and upgrade to current Motorola R56 Grounding Standards is planned. One obvious grounding deficiency was noted. See the following photographs of atypical grounding of telecommunications transmission equipment mounted to the shelter interior wall forming a loop, below.



Photographs of Blocker site depicting improper telecommunications transmission equipment mounted into the equipment room wall with improper grounding noted in center of photograph.

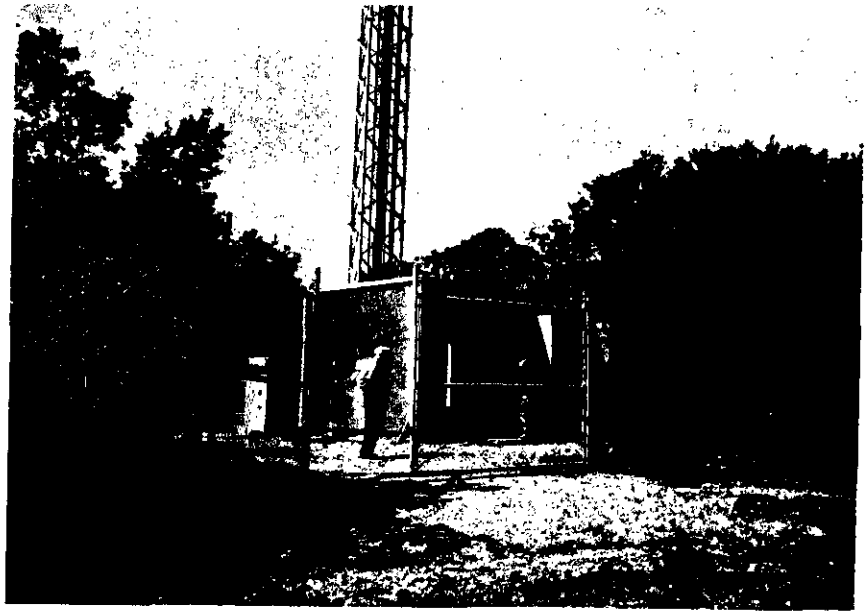
The Blocker site tower is a 400ft guyed Rohn Series 90. See photographs of Blocker site tower below.



Photographs of Blocker site tower.

2.2.5 Panther Creek Site

The Panther Creek site (ASR 1063814) is located in the northeastern area of Leon County. Coordinates are Lat 30-34-00.6N; Lon 84-02-37.9W. It currently supports simulcast voice and data operations for the 800MHz trunked radio network. Site network equipment is located within a separate building in the middle of a large field. The grounds are well maintained with virtually unlimited parking space surrounding the equipment shelter. See Photograph below.



Photograph of Panther Creek site

The Panther Creek site equipment is located in a separate concrete-style equipment shelter, which remains locked at all times. See photograph of interior of Panther Creek site equipment shelter below.

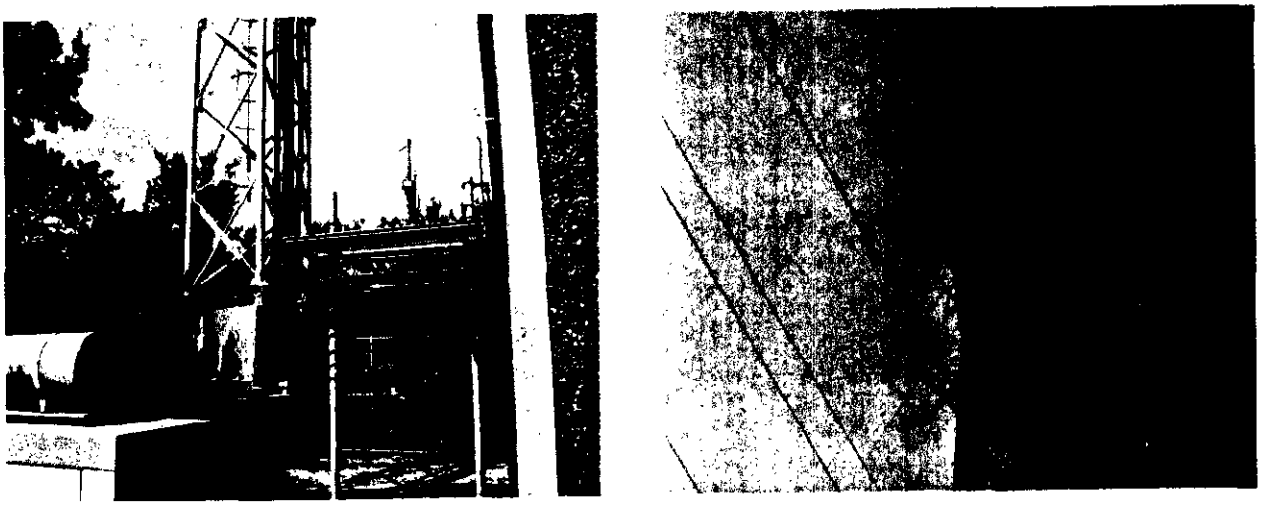
Photograph of interior of Panther Creek site equipment shelter

The Panther Creek site layout is rectangular in shape, measuring approximately 30ft x12ft. There is ample space for network expansion available within this equipment shelter.

The Panther Creek site has completed a Grounding Audit. No obvious deficiencies were noted. The following photograph illustrates the grounding of transmission lines as they enter the interior of the shelter.

Transmission Line Entry Port

The Panther Creek site tower is a 400ft guyed Rohn Series 90 tower. See photographs of Panther Creek site tower below.



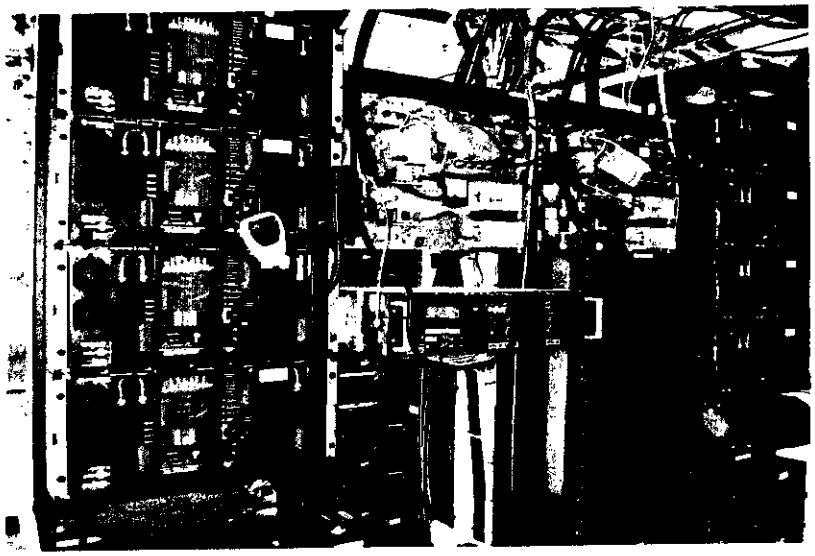
Photographs of Panther Creek site tower.

2.2.6 Spray Field Site

The Spray Field site (ASR 1206977) is located in the southeastern area of Leon County. Coordinates are 30-29-20.5N; Lon 84-11-37.7W. It currently supports simulcast voice and data operations for the 800MHz radio network. The site's network equipment is located in a separate building in the middle of a large field. The grounds are well maintained with unlimited parking space surrounding the equipment shelter. See Photograph below.

Photograph of Spray Field site

The Spray Field site equipment is located in a separate concrete-style equipment shelter, which remains locked at all times. See photograph of interior of Spray Field site equipment shelter below.

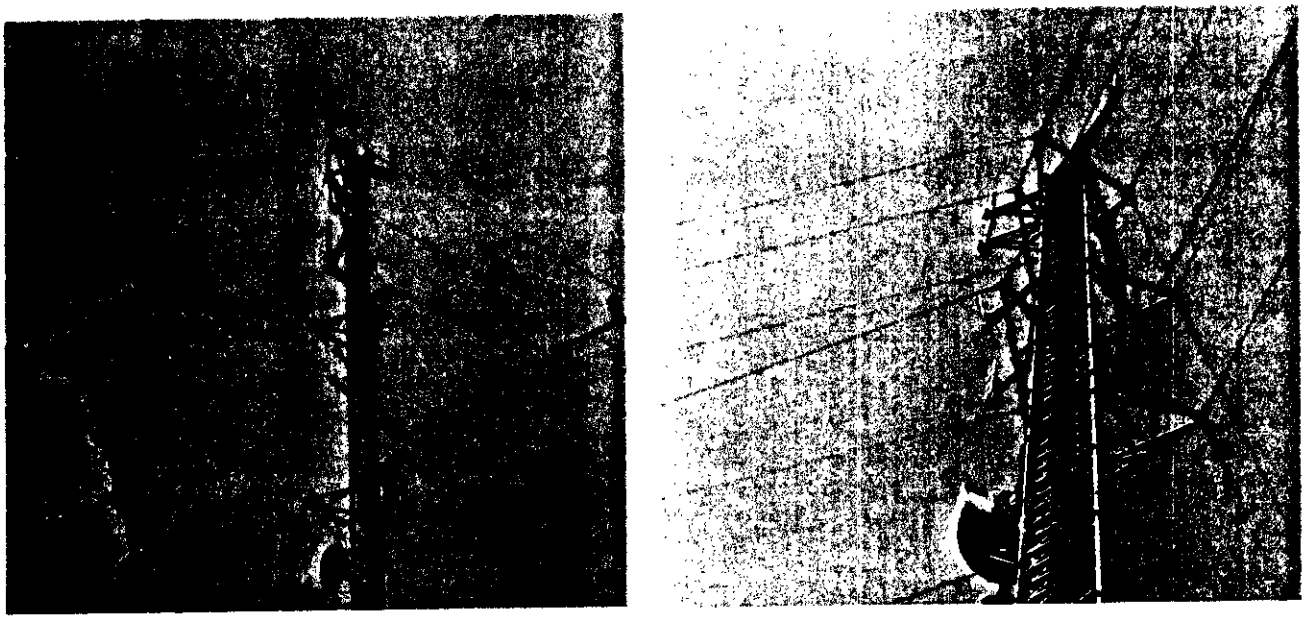


Photograph of interior of Spray Field equipment shelter

The Spray Field site layout is rectangular in shape, measuring approximately 30ft x12ft. There appears to be ample space for network expansion available within this equipment shelter. The Spray Field site has successfully completed a Grounding Audit. No obvious deficiencies were noted. See photograph of typical grounding of transmission lines as they enter the interior of the shelter, below.

Transmission Line Entry

The Spray Field site tower is a 400ft guyed Rohn Series 90 tower. See photograph of Spray Field site tower below.



Photographs of Spray Field tower

3.0 IDENTIFIED USER NEEDS

3.1 General

In March, 2006 a study was completed by Tusa Consulting Services (TCS) to assess the functional and operational needs for public safety radio communication systems within the City of Tallahassee and Leon County. Interviews of key Public Safety administrative, supervisory and staff personnel were conducted to identify current operating parameters, current functional and operational issues (i.e. coverage shortfalls), future needs and anticipated departmental structure changes that should be considered in the development of an enhanced digital radio communications network.

A full description of those interviews is contained in Attachment A. Proposers are strongly encouraged to review that document as well as the information contained in Attachment B involving non-public safety user needs. It is critically important to the success of this digital enhancement project that Proposers have a clear understanding of those needs and expectations.

The following information summarizes that contained in Attachment A and B, but this summary shall not relieve Proposers from the obligation to carefully study these attachments that identify all expressed needs in the development of their proposed network solutions.

3.2 Public Safety Needs

3.2.1 Talk Paths

Each of the Public Safety agencies utilizes individual talk group structures that are optimized for existing operations. Additionally these agencies share several sets of special operations talk groups that allow seamless

interoperability between agencies during special events and local-area emergencies. A detailed listing of agency talk group structures is contained in Attachments D and E.

For the purpose of this RFP, Proposers shall utilize these existing talk group profiles, plus a 40% future growth factor, in the development of their proposed solution.

PSCB's Radio Communications Division (RCD) is tasked with infrastructure maintenance as well as the monitoring of network loading and operational statistics. In most instances, the 22-channel voice radio network is lightly loaded (average capacity is below 30%) and has adequate headroom to accommodate short-term moderate increases in voice traffic.

3.2.2 Automatic Telephone Interconnect

The new system shall incorporate a limited number of telephone gateways and telephone-interconnect features for emergency operations use. Limitations must include the ability to dynamically control the total number of lines available, priority allocation by user, and call duration restrictions according to user priority. In addition, the availability of telephone interconnect features shall be continuously monitored and controlled by RCD in accordance with PSCB's Standard Operating Procedures governing instantaneous system loading. That is, as dispatch-traffic activity increases on the system, the availability of telephone interconnect features must correspondingly be restricted. This shall be accomplished in such a manner that degradation in system access time is solely a function of the total number of users attempting to pass voice traffic at a given period in time **and not** a result of channels dedicated to telephone transactions. The telephone interconnect feature is considered of significantly lesser importance to clear or encrypted voice communications.

For the purpose of sizing the telephone interconnect subsystem's hardware components, a maximum of four simultaneous telephone interconnect calls shall be supported.

3.2.3 Call Privacy

PSCB's existing analog trunked radio network is intrinsically open to transmission monitoring with any radio equipment operable on those 800MHz frequencies (i.e., trunk-tracker scanning receivers).

The ability to monitor in certain instances is desirable and encouraged. Dispatchers, in addition to their normal dispatch function can also monitor unit-to-unit traffic. This ability to monitor allows the dispatcher to develop a mental picture of ongoing operations. In times of emergency, where public safety personnel may need outside assistance, the dispatcher often has heard and remembered information critical to personnel safety that would otherwise have been unavailable.

Likewise, field users can hear on-frequency traffic and modify their use of the radio as conditions dictate. As an example, when emergency calls are in progress, channel protocol would require users to refrain from lower-priority transmissions. Competition for air-time may increase, but users moderate calls, both in frequency and duration, in response to simply hearing more channel activity. In such a situation, the ability to monitor is desirable.

In the present 800 MHz trunked radio system, it is impossible to control who monitors calls *outside of the network*. Command and investigative conversations may involve topics of a legally restricted or sensitive nature where eavesdropping by outside, unidentified persons is undesirable or unacceptable.

Accordingly, the new digital voice radio network shall include provisions for call privacy whereby identified users within the network can be excluded from certain talk groups or individual conversations. This provision must offer sufficient flexibility such that the desirable features of monitoring can be retained while permitting privacy to conversations that are potentially confidential. Finally, the new network shall incorporate technical features that prevent unauthorized listeners from monitoring any network calls. Ideally, the new network should inhibit the ability of non-network users from monitoring actual voice transmissions of any type (inclusive of telephone interconnect calls) as well as preventing such persons from monitoring those call assignments transacted via the network's digital control channel.

Proposers shall describe the scope and operation of such provisions inherent within their proposed solution that prevent the types of undesired radio monitoring discussed above.

3.2.4 Encryption

Digital voice encryption, using Improved Multi-band Excited (IMBE) vocoder technology coupled with federally approved digital encryption schemes, is a required feature of the new network.

Three modes of encrypted digital voice operation are desired:

1. Unit-to-unit, where conversations in an encrypted talk group are secure. These cannot be monitored at a dispatch or control point.

2. Dispatcher-to-unit, where conversations between the Consolidated Communication Center(s) and field units are secure.

3. Unit-to-telephone network, where conversations between Police encrypted units and the switched telephone network are secure.

The new network shall provide encrypted transmission so that system access delays are equal to those in the clear mode. Encrypted transmissions shall not degrade the operation of clear-voice features nor lengthen system access or audio transport delays to other users. Encryption shall not degrade the range or coverage less than normal digital performance.

3.2.5 End User Equipment

Police communications needs have generally shifted from patrol car based, with equipment fixed within vehicles to patrolman based where portable equipment is assigned to individual officers. These same user trends exist within the Fire Service and EMS.

This migration to portable units, with their reduced output power and often-degraded antenna performance, has placed greater technical demands on radio communications network infrastructures. The coverage needs for mobile-based systems are relatively straightforward as the available effective radiated power from a mobile unit can closely approach that of a base station. Talk-in/talk-out balance can thus be easily achieved with simple backbone system configuration.

Portable radio coverage problems are further compounded by the fact that users often operate within radio-resistant areas such as warehouses, office buildings, apartment structures and single-family dwellings. The need for reliable communications within building structures requires increased talk-in/talk-out system gain.

Further complicating the design of portable-based systems are desired mechanical and ergonomic features, as summarized below:

1. The radio package, itself, must be simple to operate and have a minimum of operator controls or feature selections.

2. Radios contain a microphone, speaker, talk group selector, volume control, power switch, emergency button, and normal transmit push-to-talk button. All of these input/output devices are subject to near-constant physical abuse within a public safety environment.

3. User must be able to disable message authorization tones.

4. The volume control must be fully adjustable from zero to maximum audio output level.

5. Unit must be extremely rugged to withstand shock and vibration typical of public safety operations. For the Fire Service, other features such as Intrinsically-Safe operation and the ability for the equipment to survive short-term water submersion are required.

6. Units must be operable, within the coverage requirements of Section 7.0, using the smallest flexible antenna available.

7. Radio unit battery packs must operate to provide sufficient power for a full twelve-hour work period. A range of accessories must be available for support in-field battery charging.

8. Radio units must be equipped with alphanumeric displays to more readily identify selected talk groups and operating modes, i.e. clear voice, encrypted voice, etc.

9. Radios must be capable of operation with traditional speaker/microphones as well as subminiature radio surveillance accessories.

10. In addition to the specific desired features indicated above, all furnished equipment must meet minimum equipment requirements identified in Section 5.0.

3.2.6 Interoperability

As this new network's coverage footprint will duplicate or partially overlap outside-agency radio communication systems, direct unit-to-unit interoperability is a desired feature. Special talk groups must be provided so that certain City/County users can have access to outside-agency radio networks, regardless of frequency band or communications technology in place.

The methodology of network access is to be accomplished by transparent radio and/or audio links (computer controlled) where the need for linkage is frequent. In those cases where the need for interoperability is relatively infrequent, links can be established manually by the City/County Communications Center(s).

The following Table identifies those public safety agencies where interoperability is desired.

	Tallahassee Police Department (TPD)	Tallahassee Fire Department (TFD)	Leon County Sheriff's Office (LCSO)	Leon County EMS (LCEMS)	U. S. Marshal's Office	Florida A&M University Police (FAMU-PD)	Florida State University Police (FSU-PD)	Tallahassee Utility	Tallahassee Bus Service	MED-8	Adjacent County Public Safety	SLERS Network
Tallahassee Police Department (TPD)		X	X	X	X	X	X	X	X			
Tallahassee Fire Department (TFD)	X		X	X		X	X	X			X	
Leon County Sheriff's Office (LCSO)	X			X	X						X	X
Leon County EMS (LCEMS)	X	X	X			X	X			X	X	X
U. S. Marshal's Office	X		X									X
Florida A&M University Police (FAMU-PD)	X		X	X			X					X
Florida State University Police (FSU-PD)	X		X	X		X						X

Table 1. Voice Radio Interoperability Matrix

Although not specifically identified in previous User Interviews, there is a need for all public safety agencies operable on this shared Digital Voice Network to have the ability to communicate via common interoperability talk groups.

The APCO Project-25 standards do not allow for seamless interoperability between radio systems on differing radio bands/spectrum. That is, while many federal government agencies (particularly those outside agencies likely to respond to a wide area emergency such as a hurricane) are migrating onto Project-25 radio systems, these are often operable on VHF (130-170MHz) and UHF (403-512MHz) channels. 700/800MHz portable radios cannot communicate on these lower frequency bands. Therefore, provisions must be made within the proposed Digital Radio Network to support 700/800MHz talk group-to-VHF/UHF channel translations.

A minimum of four translation base stations (two operable on VHF and two for UHF operations) shall be provided and interfaced into the Digital Voice Network. These stations shall be fully programmable for use on channels designated by the responding agency(s). Four new talk groups shall be provided within the new Network:

1. VHF Interop 1
2. VHF Interop 2
3. UHF Interop 1
4. UHF Interop 2

Each of these talk groups shall be electronically steered to their corresponding translation base stations. Operationally, the radio dispatchers shall be able to monitor traffic on these translation channels. Further, field users shall remotely activate a patch between the translation base stations and their radio whenever one of these four translation talk groups is selected by one or more 700/800MHz Network users.

In the instance when no user has selected a translation talk group, the patch shall be automatically dropped; however, dispatchers would continue to have the ability to monitor traffic received by translation base stations. Such traffic would not be rebroadcast onto the Digital Voice Network unless a new patch was manually configured and enabled by a radio dispatcher.

4.0 MINIMUM OPERATIVE CHARACTERISTICS

4.1 General

In March, 2006 and October 2006, studies were completed by Tusa Consulting Services and its subcontractor (Hayes-Tallahassee) to assess the operational needs for all users of the radio communication systems within the City of Tallahassee and Leon County, Florida. Interviews of departmental supervisory personnel were conducted to identify current operating parameters; future needs and anticipated departmental structure changes that should be considered in the development of an enhanced digital voice communications network. The results of each study are contained in Attachments A and B.

Section 3.0, Identified User Needs, described the minimum functionality required by the various public safety user agencies. In this Section, minimum-operating characteristics for departments now operable on PSCB's analog trunked radio system will be presented. From this information Proposers can better determine the scope of services needed to satisfy talk group structure requirements for this project.

4.2 Public Safety Departments

The City of Tallahassee Police Department, Fire Department, Leon County Sheriff's Office, County Fire Department (volunteer) and Leon County EMS have utilized the existing analog trunked radio system for many years. During that time, the various talk group structures for each have been modified to better suit individual department needs.

Proposers should assume that the current talk group structure could be essentially replicated for the new digital radio network. The tables contained in Attachment-D depict existing public safety talk group structures

4.3 Non-Public Safety Departments

Animal Control; Parks and Recreation; Airport; Public Works; the StarMetro Bus Services; and "Your Own Utilities" (Gas, Electric, Solid Waste) are all City agencies now using the 800MHz trunked radio system. Additionally, Leon County's Animal Control; Public Works Mosquito Control; Parks and Recreation; Health Department; Facilities Management and Construction Departments actively utilize this shared analog radio network.

These departments utilize a somewhat standardized talk group structure whereby a small number of groups are allocated to each, but user radios are also configured to have comprehensive levels of interoperability through shared talk groups as well. The purpose for this added capability is to support needs during special events and special circumstances, such as hurricanes. *Unfortunately, most users have no idea of this enhanced* interoperability capability and it often goes unused even during events where such access would have benefit. Therefore, some simplification of non-public safety talk group structures should be considered in the development of the new digital radio network.

Examples of non public safety user talk group profiles are contained in Attachment-E

5.0 MINIMUM EQUIPMENT REQUIREMENTS

This Section describes the minimum-acceptable requirements for mobile, portable, control station, fixed-site radio and microwave equipment. All radio equipment installed by Contractor shall be FCC type accepted under Part 90 of the FCC Rules and Regulations. Additionally, all supplied equipment shall be in current production and shall meet or exceed the requirements of this Section.

Base station/repeaters shall support mixed-mode modulation formats such as analog voice, Project-25 digital voice (IMBE Vocoder), and shall support or shall be readily upgradeable to support trunked mobile data technology. If substantial upgrading is involved to support trunked mobile data operations, Proposers shall clearly identify what will be required to "upgrade" a repeater to support mobile data computing and supportive application software. Proposers shall be specific in their responses and shall avoid ambiguous statements such as "digital capable, digital ready", Project-25 capable", etc.

The existing PSCB analog trunked radio network is supported by a licensed, digital 6GHz microwave subsystem. While Proposers are encouraged to reuse existing PSCB facilities, PSCB intends to decommission the microwave system along with its analog trunked radio network due to equipment obsolescence concerns. Therefore, and while the existing microwave subsystem can be used to assist in the initial construction of the new digital radio network, the final 700/800MHz digital voice network configuration must provide a new, fully protected digital microwave subsystem that conforms to these minimum Specifications.

Note: The City of Tallahassee/ Leon County anticipates a future migration to mobile data technology via commercial cellular backhaul. In the short term, the existing RD-LAP data subsystem will be retained and eventually will provide backup support for the primary commercial cellular data

backbone. Therefore, it is critical that Proposers identify any elements of the RD-LAP subsystem that utilize components of the existing voice radio system (i.e., transmit combiners, antenna systems, receiver multi-couplers, etc.) and that those facilities are replicated in the proposed digital radio network configuration. Furthermore, unscheduled interruptions to the RD-LAP subsystem during the construction of the new digital radio network are not permitted.

It is anticipated that the RD-LAP subsystem will become increasingly more difficult to operate/maintain in the coming years, thereby making the need for an upgraded technology trunked data solution a potential reality. There is no requirement for Proposers to include a replacement data radio subsystem in their Proposal Submittal

The stated minimum requirements, below, for end-user equipment will not necessarily be required on all individual units assigned to differing user agencies. Section 16.0, *Pricing Considerations contains those user radio* configurations required for each agency/department.

5.1 Mobile Radio Equipment

A. Meet APCO minimum recommendations and EIA/TIA standards for Project-25 Public Safety 700/800MHz trunked radio systems.

B. Incorporate heavy-duty construction, weather-sealed enclosures and weather-sealed controls to meet Military Standard 810 C, D, E and F for water, shock, vibration, dust, humidity and high/ low temperature performance.

C. Allow operations on Project-25 trunked and conventional (analog/Project-25) systems with priority scan of talk groups or channels.

D. Front mount and rear mount, dual control-head with single rear mount radio and dual radios with single control-head configurations must be available to meet the needs of the different public safety departments. Rear mount radios may require weatherproof control heads, speakers, microphones and other accessories (specific for fire operations). Dual-band mobile radio configurations (using one control head/speaker/microphone to simultaneously control two mobile radio transceivers) must be available to allow VHF/ 800MHz; UHF/800MHz or VHF/UHF operations, depending upon the types of radio transceivers employed.

E. Incorporate electronic, alphanumeric displays to provide visual indication of system availability, channel/talk group selection, incoming user ID, call alerts and operational status such as scan and channel busy.

F. Emergency priority button on mobile radio control panels to initiate an emergency priority call.

G. External alarm dry-contact closure to provide activation of a horn, light, etc. whenever the radio unit is individually called.

H. Data transmission capability.

I. Digital voice encryption, using Improved Multi-Band Excited (IMBE) vocoder technology and federally approved AES/DES coding, to provide security during transmission and reception of sensitive communications.

J. Radio operating information shall be contained in an electrically erasable memory device. Unit will be fully programmable from an

IBM-compatible computer. Sufficient quantities of programming cables shall be part of the delivered equipment.

K. Transmit Time-Out Timer to warn the user of excessive transmission length. Time out timer should automatically disable the radio's transmitter after a pre-determined period; thereby eliminating talk group/channel interference caused by either a defective speaker/microphone or PTT button.

L. Minimum Electrical Specifications as follows:

Channel Capacity:	24 channels/system (8-systems/tiers, min.)
Talk Group Capacity:	16, minimum, per system
Primary Input Voltage:	11 to 16VDC, negative ground
Battery Drain:	Standby: 1.5 amperes, max. Receive: 4.0 amperes, max. Transmit: 15.0 amperes, max.
Environmental:	MIL-STD 810 C, D, E and F for shock, vibration, humidity and high/low temperature

Transmitter

Frequency Range:	803 to 825 MHz; 851 to 870 MHz 764 to 776 MHz; 773 to 797 MHz

Talk group Selection:	16 talk groups per system
RF Output Impedance:	50 ohms
Output Power:	Sufficient power to achieve required coverage, not less than 10 watts
Channel Spacing:	25/12.5 KHz/NPSPAC
Spurious/Harmonic:	At least 64 dB below carrier
Frequency Stability:	1.5 PPM from -30°C to 60°C
Modulation:	11KOF3E;16KOF3E;8K10F1E; 8KF10D
Modulation Deviation:	+/-5 KHz for 25 KHz Channel +/-4 KHz for NPSPAC
Audio Distortion:	Less than 5% @ 1 KHz
Audio Response:	+1, -3 dB of a 6/ dB per octave pre-emphasis characteristic from 300 Hz to 3 KHz
Duty Cycle (EIA):	Transmitter 20%
FM Hum and Noise:	-40 dB

Receiver

Channel Capacity:	24 channels per system (8 systems, min)

Channel Spacing:	25/12.5 KHz; NPSPAC
Sensitivity:	
20db Sinad	0.50 microvolts
5% BER	0.50 microvolts
Selectivity:	-70 dB
Frequency Stability:	1.5-PPM from -30° to 60°C
Modulation Acceptance:	+/-7KHz
Intermodulation:	-70 dB
Spurious/Image:	-70 dB
Audio Output:	10 watts, no more than 3% distortion at 1KHz
Duty Cycle (EIA):	Receiver 100%

5.2 Portable Radio Equipment

A. Meet APCO minimum recommendations and EIA/ TIA standards for Project-25 Public Safety 700/800MHz trunked radio systems.

B. Heavy duty construction and weather-sealed cases to meet Military Standards 810 D, E and F for shock, vibration, dust, humidity, high/low temperature and blowing rain.

C. Allow operations on Project-25 trunked and/ or conventional (analog/ Project-25) systems with priority scan of talk groups or channels.

D. Top-mounted rotary controls with positive stops for volume and channel selection. Control placement must be sufficient to allow gloved-hand operation, as is typically needed by the fire service.

E. Incorporate electronic, alphanumeric display to provide visual indication of system availability, channel/talk group selected, incoming user ID, call alerts and operational status such as scan, transmit or low battery.

F. Transmit Time-Out Timer to warn the user that the radio may be transmitting longer than a predetermined time limit and then disable the transmitter.

G. No protruding push-to-talk switch, thereby preventing accidental transmitter operation or damage to the switch as caused by impact.

H. Protected emergency button to allow easy access when needed but incorporating an ergonomic design whereby the emergency function could not be accidentally activated.

I. An accessory receptacle shall be provided for the connection of external devices such as remote microphones or combination remote speaker/microphone units (with or without antenna), vehicular adapters and mobile data computer equipment.

J. Radio operating information shall be contained in an electrically erasable memory device. Unit will be fully programmable from an IBM PC compatible computer, via the accessory receptacle. Sufficient quantities of programming cables shall be part of the delivered equipment.

K. Portable radios, batteries and accessories (used by the fire service) proposed must be approved by Factory Mutual as intrinsically safe for the following hazardous environments: Class I and II Division I, groups C, D, E, F and G and non-incentive for Class I, Division 2, Groups A, B, C and D.

L. Carrying case options should include leather-carrying case with swivel mounts, as well as chemical-resistant cases (nylon or similar plastic material) for use by hazardous material groups. Additionally, a quantity of battery belt clips should be included to match the number of non-public safety portable radios supplied for all agencies.

M. Optional surveillance accessories such as miniature microphones, earpieces and remote microphones and headset speaker microphones must be available.

N. Digital voice encryption, using Improved Multi-Band Excited (IMBE) vocoder and federally approved AES/DES coding, to provide enhanced security during transmission and reception of sensitive communications.

O Provide single-unit 120VAC rapid charger capable of fully charging a discharged high capacity battery pack within a one-hour period. Provide optional single-unit 12VDC rapid charger for vehicular operation

P. Battery shall operate the proposed radio equipment a minimum of twelve-hours using a duty cycle of 5% transmit, 5% receive and 90% standby.

Q. Radios must be operable on new rebanded 800MHz NPSPAC frequencies as well as 700/800 MHz conventional and trunked frequencies.

R. Minimum electrical specifications as follows:

Channel Capacity:	24 channels/system (8-systems/tiers, min.)
Talk Group Capacity:	16 talk group/system
Duty Cycle:	Intermittent
Temperature Range:	-30°C to +60°C
Humidity:	95% relative humidity @ 50°C
Shock, Vibration, Humidity:	Shall meet or exceed MIL STD 810 C, D, E and F for High/low temperature and blowing rain.
Frequency Range:	803 to 825 MHz; 851 to 870 MHz 764 to 776 MHz; 773 to 797 MHz
Talk group Selection:	Rotary-knob style

Transmitter

Frequency Range:	803 to 825 MHz; 851 to 870 MHz 764 to 776 MHz; 773 to 797 MHz

RF Output Impedance:	Sufficient power to achieve required coverage, but not less than 2.5 watts
Frequency Stability:	1.5-PPM from -30°C to +60°C
Modulation Deviation:	+/-5KHz for 25KHz Channel +/-4KHz for NPSPAC
Emissions:	11KOF3E;16KOF3E;8K10F1E; 8KF10D
Audio Response:	Within +1, -3 dB of a 6 dB/ octave
Audio Distortion:	Less than 5% @ 1 KHz, rated system deviation
Spurious/Harmonic:	-50 dB
FM Noise:	-40 dB

Receiver

Frequency Range:	803 to 825 MHz; 851 to 870 MHz 764 to 776 MHz; 773 to 797 MHz
Channel Spacing:	25/12.5 KHz/NPSPAC
Mod. Acceptance:	+/-7KHz
Selectivity:	-70 dB (25KHz channel)

Sensitivity:	
20 db Quieting	0.5 microvolts
5% BER	0.5 microvolts
Intermodulation:	-70 dB
Spurious/Image:	-70 dB
Frequency Stability:	1.5-PPM from -30° to +60°C
Audio Output:	500 milliwatts @ no more than 3% distortion

5.3 **Control Station Equipment**

A. Available either as integrated 120VAC-powered desktop radio cabinet or a remotely located, AC-powered radio package with separate remote control unit.

B. Control station and control unit shall have optional provision to operate from standby 12VDC source upon failure of AC power.

C. Provision shall be provided for local and remote control operation of the control station.

D. Meet APCO minimum recommendations and EIA/TIA standards for Project-25 Public Safety 700/800MHz trunked radio systems.

E. Allow operations on Project-25 trunked and conventional (analog/ Project-25) systems with priority scan of talk groups or channels.

F. Digital voice encryption, using Improved Multi-Band Excited (IMBE) vocoder and federally approved AES/DES coding, to provide

enhanced security during transmission and reception of sensitive communications.

G. Incorporate electronic, alphanumeric displays to provide visual indication of system availability, channel/talk group selection, incoming user ID, call alerts and operational status such as scan and channel busy.

H. Transmit Time-Out Timer to warn the user that the radio may be transmitting longer than a predetermined time limit and then disable the transmitter.

I. Control station packaging shall incorporate sufficient electro-magnetic shielding of radio and power supply components to allow multiple control stations to be located at the same site without causing unit-to-unit interference.

J. Proposed control station radios must be operable on new rebanded 800MHz NPSPAC frequencies as well as 700/800 MHz conventional and trunked frequencies.

K. Minimum electrical specifications as follows:

Channel Capacity:	24 channels per system (8 systems/ tiers)
Talk Group Capacity:	16 talk groups per system/tier, minimum
RF Power Output:	Sufficient power to provide required radio coverage, but not less than 10 watts.
Primary Input Voltage:	120VAC, 60Hz, single-phase with 3 conductor grounded line cord

Optional Battery:	12VDC designed for 4-hrs operation
Shock and Vibration:	MIL STD 810 C, D, E & F
Frequency Range:	803 to 825 MHz; 851 to 870 MHz 764 to 776 MHz; 773 to 797 MHz

Transmitter

Frequency Range:	803 to 825 MHz; 851 to 870 MHz 764 to 776 MHz; 773 to 797 MHz
Talk group Selection:	16 talk groups per system
RF Output Impedance:	50 ohms
Channel Spacing:	25/12.5 KHz; NPSPAC
Spurious/Harmonic:	At least 70 dB below carrier
Frequency Stability:	1.5 PPM from -25°C to 60°C
Modulation:	11KOF3E;16KOF3E;8K10F1E; 8KF10D
Modulation Deviation:	+/-5KHz for 100% @ 1KHz +/-4KHz NPSPAC
Audio Distortion:	Less than 3% @ 1 KHz

Audio Response:	+1/-3dB of a 6dB-per-octave pre-emphasis characteristic, 300Hz to 3KHz
Duty Cycle (EIA):	Transmitter 20%

Receiver

Frequency Range:	803 to 825 MHz; 851 to 870 MHz 764 to 776 MHz; 773 to 797 MHz
Channel Capacity:	24 channels per system (8 systems, min.)
Channel Spacing:	25/12.5 KHz/NPSPAC
Sensitivity:	
EIA SINAD (20 dB)	0.50 microvolts
5% BER	0.50 microvolts
Selectivity:	-70 dB
Frequency Stability:	1.5 PPM from -25° to 60°C
Modulation Acceptance:	+/-7KHz
Intermodulation:	-70 dB
Spurious/Image:	-75 dB
Audio Output:	At least 1.5 watts, no more than 3% distortion at 1KHz
Duty Cycle (EIA):	Receiver 100%

5.4 Fixed Site Equipment Radio

A. Meet APCO minimum recommendations and EIA/TIA standards for Project-25 Public Safety 700/800MHz trunked radio systems.

B. Equipment must comply with FCC Part 90 Rules and Regulations for stability, deviation, spurious and harmonic emissions.

C. Base/repeater stations shall be designed for continuous-duty, 100% operation at full manufacturer's specification.

D. Infrastructure shall incorporate site monitor and infrastructure alarm systems having the ability to report major/ minor infrastructure functionality alarms on multiple dispatch-located alarm console display devices. Additionally, the alarm reporting system shall have the capability of being remotely accessed for the monitoring and remote-interrogation of field/site related alarms.

E. All transmitter sites shall utilize 48VDC or 24VDC battery backup subsystems sized of a minimum 8-hour full load capacity and must include auto/transfer natural gas/LPG fueled standby generator systems.

F. The proposed infrastructure shall include a "Fail-Soft" trunking scheme designed to maintain network performance as critical site components fail. Proposed network solutions must be fault tolerant with redundant levels of computer hardware/software, as necessary, to maintain trunked operation during equipment failures.

G. System infrastructure equipment shall support special services, i.e. encrypted voice, data transmission, telephone interconnect, audio recording of designated talk groups and collection of system operational data.

H. The proposed infrastructure solutions shall have the ability to be expanded, without having to replace previously-installed like equipment. The proposed infrastructure hardware must be configured to readily accept the installation of one additional infrastructure site above that included in the Proposer's design, to accommodate future population expansion and growth within the City of Tallahassee and Leon County.

I. Minimum electrical specifications as follows:

Number of Frequencies:	One transmit; one receive
Power Input:	Configured for either 48VDC or 24VDC operation per Section 6.2.3.1.
Operating Temperature:	-30°C to +60°C
Humidity:	95 % relative humidity @ 50°C (typical)
Duty Cycle:	100 % Continuous Operation

Transmitter

RF Power Output:	Sufficient power to achieve desired coverage, but not less than 100 watts
RF Output Impedance:	50 ohms
Frequency Stability:	0.001PPM from -30°C to +60°C ambient. Referenced to GPS-disciplined local oscillator frequency standard in simulcast configurations

Emission Designator:	11KOF3E;16KOF3E;8K10F1E;8KF10D
Audio Response:	Within +1, -3 dB of a 6dB per-octave pre-emphasis from 300Hz to 3KHz, per EIA standards
Audio Distortion:	Less than 2% @ 1KHz
Spurious/Harmonic:	More than 70 dB below carrier
Modulation Deviation:	0 to +/-5KHz Project-25 Compliant per TIA 102 CAAB
Frequency Range:	851 to 870 MHz
FM Hum and Noise:	-55 dB or better

Receiver

Frequency Range:	806 to 825 MHz
Channel Spacing:	25/12.5 KHz; NPSPAC
Mod. Acceptance:	+/-7 KHz minimum
Frequency Stability:	0.001PPM from -30° to +60°C ambient. Reference to GPS-disciplined local oscillator frequency standard in simulcast configurations.
Sensitivity:	
20 dB Quieting	Less than 0.5 microvolts
5 % BER	Less than 0.50 microvolts

Selectivity:	-70 dB minimum
Intermodulation:	-80 dB
Spurious/Image:	-80 dB
Audio Output:	1-watt into 8-ohms with no more than 5% distortion at 1KHz (for local speaker) 600 Ohm line level output, adjustable -20 to +3 dBm.

5.5 Fixed Station Equipment Microwave Requirements

A. Digital voice/data technology shall be used to minimize audio-phase delays and/or incompatibility of audio levels within the proposed network solution. Where VoIP techniques are used to interconnect infrastructure sites, in lieu of traditional PCM multiplex channel schemes, a robust means shall be provided thereby assuring that the highest priority possible is given to voice packet delivery.

B. Redundant transmit, receive and base band equipment for each site, configured for automatic hot standby operation, shall be provided. This redundant equipment must automatically switch to the hot standby component(s) upon failure of the primary equipment. Loop-switched configurations, if proposed, shall also incorporate monitored hot standby radio components.

C. A Microwave Alarm System shall be provided to monitor microwave site functions and to provide alarm status of abnormal operational parameters of equipment associated with the microwave system.

D. An order wire channel with individual site handsets must be provided to link all microwave locations for testing and troubleshooting.

E. A separate 24VDC or 48VDC microwave standby battery system shall be provided and sized for 24-hours of continuous microwave/ multiplex equipment operation at each infrastructure site. An automatic low-voltage disconnect system shall be employed to protect the battery plant from deep-cycle discharge damage.

F. The proposed microwave subsystem system shall be initially configured for 100% excess capacity to allow for future radio communication needs.

G. The operating frequency for the microwave system shall be no higher than 18GHz. All FCC frequency coordination, license application preparation and engineering activities associated with the development of the FCC license submittal, including path surveys, as necessary, shall be the responsibility of the Contractor. Any proposed use of unlicensed, spread spectrum microwave links is unacceptable.

H. Microwave system availability shall be no less than 99.99975% (78.8 seconds outage per year).

J. Proposed microwave antennas, radomes, and antenna mounts must be capable of maintaining reliable operations during sustained hurricane force winds of up to 140mph. Each furnished antenna system shall be equipped with dual stiff arms/mounts to limit antenna vibration and flexing during high wind events. If space diversity is required because of the necessity for higher frequencies and the engineering constraints of longer distances, these

requirements and all necessary materials shall be part of the Proposal.

I. Minimum operational service parameters of each microwave link shall be as follows:

Unfaded Bit Error Rate (BER):	Not Less Than 10^{-10}
Calculated RF Link Fade Margin, Including Circulator, Connector, and Transmission Line Losses:	Not Less Than 40 db.
Maximum Faded BER:	Not Less Than 10^{-6}
Link Outage Level:	To coincide with 10^{-3} BER, to occur at a signal level not less than 3 db in excess of the calculated RF link fade margin.

Note: APCO minimum recommendations for Project-25 digital trunked radio systems include, but are not necessarily limited to, the following operational and functionality characteristics:

- Digital 9.6 kb control channel; digital working channels.
- Automatic Unit Identification
- Call Privacy
- Emergency communications priority routing
- Centralized System Controller with Management Capabilities
- Multiple, Software-Controlled Talk Groups
- Priority Talk Path Scanning

- Lost/ Stolen Radio Inhibit
- User Priority Levels
- Dynamic user regrouping
- Telephone interconnect operation
- IMBE digital voice coder
- Encrypted digital voice operation
- Interoperability with outside conventional/trunked radio networks
- Direct interconnectivity with other Project-25 compliant network switches

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6.0 INFRASTRUCTURE SYSTEM CONFIGURATION

6.1 General

The radio systems currently used by the City of Tallahassee and Leon County utilize facilities that are located at City/County owned sites. Unfortunately, the configuration of existing sites provides inadequate radio coverage throughout a sizable portion of the City such as the Orange Avenue corridor and most state government and university building structures. This Specification Section defines those critical operational and functional expectations minimally necessary to enhance the City of Tallahassee/Leon County's public safety radio communications reliability, effectiveness and suitability.

The existing analog voice radio network is composed of twenty-two 800MHz channels. This existing voice radio network (as well as the RD-LAP 19.2kb radio data subsystem) is directly impacted by the FCC's 800MHz Rebanding Order. Work is underway by Radio Communications Division (RCD) staff, independent of this procurement; to reband/retune PSCB's 800MHz infrastructure and user equipment. Proposers therefore, and for the purpose of this RFP, should assume that 800MHz rebanding would have no impact on their work to design, develop, and install a compliant Project-25 digital trunked voice radio network. A listing of new frequencies assignments as a result of the Wave 3 FCC Rebanding Order for the current analog system are included in Attachment F.

The PSCB voice and data radio networks have thirty 800MHz channels currently licensed. Likewise, the State of Florida and private interests have significant 800MHz operations active within the immediate Leon County area. It is doubtful that additional 800MHz channels can be cleared for this project; however, expansion into the 700MHz band may be possible. At this point in time, PSCB has not initiated action to license operations on any 700MHz radio channels. The State of Florida is currently licensed on

700MHz frequencies within the Leon County area. The state Region 9 Plan for 700MHz exists as a draft, currently under review. There are no interfering TV channels within the Leon County region. Therefore, it is the intent and plan of RCD, with approval of the FCC, under the Region 9 Plan, to immediately license available 700MHz frequencies, as soon as allowed.

Proposers are required, by Section 6.2, to provide a comprehensive functional and technical proposal for a multi-site Project-25 compliant 700/800MHz simulcast trunked radio network. The new digital voice network shall utilize the necessary number of infrastructure sites, as determined by the Proposer, to meet PSCB's coverage requirements. For the purpose of proposal evaluation, PSCB's existing analog 800MHz simulcast radio network's functional and operational performance and area coverage will be used as the benchmark of comparison for all newly proposed solutions.

Proposers shall indicate a guaranteed level of portable and mobile area coverage and delivered audio quality indicative of their design. Alternative multi-site design submittals using radio technologies other than a core simulcast prime component will not be considered as acceptable. The topography of the City of Tallahassee, coupled with user expectations for highly-reliable portable radio coverage within buildings, can be most efficiently and optimally resolved using the inherent antenna space diversity and receiver-voting characteristics intrinsic of simulcast trunked radio configurations as compared to multisite-switched trunked radio configurations.

Proposers are required to furnish and install transmit and receive site equipment/configurations to meet Section 7.0 (Coverage Requirements) and that adhere to those minimum technical requirements identified in Section 5.0 for fixed site and microwave equipment.

Physical plant modifications to newly proposed PSCB-owned sites, rental sites or existing PSCB-owned sites, as necessary, to accommodate newly proposed network solutions, shall be the responsibility of the Contractor and must be factored into each Proposal Submittal's cost estimate. A Proposer's failure to disclose physical plant modification cost is contrary to PSCB's turnkey-project requirement and shall result in an unfavorable evaluation of that Proposer's Submittal.

Proposers shall provide all pertinent information concerning their equipment, relative to electrical, mechanical, structural and physical space requirements. Proposers must consider enhanced security and environmental issues in preparing their Proposal Response. Any known deficiencies in PSCB-owned sites, as well as for any newly proposed sites, that factor into the proposed solution (inclusive of electrical or lightning protection systems) shall be stated in the Proposal Response.

It shall be the responsibility of the Proposer to provide a turnkey system and to install industry accepted standard electrical grounding systems and lightning protection devices to protect proposed equipment from damage due to electrical transients on antenna systems, power, telephone and/ or control cables.

Sites determined by the Proposer to be potentially prone to flooding or other environmental problems must be so noted by the Proposer in their Proposal Response. Engineering remedies must be based on 100 Year Flood Plain data.

This 700/800MHz digital trunked radio system will be initially sized to support the existing analog network system user load but is anticipated to grow by approximately 25% additional capacity within the next five years. Therefore, the proposed new radio network shall be capable of straightforward channel expansion via 700MHz, without requiring the

replacement of previously installed equipment, to support ever-increasing user needs.

PSCB has determined that standards-based APCO Project-25 digital voice radio technology will adequately serve present and anticipated future needs for City, County and local government agencies and shall be provided by the Contractor. Future service requirements may involve the use of mobile data technologies. Proposers must include a description on how their backbone infrastructure equipment can be upgraded to support mobile data hardware and application software.

The delivery to and installation of: equipment shelters, security systems, standby and emergency power systems, towers, antenna systems, electrical grounding systems, lightning protectors, transmission lines, cable attachment hardware, tower-to-building cable tray hardware and all necessary permitting is part of this project and must be furnished by the Contractor.

All transmit/receiver site-related equipment shall be remotely controlled via digital microwave from PSCB's existing dispatch centers. Any proposed use of leased telephone interconnectivity in lieu of a licensed microwave subsystem or PSCB-owned fiber-optic facilities (if any at the time of implementation) for all or any portions of this digital radio infrastructure, unless otherwise allowed by this Specification, is unacceptable.

The Contractor shall furnish and install all wiring, wiring hardware, interface electronics and materials necessary, and at no additional cost than that identified in their Proposal/Contract, to complete the successful implementation and operation of their proposed 700/800MHz digital radio network and its related equipment groupings.

6.2 Simulcast Configuration

6.2.1 General

Section 2.0 of this Specification generally describes the PSCB's existing 800MHz Analog Voice Radio Network. It is a six-site 22-channel Motorola Smartnet-II simulcast configuration. Most of the existing equipment shelters/sites have sufficient space to support additional infrastructure equipment; therefore, Proposers are encouraged to consider reuse of these existing facilities in their newly proposed designs. The Hopkins equipment shelter, however, is known to have inadequate space for system expansion.

One additional city owned radio site, Myers Park, is available as a potential PSCB-owned site for the new simulcast configuration. Myers Park is not part of the existing 800MHz analog simulcast configuration but is used to support other City/County radio operations. Proposers, however, are free to select other sites that they believe are more appropriately suited to support their proposed digital network solution, if such locations prove beneficial area coverage, reliability and/or otherwise result in a simplified engineered design.

While the existing 800MHz Analog Voice Radio Network utilizes twenty-two radio channels, the need for this large a number of channels may no longer be necessary as some previous users of the Network have migrated onto other radio facilities or newer technologies. Therefore, Proposers are required to study radio loading traffic data supplied by PSCB to determine the optimum number of channels now needed to support existing operations.

Should a Proposer determine that fewer than twenty-two radio channels can accommodate this PSCB performance objective, and would provide an equal Grade of Service as experienced today, then a design

incorporating fewer than twenty-two channels will be considered as being responsive to these Specifications. It should be noted that the existing analog network exhibits essentially no call queuing and this level of performance shall be preserved in the new, digital voice network. In any case, Proposers shall provide Grade of Service calculations and recommendations for their proposed network solution and shall provide the per-channel cost (inclusive of equipment, services and maintenance) to expand their digital network configuration beyond that number of channels initially proposed.

6.2.2 Control Point (Prime Site) Equipment

The Control Point equipment site shall contain, minimally, the following major equipment groupings:

System Controller
Simulcast Equalization/ Sync Equipment
Console Electronics/ Audio Controller
Remote Sites Microwave Link
Battery & Inverter Systems
Adequately sized standby power
Connectivity to accessed Emergency Power
Interoperability Link Base Stations
Link Control Equipment
Radio/ Microwave Alarm System

The Contractor shall furnish and install all wiring hardware, cable trays, interface electronics, terminal blocks and materials necessary to complete the successful implementation and operation of this site and its equipment groupings. Infrastructure equipment proposed for the Control Point must meet the minimum requirements specified by Sections 5.0 and 6.

It is acceptable for the Control Point site to also serve as a co-located simulcast radio site. However, PSCB has expressed concern over the potential vulnerability of a single Control Point location, as it could inadvertently become a single-point failure mode for the new digital radio network. Therefore, Proposers are required to incorporate an optional dual-Prime Site, Redundant Control Point design into their proposed solution. This submittal requirement is mandatory and those proposals failing to include such a dual-site redundancy option will be considered as being unresponsive to these Specifications.

6.2.3 Typical Simulcast Infrastructure Site Deployment

Proposers are required to supply, turnkey, all technical support, equipment, material and labor necessary to develop each proposed simulcast infrastructure site into a functional 700/800MHz digital radio facility, fully incorporated into the specified communications system.

PSCB desires for Proposer to include language that ensures initial beneficial pricing that will be offered to the PSCB for the periods described in Section 16.

The construction of site access roads and/or availability of electric and gas utilities shall be the responsibility of PSCB. Improvements to the land spaces utilized by the towers, equipment shelters, site grounding, site civil work, security systems, on-site electrical services and standby power systems shall be the total responsibility of the Contractor.

Proposers shall refer to Sections 9.0, 10.0 and 11.0 for specific requirements pertaining to equipment shelters, towers and standby generator systems.

A typical simulcast radio infrastructure site equipment shelter shall contain, minimally, the following major equipment groupings:

800 MHz Simulcast Transmitters (Up to 22 channels)
800 MHz Simulcast Receivers (Up to 22 channels)
GPS-disciplined local oscillator
Simulcast timing/ delay equipment
Receiver Multi-coupler System
Transmitter Combiner System
Transmitter Antenna Systems
Receiver Antenna System
Tower top preamps
Remote site Microwave Links
Site Alarm Equipment
Battery & Inverter Systems
Adequately sized standby power
Connectivity to accessed Emergency Power

Infrastructure equipment proposed for all simulcast sites must meet or exceed the minimum requirements specified by Sections 5.0 and 6.0.

6.2.4 Site Power Systems

The digital radio infrastructure sites shall operate from a 24VDC or 48VDC power source, sized to sustain full trunked-feature operation for a minimum eight-hour period. The battery system shall utilize sealed lead-calcium cells and 100% redundant battery charger components rated for telecommunication service. An automatic low voltage disconnect device shall be provided to protect the battery plant from discharge-related damage. Electrical power switching/disconnect capability shall exist at all sites such that rectifiers, batteries as well as commercial power sources may be separately isolated in a manner whereby each component may be worked on safely. This switching/disconnect capability shall be designed

and configured such that radio network operation is unimpaired and uninterrupted during any repair or maintenance cycle.

Repeater stations shall be housed in forced-air ventilated equipment cabinets. Cabinets shall be free standing and incorporate drilled rails to accept standard 19" rack panels. Open relay racks are not acceptable.

A minimum of four DC-operated repeater stations shall be housed in any equipment cabinet. No more than six repeater stations should be located within a single equipment cabinet. Each cabinet shall be power-supported by redundant, metered DC/DC power converters (if required by equipment design) sufficient to sustain the continuous operation of all repeater stations installed within that one cabinet.

Each equipment cabinet shall incorporate a circuit-breaker power distribution panel incorporating protection for power amplifier, exciter and receiver groupings. Individual repeater station ventilation fan(s), if required, shall be DC powered and thermostatically controlled. Additionally, each cabinet shall be equipped with a DC-operated fan and air filtration components. Each equipment cabinet shall be protected by a DC-power circuit breaker, sized for nominal load plus 35% overload factor.

The primary battery chargers, low voltage disconnects and a primary DC circuit breaker panel shall be installed in a freestanding enclosed relay rack unit. Likewise, the system controller and console/audio controller equipment shall be housed in freestanding equipment cabinets similar to those used for repeater stations.

Each controller shall be powered either directly from the DC Battery Plant or by individual, redundant DC/120VAC power inverters whose minimum site/system capacity shall be twice that of calculated controller loads, i.e., if calculated controller load is 1KW the inverter shall be rated for no less than 2KW.

Auxiliary site loads essential to proper system operation, i.e. tower-top preamp, redundant GPS reference oscillators and receiver multi-coupler, shall be interconnected directly to the site's battery system. Additionally, the redundant GPS reference oscillators shall have a properly sized UPS between the oscillator and the battery supply.

6.2.5 Infrastructure Functionality

The proposed digital radio solution shall utilize a digital control channel scheme, whereby user-initiated feature requests and talk group/working channel assignments are processed digitally over a single control channel. The remaining twenty-one channels shall operate as working channels for analog or digital voice traffic. Use of infrastructure solutions involving embedded control signaling in lieu of this single digital control channel concept are contrary to Project-25 requirements and are not acceptable. Additionally, the single digital control channel shall have a level of redundancy sufficient to meet the overall requirements and intent of this specification for a no-break, life-critical radio communications network. Redundant control channels must automatically rotate in sequence to "exercise" this support capability in a controlled scheme. When not in use as a control channel, the previously-assigned control channel will operate in the trunked pool of digital voice channel.

The proposed solution must be robust in design to assure continued operation should any of the following failures (or combination thereof) occur:

A. Loss of transmitter(s) operation
B. Loss of receiver(s) operation
C. Failure of dispatch console terminal(s)
D. Failure of console/ audio controller
E. Failure of one site controller

F. Loss of DC-DC power converter(s)[

G. Failure of entire single site.

H. Loss of Control Channel(s)

I. Loss of Prime Site/ Control Point

Proposers shall furnish a description of the effect each of the above listed failure modes would have on their proposed network configuration. Proposers shall also describe appropriate mitigation/restoration steps to return the network to full operational capability in response to each of the above listed failure conditions.

6.2.6 Simulcast Site Antenna Systems

The Contractor shall furnish and install antenna systems specifically designed to meet the coverage requirements and objectives described by Section 7.

The Contractor shall equip all antennas, with gas tube lightning arrestor devices (Polyphasor or equivalent). All coaxial cable elements used as interconnecting jumpers for outdoor-mounted equipment or transmitter components shall be 1/2" Andrew FSJ4-50B or equal. Receiver multi-coupler interconnecting cables shall be 1/4" Andrew FSJ1-50A.

Contractor shall furnish and install hot dip galvanized side mount hardware sufficient to extend the transmitter/ receiver antennas a minimum of 60-inches from the nearest tower-structure element. Transmission lines shall be grounded at the antenna, at 100ft tower intervals, at the top most part of the tower location, at the mid point (for all towers greater than 200 feet in height), at the location where the transmission lines enter the cable bridge and at the equipment shelter's transmission line copper entry port. Only grounding strap kits, manufacturer-approved for the type of transmission line installed, shall be

provided. All cable shall be neatly run down a single leg of the tower on tower cross brace brackets. All connecting hardware will be hose clamp type of a size sufficient for the cable. No tie wraps or electrical tape will be allowed for attaching cables to towers.

Antenna system mounting brackets, components and associated transmission line attachment hardware shall be either stainless steel or hot-dipped galvanized steel.

6.2.7 System/Audio Control Scheme

The proposed radio network must incorporate high levels of redundancy to assure continued trunked system operation. To provide the highest level of trunked reliability, site/system control schemes shall be IP-based, fully redundant and utilize distributed processor technology to the maximum extent possible.

Site/System control schemes must include protected power supply units so that the loss of a single power supply will not interrupt control scheme operations.

Site/System controllers shall minimally provide the following features:

1. Working channel assignment
2. Verification of user identification
3. Assignment of call priority
4. Electronic documentation of call type, caller/ called, call time, channel assignment, etc
5. Monitor/control of special system features such as unit-specific calls, telephone interconnect and talkback paging operations
6. Ability to disable/ enable call access to specific field units

The console/audio control scheme shall be equipped to initially support the current dispatch console deployment operable in the existing analog 800MHz radio system. It is envisioned that a new consolidated 911 Communication Center will be designed and implemented within the next five years. Therefore, the proposed console/ audio control scheme must be sized to support a 100% increase in console devices (to facilitate a potential dual-migration/implementation scheme for this new Center).

The console/audio control scheme shall be configured to provide a minimum of one T-1 connection to a shared radio traffic audio recording device. This device shall be of a trunk-tracking design whereby all radio traffic conducted over the proposed number of voice channels and the digital control channel will be archived. This recording device is not part of this voice radio communications network project and will be provided by others.

6.2.8 Radio Network Alarm System

The Contractor shall furnish and install an automatic alarm system to monitor and alert, as a minimum, status (per site) on the following radio system operating parameters:

Major Alarm Conditions

1. Site Controller Failure.
2. Control Channel Failure.
3. Console/Audio Controller Failure
4. Receive Amplifier Failure
5. AC Power Failure
6. High Reflected Power, Tx Ant.
7. Battery Charger Failure, Major
8. Generator Failure
9. Tower Light Failure

10. Over/under temperature alarm (HVAC failure)

Minor Alarm Conditions

1. Door Alarm
2. Tripped DC Breakers(s)
3. Low Transmitter Output (each transmitter)
4. Battery Charger Failure, Minor
5. Low Fuel

A summed major/minor alarm indication should be displayed on each dispatch console position. This alarm indication should appear as a flag at a conspicuous area on the flat-screen display field. Determination of specific alarm point conditions shall be obtainable from any dedicated alarm system terminal position.

6.3 Subscriber Equipment

Mobile, portable and control station equipment requirements are identified in Sections 4 and 5. Specific equipment groupings and quantities are contained in Section 16, Pricing.

It is likely that a majority of indicated user equipment will be ordered at some point during the implementation process but may not be part of the initial system order. Quantities indicated are only approximate estimates and are likely to change.

6.4 Interoperability Sub-System

Computer-controlled (radio user initiated) and dispatcher-controlled interoperability link stations shall be located at the most appropriate infrastructure tower location to achieve no less than DAQ 3.4 audio quality into the distant host network. The PSCB preference for interoperability link

station placement is at PSCB-owned sites, if any are proposed in the design.

All interoperability sub-system antenna transmission lines shall be 1/2" Andrew LDF4-50A or equal and equipped with suitable lightning and electrical surge protection devices.

The proposed network shall include all computer-controller interfaces, control station(s) and antenna systems necessary to successfully provide the interoperability described above and by Section 3.2.6. Proposers may consider the re-use of existing PSCB-owned VHF, UHF and/or 800MHz base station equipment to meet identified interoperability requirements. Should a Proposer intend to reuse existing equipment, those types of equipment must be identified in the Proposal Response. If such interoperability equipment is a current component of the analog system, those items may not be removed from regular operational use if doing so would degrade existing 800MHz analog capabilities. Such equipment, however, may be tested during installation and implementation of the Proposed system solution and at the conclusion of user migration, may be converted to a resource of the new digital radio network.

Computer-controlled interoperability links shall become active only whenever a user has specifically selected, from its portable/mobile unit, any one of the interoperability link talk groups defined by Section 3.2.6. These links shall also be available for dispatcher monitoring and/or selection.

6.5 Voice Encryption

Each of the twenty-two trunked digital RF channels shall be equipped to support voice encryption using the Improved Multiband Excited (IMBE) Vocoder.

The number and tiers of radios requiring encryption has been provided in Section 16, Pricing Considerations. Encrypted mobile and portable units shall be of the same physical size and general configuration as non-encrypted units. Accessory equipment shall work compatibility with both types of units.

Proposed radio coverage throughout Leon County, in the digital encrypted mode, shall be equal to that in the digital clear mode. **Proposers shall be required, as part of an oral presentation, to demonstrate both clear and encrypted voice (IMBE) audio quality using portable/mobile equipment identical to that offered in their Proposal Response.**

6.6 Transportable Repeater Systems

Public Safety agencies also desire portable repeater systems to support various special operations involving large structure fires, police surveillance actions or disaster response events. A combination of small, single-channel repeater systems as well as larger, easily transported trunked communication systems are desired. The following information provides a functional description of both Mobile Repeater and Transportable Trunked Repeater configurations.

6.6.1 Mobile Repeaters

City/County public safety agencies may require single-channel repeater stations at the scene of large structural fires, out-of-area mutual aid responses and other localized events. In the event of a structural fire, building amplifier systems (Bi-directional Amplifiers or BDAs) are often rendered inoperable, thereby severely degrading in-building coverage at a time when it is needed most urgently.

It is envisioned that key tactical response vehicles could be configured with a compact, easily operated repeater system designed to enhance portable coverage within such small geographic areas.

Functionally, the desired Mobile Repeater should be configured as follows:

- Relatively low transmitter power, i.e., 15 watts
- Compact size
- Use of unity gain, low profile antenna
- Self-contained within a waterproof, easily transportable housing
- Have a minimum of operator controls
- Operable on up to five frequencies
- Operable using 12VDC and 120VAC power sources

It is envisioned that such systems could operate within selected vehicles or could alternatively be deployed in fixed field locations.

Proposers shall provide a full technical description of a representative Mobile Repeater device, and per-unit pricing, as part of their Proposal Submittal.

6.6.2 Transportable Trunked Repeater

PSCB has interest in obtaining fully mobile, field deployable Transportable Trunked Repeater package(s). These packages shall be a self-contained unit that can be trailered to a disaster scene. Each package shall be designed to be towed by both a full-sized pickup truck or sports utility vehicle. The trunked repeater configuration shall utilize five 700/800MHz repeater stations (5 channels) and meet the same functional and technical specifications contained in Section 5.0. The design shall incorporate an easily raised, pneumatic antenna mast, no less than 60 ft or greater than 80ft extended, that will support a 6db omni-directional antenna system.

The Transportable Trunked Repeater package shall also include a power generator of sufficient size to operate all communications equipment, area lights, HVAC and other supportive electronic systems. The package shall include an integral fuel tank sized to support 24-hours of continuous operation at full load. The transportable system shall have full lightning and electrical surge protection capability and a method of easily deploying/integrating a reliable electrical ground system for safe operation. The Transportable Trunked Repeater configuration shall have the capability to seamlessly utilize a separate generator in case of primary generator failure.

Proposers shall provide a full technical description of a representative Transportable Trunked Repeater device, and per-unit pricing, as part of their Proposal Submittal.

7.0. COVERAGE CRITERIA

7.1 General

The PSCB 700/800MHz Trunked Radio Network shall be designed to support portable hand-carried radio equipment, operated both on street and within residences/building structures, at physical locations throughout the City of Tallahassee (Urban Services Area) and Leon County. Proposers must fully identify and guarantee the coverage predicted for their proposed solution, per the functional and operational requirements of this Specification.

Proposers must take into account the following operating parameters in the development of their coverage guarantee:

A. Shoulder/microphone units with antennas will be used in most instances and shall be the normal configuration considered for the purpose of coverage design. Shoulder-level body and obstruction losses must therefore be considered in the proposed network design for both talk-in/talk-out coverage analyses.

B. Flexible, quarter wavelength antennas shall be required for portable units. Coaxial-skirt type antennas are not acceptable due to size and other mechanical limitations.

C. Building obstructions exist throughout portions of the City of Tallahassee/Leon County service area. The majority of dense building structures are located within the City of Tallahassee's Urban Services Area. These must be considered in the development of the Proposer's coverage guarantee. A listing of specific structures requiring in-building radio coverage is contained in Section 7.3

7.2 Service Area

Both mobile radio and portable radio on-street coverage must extend throughout no less than 97% of that area within that land region inclusive of Leon County, Florida plus a three-mile perimeter overlapping area extending into its adjacent bordering counties. Desired in-building portable coverage shall be no less than 95% within the entire land area encompassing Leon County, Florida.

Coverage is defined as the minimum usable signal necessary to provide a clearly readable voice signal without repetition (no syllables lost) from locations within building structures and outdoors, at street level, within the defined service area. Using the Delivered Audio Quality representations described EIA/TIA TSB-88B; the delivered audio quality throughout the service area shall be no less than DAQ 4.0 for mobile operations and DAQ 3.4 for portable operations.

All references to coverage reliability in this Specification refer to statistical area reliability. For example, the phrase "97% coverage" indicates that the total area described shall exhibit at least 97% statistical probability that coverage areas, if tested, would be found to support electrical performance which equals or exceeds that minimum signal level necessary to deliver Contracted delivered audio quality, as specified by this Specification and the Contract. However, it will not be acceptable to provide a coverage guarantee which includes a relatively large number of failed points within any one vicinity, while still meeting the overall goal of 97% coverage.

7.3 Building/Residence Coverage

Coverage shall be no less than 95% inside of the listing of representative buildings contained in Attachment G. It is desired that the majority of

these building structures shall be supported by the proposed network's fixed infrastructure (tower sites). However, Proposers shall exercise good judgment in balancing the proliferation of costly infrastructure towersites with the number of building sites improved per new installation. The use of building amplifier systems, while necessary in some instances, shall likewise be minimized to the most practical and fiscally responsible extent possible

Proposers shall specifically identify those buildings identified in Attachment G requiring building amplifier systems and shall provide a comprehensive turnkey cost to furnish and install such coverage enhancement equipment on a per-building basis.

If any of these representative buildings fail to demonstrate 95% reliable coverage (DAQ 3.4 Audio Quality per section 7.5), the following procedure will be followed:

A. Measurements will be made from every failed test point to determine if in-building loss exceeds 25dB for that specific test point.

B. If penetration loss exceeds 25dB, that specific test point will be omitted from reliability calculations.

C. If penetration loss is equal to or less than 25dB, that specific test point will remain included in the reliability calculations.

D. After determining which (if any) test points are omitted, reliability calculations will be repeated. At that time, reliability of less than 95% for the structure represents a failure for the building.

If insufficient coverage is identified, the Contractor will be responsible for modifying the system, at no additional cost to the PSCB, as may be

necessary to achieve the required reliability within the failed building. This may include any or all of the following approaches:

1.0 Bi-directional amplifier (BDA) system installed in the building.
2.0 Passive repeater systems installed in the building.
3.0 Satellite receiver systems in or near the building.
4.0 Modifying/adjusting repeater site antenna systems[1]

[1] If any changes are made to the fixed sites (such as re-orienting antenna patterns) in order to resolve building coverage failures, then a complete re-test of coverage shall be required at no additional cost to PSCB.

Note: the determination to utilize a BDA within any structure will be engineered as a part of a comprehensive system design. BDAs shall not be installed in structures in such a manner or proliferation that creates interference with the overall digital radio network's operation.

The Digital Radio Network shall support no less than 95% in-residence portable radio coverage reliability throughout the land area of Leon County For the purpose of defining in-residence portable radio loss factors, Proposers shall assume that the typical in-residence structure occupies up to 2,500 square feet and utilizes single-floor, wood-framed brick veneer type construction.

7.4 Propagation Analysis

Proposers, as part of their Proposal Submittal, shall provide a formal statement that the coverage objectives specified in Section 7.1 - 7.3 are met by their proposed solution. **ANY** exception taken to the specified coverage requirements must be clearly identified with a detailed description of the extent of the exception and the reason for which it was taken, in order for full consideration to be given to the Proposer during the evaluation process.

Proposers shall provide written descriptions of the processes and propagation models used to calculate proposed area coverages.

Coverage maps and other pertinent calculations must be submitted with the following minimum information clearly defined for each map or submittal:

A. Transmitter site power output

B. Antenna gain and type (Include transmission line losses)

C. Effective signal level necessary, at both infrastructure and user radio antenna ports, to produce DAQ 4.0 and 3.4 delivered audio quality in the typical land mobile radio environment

D. Antenna height

E. Portable unit effective radiated power

F. Portable unit effective receiver sensitivity

G. Transmitter site talk out range, individual site as well as composite coverage

H. Portable unit talk-in range, individual receiver sites as well as composite coverage

I. Signal level contours for on-street, in-residence and in-building portable coverage as well as 97% mobile/portable on-street coverage. In-building coverage maps shall depict 6db, 15db, 20db and 25db loss profiles.

In addition to the coverage objectives defined herein, the proposed network must be in compliance with: *800MHz Public Safety Radio Communication Plan Region 9 – State of Florida.*

7.5 Coverage Acceptance Criteria

Verification of the installed system's coverage is a component part of the Test and Acceptance criteria described in Section 14.0, Phasing and Implementation.

In order to avoid subjective interpretation of coverage test results to the maximum extent possible, mobile coverage testing shall be done with computer-controlled test equipment. This equipment shall automatically record the position of the test vehicle (by means of GPS positioning) at the time of a reading, and records the signal strength of at least 200 signal samples over a 40-wavelegth period for each reading taken within a test grid. Signal strength measurements shall be made continuously along the drive route.

Test grid sizes within the City of Tallahassee densely-constructed central business district and governmental areas shall be no greater than 400ft x 400ft. Grids throughout the other areas of the Urban Service Area shall utilize grid sizes no greater than 2,000ft x 2,000ft. Grids sizes outside the City of Tallahassee, and throughout the County, shall be no greater than 4,000 ft x 4,000 ft. A minimum of 1,500 accessible grids shall be tested. PSCB or designee and the Contractor shall mutually determine the size/location of grids and a suitable drive route that encompasses the entirety of accessible grids.

Field strength test results obtained throughout the coverage area, in accordance with minimally required reliability percentages, shall be of sufficient level to produce a Delivered Audio Quality (DAQ) rating of 3.4 (4.0 for mobile radio units) or higher throughout the predicted service area

to be considered passing. Mobile radio signal strength measurements shall be made from a vehicle moving at approximately 35 mph.

The device used to measure field intensity shall be stable and have a dynamic range suitable for the conditions under test. Prior to the execution of these test activities, all test equipment and data gathering equipment to be used shall be fully certified by an independent testing laboratory having calibration tools traceable to the National Bureau of Standards. These certification documentations shall be presented to RCD prior to coverage testing for verification.

The test output shall be fed into a laptop computer or an equivalent computer device. The Contractor shall submit a written and/ or graphical report containing an analysis of the test results to the PSCB or designee and Consultant daily and a formal report at the conclusion of the test. The results shall be depicted for mobile, portable in-residence and portable in-building coverage. The analysis shall include maps of the coverage area divided into grids, with the test results for drive tests displayed in each grid on a separate map. All test data, in its raw form, shall also be made available to the Consultant for independent inspection.

PSCB or designee reserves the right to disapprove any instrumentation or procedures. During these tests, the network's simulcast transmitter(s) output power shall be monitored by RCD and no adjustments made to the transmitter(s), portable/mobile radio units or test instrumentation after appropriate calibration of all involved equipment.

For portable radio voice quality testing, at least 1500 grids shall be functionally tested within the defined coverage area. PSCB's Project Representative, Consultant and Contractor will jointly determine those grid areas to be tested.

The portable radio voice quality testing shall be performed using a minimum of ten phonetically balanced phrases, to be supplied by the Contractor. A successful test measurement shall be one which requires no repetition to understand the spoken phrase and with a DAQ of 3.4 (4.0 for mobile radio units). A successfully tested grid is defined as one whereby communications from a dispatch console to a portable radio unit, as well as for the reverse path, are not less than DAQ 3.4 as described below.

DAQ	DESCRIPTION
5	Reception is very clear and message is perfectly readable. No background noise is present and every word is understood.
4	Reception is clear, but with slight background noise. Message is readable and every word is understood.
3.4	Reception is clear, but with slight background noise. Message is readable and understood with few/occasional missing syllables.
3	Background noise is evident. Message is readable and understood even with missing syllables.
2	Background noise is prevalent. Message is readable with difficulty and requires repetition.
1	Evidence that transmission being made. Voice message is barely discernible and no words are understood. Unusable.
0	No transmission is heard. No activity on the channel is evident.

Ninety-seven percent of grids must meet exceed these defined requirements for the system to be considered coverage compliant.

As an alternative to the manually conducted on-street audio quality testing, PSCB will accept automated bit-error testing techniques whereby bit-error rate can be directly correlated to delivered audio quality (DAQ). This automated test must be conducted in parallel with the earlier-described signal strength testing.

The alternatively proposed test procedure will not be accepted unless the procedure and delivered audio quality assessment relative to recorded bit-errors has been verified as statistically and functionally valid by an independent testing laboratory. Such independent verification, in the form of a Certificate of Compliance, must be provided with the Proposal Submittal. Proposals incorporating automated bit-error testing for simulcast trunked radio networks, in lieu of voiced audio quality testing, but submitted without a Certificate of Compliance shall be given no further consideration.

Audio quality testing within those representative buildings listed in Section 7.3 must be conducted ***manually***, using the voiced procedure described above. Portable audio quality testing for building structures shall be considered successfully completed if of the number of tested areas meeting the previously indicated DAQ audio requirements equals or exceeds 95% of the total number of tested areas. That is, if a hypothetical 100 areas are tested within a given building, then 95 of those tested areas must exhibit audio quality of DAQ 3.4 or greater to be considered acceptable.

PSCB shall designate the test team to participate in coverage testing. The team shall include, at a minimum in each team, a Consultant representative, a RCD staff person, Technical Sub-committee member, a

Public Safety representative and a Contractor representative. All test vehicles shall be provided by the Contractor and be off-road capable. Testing shall commence daily at first light and will cease at dusk. At least three teams will conduct the tests in the interest of timely completion. Each test team shall have a suitably equipped Marked Public Safety vehicle as an escort for the entirety of all hours of testing. Failure of Contractor test equipment shall not be considered as an acceptable reason for a Contract time extension. PSCB will not pay for retesting caused by delays or equipment failures. Testing will proceed through weekends until concluded.

Final System Acceptance shall not be achieved until the constructed radio network successfully concludes performance test requirements the as-built radio network equals or exceeds the coverage performance guaranteed by the Successful Proposal or as otherwise amended by the Contract. Testing will only be scheduled in period of peak vegetation periods, i.e., June through September. Therefore, it is critical to the acceptance testing phase that Installation and Implementation is conducted on a schedule that facilitates coverage and performance testing during these specified months. Leon County, Florida is in an area prone to tropical storms and hurricanes where such extreme weather events could interrupt or delay coverage testing. Proposers must take this factor into consideration when developing their proposed implementation schedule and proposed project completion timeframe.

8.0 DISPATCHER CONSOLE REQUIREMENTS

8.1 General

It is a functional requirement that the existing Smartnet-II Analog 800 MHz simulcast trunked system remain operational during the installation and acceptance phases of the new Project-25 Digital voice radio network. Any proposal that would cause interruption of the Public Safety Communications system for any duration must be reviewed and approved, in advance, by the PSCB or their designee. Installation of new radio dispatcher equipment must, likewise, be completed in a manner that causes no interference with the operation of the existing simulcast trunked system. While PSCB is considering the construction of a consolidated dispatch center for public safety operations, no timeline for such construction now exists. Therefore existing dispatch facilities for City, County and University operations must be evaluated by Proposers to determine the most effect means to install and implement their proposed new dispatch console equipment and associated subsystems.

Note: All consoles, wherever located shall be properly and adequately grounded and surge protected to industry standards for operator safety.

8.2 Radio Console Locations

8.2.1 City of Tallahassee Police/Fire Dispatch

The City of Tallahassee Police Department Dispatch Center is located at the Police Headquarters facility (234 E. 7th Street). This radio dispatch center serves both City Police and Fire agencies. A total of nine radio dispatcher and one-radio supervisory dispatcher positions shall be provided. Functionally, this site includes one supervisory radio dispatch position, four district dispatch positions, three City Fire dispatch positions,

two NCIC (Teletype) positions. Additionally, the site contains two dispatch console positions located at the Emergency Command Post. The new radio dispatch and fallback control station equipment must be housed within the Center's existing console furniture.

Each dispatcher position shall be equipped to selectively monitor and control any combination of talk groups, NPSPAC mutual aid and interoperability radio channels. Additionally, dispatch consoles must have the capability of establishing and/or disabling dispatcher-controlled RF/audio interoperability service links as described in Section 3.2.6.

The display equipment at each dispatcher position must be of a compact, solid-state liquid-crystal design (Flat Panel 19-inch, minimum, screen) and capable of presenting a real-time alphanumeric display of pre-configured talk groups, call status and per-call user identification.

Additionally, the Fire Department utilizes a VHF alerting/paging system that is permanently patched to the 800MHz dispatch talk group. This VHF capability will be retained and transferred to the new digital communications network. The existing Zetron Fire Engine House Alert System must be replicated, using a technology that is operationally and functionally compatible with APCO Project-25 trunked radio standards. This new Alert System shall support the existing number of fire stations (twenty two) and shall be expandable to support an additional six future stations.

The supervisory dispatch console position shall have the capability to monitor and control pre-configured talk groups, NPSPAC mutual aid channels, and dispatcher-controlled interoperability links. In addition, this console position shall be equipped to perform, at a minimum, the following system management tasks:

A. Emergency unit identification in real time.

B. Retrieval of system activity i.e. the types of calls, call duration, when made, user identification, etc.

C. Retrieval of special feature activity, i.e. interconnect usage, encrypted voice transmissions, etc.

D. Ability to remotely disable and re-enable selected field units.

E. Ability to regroup individual radios into special talk groups.

F. Assignment of user priority levels.

G. Ability to monitor summed major site/network alarm status.

The supervisory console position shall be equipped with solid-state liquid crystal flat screen monitor(s) to display real-time transactions at each dispatcher position and the system management information described above. Additionally, printer equipment shall be provided to prepare hard copy reports of accumulated system records.

8.2.2 Leon County Sheriff's Office/EMS Dispatch Center

The Leon County Sheriff's Office, located 2825 Municipal Way, includes a shared Sheriff's Office/EMS Radio Dispatch Center. A total of five radio consoles/fallback central stations shall be located at this site, having the same functionality requirements described above. A fallback dispatch location, using two 800MHz control stations, is configured at the Leon County Emergency Operations Center (535 Appleyard Drive).

The existing radio configuration uses leased telephone (Telco) circuits to interconnect this dispatch center to the radio system's Prime Site console switch. In order to improve network reliability at the S.O. Dispatch Center,

it is desired that the new radio network utilize a licensed microwave link in lieu of leased Telco circuits for connectivity to the Prime/Control Point site. An existing 200ft. tower, immediately adjacent to the Dispatch Center, is available to support this new microwave connectivity

8.2.3 Florida State University Police Dispatch Center

The Florida State University's Police Department Dispatch Center is located at Building #51, Museum Road. This facility provides both campus police dispatching services as well as seamless interoperability with PSCB Police/Fire operations. A total of two radio console/fallback control stations (CentraCom Gold Elite), as well as a dedicated Console Electronics Bank are located at this site. Connectivity between the dispatch center and the Prime/Control Point site is currently accomplished via a leased T-1 telephone circuit. The new digital radio network shall likewise provide for two radio consoles, with interconnectivity to the new Prime/Control Point via a leased T-1 telephone circuit.

In order to improve network reliability at the FSU Dispatch Center, Proposer shall provide an optional cost to furnish and install new a licensed microwave link in lieu of leased Telco circuits for connectivity to the Prime/Control Point site.

8.2.4 Florida A&M University Police Dispatch Center

The Florida A&M University Police Department's Radio Dispatcher is located at Police Headquarters, 2400 Wahnish Way. This facility operates one CentraCom Gold Elite console that is wire-line connected to the radio system's Prime/Control Point site.

The new digital radio network shall likewise replicate this dispatch point using an IP-based console device. Use of leased telephone connectivity has been problematic at this location. In order to improve network reliability at the FA&MU Dispatch Center, Proposers shall provide an optional cost to furnish and install a licensed microwave link in lieu of leased Telco circuits for connectivity to the Prime/Control Point site.

8.2.5 Tallahassee Regional Airport

The City of Tallahassee owns and operates the Tallahassee Regional Airport. The airport facility is located on a 2,743 acre site, seven miles southwest of the city's central business district and within the corporate city limits. The Airport's market service area includes a 10-mile radius, Tallahassee and 32 counties in Florida, Georgia and Alabama.

The Airport's Operations Section maintains a primary and secondary radio dispatch capability. Primary is located at the Airport Communications Center (2nd Floor) while the Secondary Center is located at the Bunker Area (1st floor). Airport is equipped with two CentraCom Gold Elite consoles and one radio control station. The consoles are interconnected to the Prime/Control Point site via a leased telephone T-1 circuit.

The new digital radio network must functionally replicate these existing radio dispatch console/control station facilities.

8.2.6 Tallahassee Public Works Station 21

The City operates the Thomas P. Smith wastewater treatment facility at 3805 Springhill Road that is immediately adjacent to the Regional Airport. A single CentraCom Gold Elite radio console is located at this facility. Connectivity to the radio network is via the leased T-1 radio dispatch

circuit used by the Tallahassee Regional Airport. Additionally, this site is equipped with an 800MHz radio control station.

The new digital radio network must functionally replicate these existing radio dispatch console/control station facilities.

8.3 **Desired Functionality**

8.3.1 Dispatch Console Reliability

Due to the critical nature of the communications services provided by these multiple public safety dispatch facilities, a high degree of reliability for the new radio dispatch console subsystem is required. The console subsystem, to the greatest extent possible, shall:

1. Be automatically self-correcting.
2. Provide continuous and automatic self-testing and diagnosis.
3. Alert the operator in the event of component or sub-system failure.
4. Allow continued operation of the remaining consoles in the event of failure to a specific console, through isolation of the defective console device.
5. Be of a design that eliminates single points of failure.
6. Interconnectivity between consoles and dispatch locations shall utilize to the greatest extent possible packet-based, in lieu of traditional circuit-switched, technologies

A high degree of modularity is likewise envisioned to reduce the number of sub-systems affected by a single component failure. Repair of sub-systems without totally disabling multiple radio console positions shall be required, as continued console operation is necessary during repair.

8.3.2 Diagnostics

The new dispatch console subsystem shall be equipped with a number of self diagnostic elements that continuously monitor and verify the correct operation of each distributed microprocessor, each audio path in the console electronics and between the console electronics and the new radio network, itself.

Diagnostic capability shall be distributed among independent and redundant subsystems and shall not rely on one central diagnostic circuit.

8.3.3 Power Supply

It is a critical requirement that power loss or surges shall not affect radio dispatch operations. Power loss or surges shall not alter the system software or operating parameters at the radio dispatch positions. External power to each console shall be supplied by a nominal 120VAC, 60 Hz, single-phase power source. An uninterruptible power supply, capable of supporting consoles, fallback radios and related equipment for a minimum 45-minute period shall be provided at each dispatch center facility. All dispatch console equipment, in whatever facility, shall be connected to an outlet on a circuit that is supported by the building primary emergency power generator, if so equipped. It is not the responsibility of the Proposer to supply either the emergency generator or the designated circuits.

8.3.4 Flat Panel Display

A state-of-the-art color, non-interlacing, 19-inch minimum Flat Panel (solid-state) display shall be provided. Each operator shall have the ability to change screen displays to suit operator preferences. No less than eight console preferences shall be configurable for each console.

8.3.5 Headset Jack Configuration

All radio consoles shall be configured for headset and local-microphone operations. Each console shall provide independent transmit audio level settings for audio inputs from the headset microphone and a gooseneck microphone, such that dispatchers may freely switch operation without affecting dispatch audio quality. Dual headset jacks shall be provided at each position for training and supervisory purposes.

8.3.6 Footswitch

Each of the radio consoles shall include a footswitch for PTT operation of the selected channel(s). The footswitch shall be heavy duty, rated for constant and continuous use, and shall be designed so as not to skid on a smooth flooring surface. The Contractor shall supply and install a switch for each console.

8.3.7 Master Time Source

A time generator system shall be provided, by the Contractor that references the Global Positioning System to synchronize all dispatch, CAD and audio recorder clocks at all radio console positions/centers. This time generator system shall be made to fully interface to and control the event-time display of the radio consoles, console audio recorder, radio network management tools, radio network alarm system, microwave alarm system and CAD systems at each radio dispatch location. This time generator shall have an adequately sized UPS, connected into an emergency powered circuit outlet.

8.3.8 Dispatch Console Positions

Each of the radio dispatch consoles shall include all controls that apply to the various channel/talk groups and auxiliary functions for the console. Each console position shall contain as a minimum:

- Select Speaker – for audio from selected channels/ talk groups, with volume control.
- Unselect speaker – for audio from unselected channels/ talk groups, with volume control.
- Transmit Function – a color-coded transmit function to control the push to talk (PTT) function for the selected transmitter(s) and/ or talk group(s).
- CTCSS Monitor or Disable Function – shall disable the receiver CTCSS decoder of selected conventional base station(s) for monitoring purposes.
- Clock – shall display time in twenty four-hour format.
- VU Meter or Audio Level Display.
- Keypad or screen representation of a keypad for numeric data entry.
- Microphone – panel mounted gooseneck microphone, cardioid pattern type. This microphone shall be resistant to interference, such as transmitting hum for lights, cathode ray tube terminals, or other devices used in the proximity of the console.
- Dual Headset Jack – a dual headset jack shall be provided which will allow for use of a headset equipped with RJ-327 type plug with

modular adapter. Separate headset volume controls for radio and telephone audio output shall be provided.

- Intercom – intercom between operator positions shall be provided. A visual display shall be provided to identify both the calling and called parties by console name. Multiple simultaneous intercom conversations between individual consoles shall be possible.

- Private Call – Selected users and dispatchers shall have the ability to selectively communicate "privately" with another individual on the system regardless of what talk group either unit is in. The call shall allow the two users to utilize a single channel resource to communicate without the participation of other units in their respective talk group.

- ID Display on the channel window for standard calls and emergency calls.

- All Receiver Mute Function – a function, which will mute the received audio from all unselected channels, shall be provided. This muting function shall be programmable in predetermined increments.

- Simultaneous Select and Instant Transmit Function – controls shall be provided that allows the operator to manually select any combination of console controlled base stations for simultaneous transmissions. Three selectable combinations shall be allowed at the discretion of the dispatcher. The patch shall utilize a single trunked channel when patching more than one talk group.

- Emergency/ Reset – consoles shall receive emergency alerts from the trunked radio system regardless of the status of the channel control window. Emergency messages shall be indicated by a flashing ID, and emergency ID character and an audible alert. Dispatcher acknowledgment of the message shall silence the audible alert and

stop the flashing display. Multiple emergency messages shall be queued in the display stack and the emergency ID character shall continue to flash until all messages have been viewed and subsequently cleared by the dispatcher.

- Alert Tones – the console shall be provided with three distinct tones used for alerting purposes over the air. Each alert tone shall be immediately broadcast, when activated, on the selected radio channel. The following selections shall be available as a minimum:

  a. Alert 1 – Steady Alert Tone – shall generate a nominal 1000 Hz steady tone
  b. Alert 2 – Warbling Tone – shall generate a warbling tone
  c. Alert 3 – Pulsed Alert Tone – shall initiate an automatic sequence, consisting of a nominal 1000 Hz tone, for a period of two (2) seconds

- Paging Encoders – Each console shall include a multi-tone paging/ signaling encoder that is accessible, minimally, through the data entry keyboard.

- Call Indication – a color-coded status call indicator shall be provided for each receiver in a channel control window on the display screen.

- Individual Volume Adjust – shall be provided for each channel on the console. Associated color-coded status indicators shall continuously show whether the channel is in the full or adjustable volume control shall be automatically bypassed when a channel is placed in select status.

- Talk group/Channel Cross Patch

- Channel/Group Name – designated channel/ group control modules shall include a minimum of eight character alphanumeric display symbols to identify the channel/group.

- Talk Group/Channel Busy Indication

8.3.9 Video Display Installation

The installation of the Video Display(s) used for the radio dispatch positions shall be desk mounted on furniture provided by PSCB. Contractor-furnished cabling shall be installed in a neat manner, which is approved by RCD and protected from physical damage. Cable raceways shall be used where possible. No cabling shall create a safety or mobility problem for dispatch personnel

8.4 Console Electronics

8.4.1 Description

Console electronic circuitry shall be housed in an equipment cabinet/ enclosure specific for each dispatch console position. When installed by the Contractor, sufficient space for front and rear servicing of this equipment shall be provided. The use of a centralized console electronic bank that supports audio and control signaling between multiple dispatch console positions is discouraged.

Console electronic enclosures shall contain the various microprocessors, console interfaces, auxiliary function interfaces and other interfaces needed for system operation. If multiple circuit cards are required in the Proposer's solution, these shall be of plug-in design and shall be able to be inserted and/or removed with power applied and the location's dispatch positions/equipment remaining on-line.

8.4.2 System Interfaces

The digital voice network's radio dispatch subsystem shall include that circuitry required to operate remotely-controlled base stations and the trunked simulcast repeaters as described by this Specification and in the Proposer's Submittal. At a minimum, each base station interface shall consist of a plug-in circuit card (or the software equivalent) containing VoIP-related circuitry, line driver amplifiers, two-wire and four-wire receive amplifiers, digital automatic level adjustment circuitry and fault-diagnostic circuitry. The interface shall be capable of remotely controlling base stations via E/M multiplex-channel and 2175Hz tone-burst signaling.

8.4.3 Auto Diagnostics/Self Healing and Diagnostic Features

The radio dispatch subsystem shall be equipped with a number of self diagnostic capabilities that shall be configured to continuously monitor and verify the correct operation of each distributed microprocessor, each audio path in the console electronics and between the electronics and each radio network base station site. In the case of voice transactions using the Internet Protocol, specialized coding shall be used to assure the timely delivery of audio packets to destinations such that recovered or transmitted audio is absent of noticeable voice delays or audio truncation.

8.4.4 Console Auxiliary I/O Functions

Unless otherwise specified within this document, all external auxiliary input and/or output (logic or relay) functions shall be controlled through an auxiliary interface module. These functions shall be controlled from the console position as required.

8.5 Fallback Control Stations

Each dispatch and supervisory position shall be equipped with a 700/800MHz trunked control station to permit radio dispatch operations to continue in the event of radio console equipment or connectivity failures. These control stations, in addition to the minimum requirements specified by Section 5.3, must contain an alphanumeric display to provide information on talk group selection and emergency call alerts.

9.0 SPECIAL SYSTEM REQUIREMENTS

9.1 **Generator Equipment Requirements**

Standby power generator systems shall be furnished by the Contractor for each proposed 700/800MHz simulcast infrastructure and prime site/control point site. The Proposer shall include the necessary labor and materials, as required, to furnish and install LPG fuel tanks, gas line attachments (where natural gas service is available), automatic transfer switches, manual-operated auxiliary generator connector facilities, generator/fuel tank foundations/platforms, alarm functionality and electrical wiring services to provide fully operational standby power systems. Generators shall be housed within outdoor equipment enclosures in accordance with the manufacturer's specifications for shock and vibration mounting, ventilation, fuel supply and electrical connections.

9.1.1 General Requirements

It shall be the responsibility of the Contractor to provide, install and test a complete and operable standby power generator with automatic transfer switch. Equipment shall be new, factory tested @ 0.8 power factor for 3-hours, and shall be installed adjacent to the required radio equipment shelters, in accordance with local area building and electrical codes.

9.1.1.1 Documentation

The following documentation shall be supplied by the Contractor for the generator set and transfer switch supplied:

- Specification and data sheets for the exact type and model generator and transfer switch supplied pursuant to this procurement, including all options and accessories included.

- Manufacturer's certification of prototype testing

- Manufacturer's warranty documents
- Shop drawings showing plan and elevation views of the equipment
- Interconnection wiring diagrams showing all external connections required; with field wiring terminals marked in a consistent point-to-point manner
- Manufacturer's installation instructions
- Operator's and maintenance manuals that outline routine maintenance and trouble shooting procedures
- Transfer switch manual and wiring diagram.

9.1.1.2 Start-Up Service

A factory authorized service representative shall provide initial start-up service and shall conduct on site acceptance testing. Load test records for the installed generator system shall be furnished to PSCB.

9.1.1.3 Type of Generator

Each generator package shall include a dual-fuel (natural/LP Gas fueled), four-cycle, engine-driven set coupled with low reactance, brushless 120/240vac single-phase generator. Each generator package shall be equipped with a temperature compensated automatic voltage regulator; under/over-speed protection function; a control panel; and high ambient-temperature cooling system.

9.1.1.4 Ratings

Output power rating of each generator shall be sized for the full calculated load for the affiliated site, inclusive of a 50% excess load factor. In no instance, however, shall any generator set be configured for less than 45KW output. Each generator shall be capable of **continuous 144-hour operation**, full single phase output @ 1.0 pf. The following specifications shall also apply:

Voltage Regulation: Maintained with +/- 2% of rated voltage for constant load between no load and full load

Frequency Regulation: Maintained within 0.5% from steady state no load to steady state rated load

Single-Step Load Pickup: 100% of rated output power, less applicable derating factors, with the engine generator at operating temperature.

9.1.1.5 Generator Set Control

Each generator shall be a remote-start type compatible with the automatic transfer switch to be supplied pursuant to this procurement. Manual starting and stopping shall be provided from the control panel.

Cranking control: Shall provide a minimum of three cranking cycles of at least 15-seconds before lockout and activation of an over-crank alarm condition.

Each generator shall automatically shut down and lock out upon:

Failure to start (over-crank)
Over speed
Low lubricating oil pressure

High engine temperature

Alarm contacts shall be provided to allow transmission of fault alarms for any of the above conditions, plus low oil pressure pre-warning, high coolant temperature *pre-warning*, low coolant temperature, low fuel and an alarm indication when the generator set is running. These alarm contacts shall be wired into and shall be reported by the radio network alarm system being supplied pursuant to this procurement.

Meters shall be provided, and located both at the generator and within the equipment shelter, to indicate output voltage, output current, running time, and frequency/RPM. An AC rheostat shall be supplied for fine tuning of the generator's output voltage. These devices shall be mounted either on the transfer switch door or a separate, remote panel.

9.1.1.6 Fuel Supply

The Contractor shall supply a new, fully painted, LP gas storage tank to be installed and secured to a concrete pad at a location near the equipment shelter and which is accessible for refueling. In some instances, depending upon local conditions, Contractor shall be required to elevate the fuel tank as necessary (depending upon Contractor's flood determination, to a height equal to the equipment shelter. The fuel tank shall provide sufficient fuel to provide six days of continuous operation of the generator set, at full load under low ambient temperature 32-degrees Fahrenheit). The tank shall be refilled after the conclusion of radio network acceptance tests.

Fuel lines shall be buried below the frost line. At any point at which the fuel line exits above grade, the line shall be insulated to reduce condensation at the regulator. A low fuel level alarm shall be provided.

All necessary regulators, drip pots, piping, meters, or other supplies needed for an installation which meets local fire and building codes shall be furnished and installed.

Contractor shall supply a full fuel tank at time of System Acceptance.

9.1.1.7 Exhaust System

A residential-grade exhaust silencer shall be installed on the generator.

9.1.1.8 Battery and Charger

A lead acid starting battery, rated for the engine type to be supplied, shall be furnished and installed with each generator package. This battery shall be float charged by a 10-ampere, voltage-regulated charger which is powered by a protected 120VAC source. Float, taper and equalize charge settings shall be provided. Battery charger shall be physically located within the generator transfer switch enclosure.

Form-C charging system alarm contacts shall be provided and connected to the radio network's alarm system to report loss of AC power, low battery voltage and excessively-high battery charging current.

9.1.1.9 Cooling System

A radiator-cooled engine is required. The radiator shall be filled with a water/coolant mixture in accordance with the engine manufacturer's recommendations.

A thermostatically-controlled water jacket coolant heater shall be provided and installed in accordance with the manufacturer's recommendations.

9.1.1.10 Base

The generator set shall be mounted on a heavy duty steel base which is, in turn, anchored to a Contractor-furnished generator foundation. The base shall maintain alignment between generator set components and shall include vibration isolators.

9.2 Transfer Switch Requirements

An automatic transfer switch which provides switching of the equipment shelter electrical load between commercial power and generator power shall be supplied and installed for each installed standby generator. Each transfer switch shall be completely factory assembled and shall contain electronic controls designed for surge voltage isolation, with voltage sensors on all phases of both input power sources. Permanently attached manual handles shall also be installed on the transfer switch. The switch shall provide positive mechanical and electrical interlocking and mechanically-held contacts. Quick-make and quick-break contact mechanisms shall be provided for manual transfer under load.

Each transfer switch shall be installed in a key locking, UL listed, NEMA cabinet to be mounted on a wall within the radio equipment shelter. The switch shall be fully wired and integrated with the engine generator set in accordance with local electrical and fire codes.

A manually-operated transfer switch, as well as appropriate power connectorization, shall be provided to allow the interconnection of an auxiliary, trailered generator set should the permanently-located generator fail in operation.

All transfer switches and accessories shall be U.L. listed and labeled, tested per U.L. Standard 1008 and CSA Approved.

9.2.1 General Specifications

Transfer switches shall be double-throw electrically and mechanically interlocked and mechanically held in both positions.

Main switch contacts shall be high-pressure silver alloy. Contact assemblies shall have arc chutes for positive arc extinguishment. Arc chutes shall have insulating covers to prevent inter phase flashover.

Form-C contacts shall be provided in each main switch position for alarm reporting purposes. These contacts shall be connected to the radio network's alarm system for reporting transfer status.

Each transfer switch shall be continuously rated for operation in ambient temperature ranges of -40 to +50 degrees Celsius. Transfer switches shall be rated, minimally, to carry the generator's full rated output, inclusive of the 50% added capacity over calculated equipment loading.

The Line-In; Generator-In and Load site terminations for the automatic transfer switch shall be protected from lightning transients using a combination of MOV and varistor technologies. All alarm and instrumentation wiring from the generator, that enters the equipment shelter, must likewise include appropriate lightning surge protection in the form of solid-state, fast-acting voltage clamp devices whose clamping voltage is closely matched to normal individual-alarm signal amplitudes.

9.2.2 Automatic Control

Transfer switch control shall be solid state and designed for a high level of immunity to power line surges and transients. The device shall be tested in accordance with IEEE Standard 587-1980 (or latest revision). Controls shall have optically isolated logic inputs, and isolation transformers for AC inputs. Relays shall be installed on all outputs.

Solid state under voltage sensors shall simultaneously monitor all phases of the standby power source and the commercial power source. Pick up and drop out voltage settings shall be adjustable. Voltage sensors shall allow for adjustment to sense partial loss of voltage on any phase.

Controls shall be provided with solid state over voltage sensors, adjustable from 100-130% of nominal input voltage to monitor the source. An adjustable time delay shall be provided.

Automatic controls shall signal the engine-generator to start upon signal from normal source sensors. A time delay start, variable from 0 to 5 seconds, shall be provided to avoid nuisance start ups. Battery voltage starting contacts shall be gold, dry type contacts which have been factory wired to a field wiring terminal block.

The switch shall transfer when the emergency source reaches the set point voltage and frequency. A time delay shall be provided for transfer that shall be continuously variable from 0 to 120 seconds.

The switch shall retransfer the load to commercial power after a time delay. This time delay shall be variable (adjustable) from 0 to 30 minutes to avoid short engine run times. The retransfer time delay shall be immediately bypassed if the emergency generator fails.

A control shall automatically signal the engine generator to stop after a time delay, which shall be adjustable from 0 to 10 minutes, the time starting on return to commercial power.

Power for transfer operation shall be from the source to which the load is being transferred.

Diagnostic indicators shall be provided to allow the last successful step in the sequence of control functions to be pinpointed. The present status of the control functions shall also be indicated. These functions, at a minimum, shall include:

Source 1 OK
Start generator set
Source 2 OK
Transfer timing
Transfer complete
Retransfer timing
Retransfer complete
Timing for stop

9.2.3 Front Panel Control Devices

A key-operated selector switch shall be provided which will provide the following functions:

Test - to simulate commercial power loss to allow testing of the generator set with or without transfer of the load.

Normal - leaves the transfer switch in its normal operating position

Retransfer - a momentary position which will provide an override of the retransfer time delay and cause immediate return to the commercial power source (if available).

9.2.4 Exerciser Clock

Each transfer switch shall be equipped with an exerciser clock which allows setting the day, time and duration of a generator set exercise/test period. Tests under load or with no load shall be selectable.

10.0 GENERAL EQUIPMENT SHELTER/TOWER REQUIREMENTS

10.1 **Shelter Design Considerations**

10.1.1 Equipment shelters shall be of a skid-mounted, bullet-resistant, prefabricated concrete aggregate type designed to house radio communications and sensitive electronic equipment.

10.1.2 The interior wall measurements shall be no less than 10ft high, 12ft wide and 30ft long. Exterior dimensions shall include nominal wall, roof and skid dimensions, to be determined by Proposer.

10.1.3 Equipment shelters must provide an interior climate suitable for the operation of sensitive electronic equipment, that is, it must be dust proof, watertight and airtight.

10.1.4 Each equipment shelter shall be supported by a concrete pad with attachment devices appropriate for securing the building assembly to survive hurricane force (no less than 140-mph) winds. In the case of sites determined by the Contractor as requiring elevation due to potential flooding, the affected equipment shelter shall be set on poured concrete piers. The finished length of piers shall extend, minimally, four feet above ground level but otherwise in accordance with Contractor's calculated flood plane elevation plus a two-foot contingency margin. The flood plain data shall be 100 Year data for the location.

10.1.5 Skid components, attachment hardware, cross-braces and lifting eyes shall be hot-dipped galvanized after fabrication.

10.1.6 Shelters shall be designed to withstand sustained hurricane force winds not less than 140-mph.

10.1.7 The exterior wall finish shall be exposed aggregate. Seeding of aggregate for an exposed aggregate finish is not acceptable. Exterior walls must be bullet proof as defined below.

10.1.8 The roof shall be a flat, tapered type having a minimum slope of 1/2" per foot from the roof centerline.

10.1.9 All exterior wall, floor and roof joints shall be sealed using a compressible, resilient sealant. There shall be no exposed roof-to-wall or wall-to-floor joints.

10.1.10 Cement used in concrete shelters shall be standard Portland cement conforming to the requirements of the "Standard Specification of Portland Cement", ASTM Designation C150. Concrete aggregate shall conform to the requirements of the "Specifications for Concrete Aggregates" ASTM C33 and "Specifications for lightweight aggregates for structural concrete" ASTM C330.

10.1.11 Exterior concrete surfaces shall be sealed with a minimum of two coats of Thoroglaze H Sealer or equal.

10.1.12 The interior floor shall be covered with 1/8" x 12" x 12" industrial weight solid vinyl floor tile. Floor color shall be light beige.

10.1.13 Walls shall have a minimum thermal insulation factor of R11.

10.1.14 The roof shall have a minimum thermal insulation factor of R19.

10.1.15 Interior wall surfaces shall be faced with white vinyl/coated wood paneling.

10.1.16 The interior ceiling surface shall be a white, vinyl coated plywood. Seams in the plywood shall be trimmed with batten strips painted to match the ceiling.

10.1.17 Building openings for the door, air-conditioners, transmission line entrance and other entries shall be framed and sealed in such a manner that moisture cannot penetrate the insulation within the walls or the interior walls of the structure.

10.1.18 A single 36"W x 72"H x 3" thick insulated bulletproof steel door, equipped with a three-point latch, shall be provided. All door hardware shall be stainless steel and incorporate three external hinges. Door shall open outward to maximize internal building utilization.

The term 'bulletproof" is defined, for this Specification, as unable to be penetrated by a .30-06 or .308 commercial cartridge firing a lead tipped, 160-grain projectile, at not more than 2600 fps muzzle velocity. The projectile will be test-fired at a range of 100 yards. The structure/material must not be completely penetrated at that distance.

10.1.19 Stainless steel reinforced, fiberglass coated exterior awnings shall be provided to protect the door entrance and air-conditioner units.

10.1.20 All hardware used on the exterior surfaces of this shelter shall be either hot-dipped galvanized or stainless steel.

10.1.21 Wafer or particleboard wood products are not an acceptable construction material for this project.

10.1.22 Contractor shall provide detailed fabrication drawings for the pier concrete foundation, designed to adequately support the proposed

building structures and wind loads. Additionally, the building frame shall be mechanically bonded to the concrete foundation. Generators and fuel tanks shall be similarly elevated for protection against rising water effects, if building locations are flood prone. Fuel tanks shall be restrained from floating and will be secured with adequate metal straps and anchors to prevent buoyancy of a tank of the required capacity at a 95% fuel empty status. Strapping and anchor materials shall be hot-dipped galvanized protected.

All building and foundation detail drawings and related calculations must be reviewed and approved by a Florida-registered professional engineer.

10.2 Shelter Electrical Requirements

10.2.1 Each shelter shall be equipped with overhead cable trays located above all planned equipment cabinet groupings. Auxiliary cable trays shall be provided to support transmission lines and telecommunications cables, as necessary. All cable tray joints shall be electrically bonded using No. 6 AWG copper wire jumpers with approved compression fittings. Trays shall be bonded to interior ground halo.

10.2.2 Individual, properly grounded 120VAC, 20A electrical circuits shall be provided to each of the equipment racks/cabinets. Each shall be terminated as a single, duplex outlet mounted on the cable tray directly above the center of each planned equipment cabinet.

10.2.3 Individual, properly grounded 120VAC, 30A electrical circuits shall be provided for each battery charger unit. Sufficient flexible conduit shall be provided above the rack to permit interconnection to chargers located at the bottom of the rack.

10.2.4 DC wiring for the radio network's battery plant and interconnection to the various equipment groupings shall be furnished and installed, as required.

10.2.5 Two 240VAC electrical circuits shall be provided for the HVAC system. Sizing of these circuits shall be determined by the Proposer.

10.2.6 Install six quad 120VAC convenience outlets as depicted by the equipment placement drawing. A total of three 15-ampere circuit breakers shall be provided (two quads per breaker).

10.2.7 Furnish and install a 120/240VAC automatic generator transfer switch and LPG generator set, per Section 9.2, Generator Equipment Requirements. All circuits and outlets for all equipment installed in the shelter shall be on the Emergency power system

10.2.8 The Contractor shall furnish and install one circuit breaker panel board. Panel board shall be sized for all of the indicated branch circuits, equipment loads plus a fifty-five percent growth factor.

10.2.9 The Contractor shall furnish and install an interior and exterior electrical ground halo and power surge protection for each location, as follows:

A. A single No. 2AWG copper conductor ground halo shall be installed on all four interior walls, spaced approximately six-inches below ceiling level. The halo shall include a twelve-inch gap/break at the furthest point from the single-point ground attachment.

B. Ground halo shall be mounted on six-inch standoffs, located on twelve-inch centers. It shall be affixed to the transmission line ground entry port, buss bar.

C. All equipment cabinets, racks, transmission line entrance and cable trays shall be individually bonded to the halo using No. 6AWG copper conductors with approved compression fittings.

D. Interior halo shall be bonded to an exterior, buried ground network using low impedance copper conductors.

E. Electrical lightning protector shall be Polyphasor model IS-IL 240BP or equal.

F. A single, stranded No. 00AWG copper exterior ground system shall be installed about the building and tower perimeter, located approximately 18" below grade and exothermically bonded to the building frame, interior halo, transmission line ladder, generator system and radio tower legs. All grounding shall meet a required 3 Ohms or less. All grounding practices and methods shall meet a recognized standard such as IEEE or Motorola R 56.

10.2.10 Install 4-foot, 2-bulb, 80-watt fluorescent light fixtures as necessary to provide effective illumination for each equipment cabinet. Emergency exit and inter lighting as required by fire code. Exterior lights above the door and area lights on each of the exterior shelter corners shall be controlled by at a maximum of two light switches located just inside the door opening on the side away from the hinges at shoulder height.

10.3 HVAC Requirements

10.3.1 The Contractor shall furnish and install a dual, wall-mounted heating and air-conditioning system appropriately sized for each shelter/equipment heat load. Each HVAC unit shall incorporate

circuitry to ensure that both compressors do not attempt to restart at the same time. There shall be timer circuits to rotate use of the air conditioner units on a weekly basis. Additionally, sensors may cause both air conditions to run simultaneously as needed to reduce the internal temperature to a safe operating level.

10.3.2 Equipment shall be furnished with compressor anti-cycle circuitry to prevent short-cycle starts against high compressor head pressure.

10.3.3 Equipment shall be furnished with a compressor hot gas bypass to minimize electrical power surges as a result of compressor cycling.

10.3.4 Design of HVAC system shall take into consideration the following environmental conditions:

Desired Interior Temperature:	72 degrees F
Maximum Outdoor Temperature:	98 degrees F
Minimum Outdoor Temperature:	30 degrees F
Transmitter Power Dissipation:	7,000 watts
System Controller:	850 watts
Battery Charger/Inverter:	3,000 watts
Lighting:	750 watts (Intermittent)

10.3.5 Buildings shall incorporate a thermostatically controlled fan system designed to operate in the event of a total HVAC failure and where the building's interior temperature exceeds 98°F. This system shall incorporate appropriate dampers, screens and filters to limit dust and insect entry into the building.

10.4 Alarm Systems

10.4.1 The Contractor shall furnish and install an over/under temperature sensor, continuously adjustable over the range of 30°F to 98°F,

having independent Form-C output contacts suitable for high/ low temperature alarm activation.

10.4.2 The Contractor shall furnish and install a door entry alarm sensor, magnetic type, having a Form-C contact closure output.

10.4.3 The Contractor shall furnish and install a single-loop smoke/ fire alarm system.

10.4.4 Smoke/fire alarm sensors shall be mounted above battery charger equipment, and in vicinity of AC power distribution panel board.

10.4.5 Smoke/fire alarm panel shall have visual indicators depicting individual alarm sensor status.

10.4.6 Smoke/fire alarm panel shall operate from both 120VAC and 12VDC battery power sources.

10.4.7 All shelters shall be equipped with an inert gas fire suppression system (FM 200 or similar) that is environmentally approved and not injurious to communications staff. The system shall be connected to the communications and shelter fire/ smoke system alarms. Trigger of the system causing a gas discharge shall cause the air conditioners to automatically shut off. The air conditioner units must be manually restarted to purge the shelter of the gas, after all evidence of combustion is resolved. All necessary plumbing and overhead dispersal equipment shall be provided. The system shall have modes for test and maintenance that do not trigger activation. The system shall be installed and delivered with a primary tank, on line and a spare, full tank, off line. In the event of a discharge during testing by the vendor, PSCB shall not be responsible for replacement or refill of the system. Refill of the system primary tank, by the vendor, due to an actual event, the

spare tank shall be placed in line and the discharged tank shall be refilled and returned as the spare within 48 hours by the vendor. The vendor must have a representative within Leon County who must respond within two hours of a discharge or system failure

10.5 Tower Requirements

10.5.1 The basic standard for the design of newly required steel antenna towers, wave guide bridges and supporting structures, shall be ANSI/EIA-222-F or latest version.

10.5.2 Towers shall be either a self-supporting or guyed triangular shaped, solid-rod structure having an overall height to be determined by the Proposer, based on the requirements of area coverage and availability of clear Microwave paths for site connectivity. Limits of available space in certain areas may dictate the use of Self-support towers.

10.5.3 Each tower shall be designed for a minimum sustained 140-mph wind speed, with the full complement of necessary antennas and required lights and other Federally-required equipment. Proposal must take into consideration any current antennas that must be retained by RCD for other communications needs

10.5.4 Antenna loads shall be as determined by Proposer, however, the design shall include a minimum 30% growth factor.

10.5.5 All fabricated tower assemblies and parts shall be hot-dipped galvanized after fabrication per ASTM Standard A123. Hardware shall be galvanized per ASTM Standard A153 and B695. Other types of zinc coating or plating are not acceptable.

10.5.6 Towers shall be supplied with a full-length transmission line ladder designed to accept all transmission lines needed for the proposed design plus a 30% growth factor.

10.5.7 Towers shall be equipped with an outside climbing ladder/ cable type safety device and strobe-lighted in accordance with FAA and OSHA requirements.

10.5.8 Antennas, tower top pre-amps and transmission lines as specified by the licensed frequencies and system design, shall be provided and installed by the Contractor.

10.5.9 Electrical Grounding Systems to meet industry standard, as specified above, shall be furnished and installed by the Contractor in accordance with the following minimum practices:

- Install a ground ring around the base of the tower, consisting of 8'x 5/8" ground rods driven to a depth necessary to meet the required resistance measurement of the specifications, adjacent to the foundation of the tower at each leg. Ground rods are to be interconnected by a minimum #00AWG stranded copper wire, which is Cadwelded to each top most ground rod. Copper wire and ground rods are to be installed in a trench of a minimum depth of 18-inches below finished grade. Maximum spacing

between rods shall be 15-feet. Each tower leg shall be bonded to the ground ring by #00 stranded copper wire, which has been Cadwelded to the factory provided tab, manufactured onto the tower leg and to the closest ground rod, avoiding any acute bends in the wire. All paint shall be removed from the tab on the tower leg (if painted) at the point the ground connection is made. At the completion of the Cadwelding process, the welded area shall be resealed with a cold galvanizing compound and repainted if originally painted.

- The ground rod/ring system shall extend around the perimeter of the equipment shelter, transmission line copper entrance port into the shelter and to the perimeter fence.

- Bond all transmission line outer shields to the structure at the top of the tower immediately below the antenna pig tail, mid point if the tower is over 200-feet tall, and at the bottom section of the tower at a point one foot above the bend made in the line to attach it to the Waveguide Bridge and at the copper plate at the entry port into the tower.

- Fencing shall be grounded to the ground ring via #2AWG solid copper wires, bonded, using Cadweld fittings at each fence post. All Cadwelding locations shall be cold galvanized as above.

- Antenna mounts shall be grounded to the tower. A copper ground rod shall be mounted to the topmost part of the tower to be the highest point on the structure. A #00AWG stranded copper wire shall run down the tower leg closest to the shelter

entrance port and all to ground connections of antenna cables and fixtures on the tower shall be made to this copper wire. This shall terminate at the copper ground rod at that closest leg foundation and be fully bonded into the ground ring.

- The shelter's interior halo ground and transmission line copper inside entrance port (buss bar) shall be bonded to the outdoor ground system.

- A ground test well shall be provided at a minimum of two points along the ground ring. The test wells shall consist of 4"x 2' PVC pipe, with a screw type cap installed. The test well shall allow measurement of ground system resistance at opposite corners of the tower.

- Grounding system resistance shall be measured to be 3-ohms or less between any point on the ground system and earth ground.

10.6 Required Tower Submittals

10.6.1 The Contractor shall furnish wind-load stress and foundation calculations used in the design of the proposed tower structure.

10.6.2 The Contractor shall furnish documentation approved by a registered professional engineer, licensed in the State of Florida, certifying that the proposed tower and foundation meets the requirements of ANSI/EIA-222F or latest version and is in accordance with these Specifications. PSCB would prefer that the Contractor utilize Leroy Pate Tower Structural Engineering, Inc of Tampa, Florida, as this firm has been used exclusively to support

the current analog radio system facilities and Pate has the necessary documentation and familiarity with PSCB's current radio infrastructure sites and related structures.

10.6.3 Prior to proposal submission, Proposers shall, at their own expense, make such additional investigations on site conditions, as necessary, for the successful and accurate completion of their Proposal Submittal. PSCB shall permit site inspection access during normal business hours with an escort from the Radio Communications Department (RCD).

10.6.4 Proposers shall furnish documentation as to any special condition or restriction applied to the use of materials, products or equipment contained in their Proposal. Contractor shall provide to RCD a minimum of two sets of completed as-builts on each tower and shelter installed in this project. This shall include engineering and design document from the tower and shelter manufacturer

10.6.5 The Contractor shall furnish written certification that all installed tower components have been assembled and hot-dipped galvanized in accordance with these minimum requirements.

10.6.6 The Contractor shall provide a detailed report of electrical ground resistance measurements of the completed, as-installed, electrical grounding system, on a per-site basis with field drawings to indicate the measurement at a specific location.

11.0 SITE WORK REQUIREMENTS

11.1 **Site Preparation and Sub-grading**

11.1.1 General

Site clearing, initial earthwork and rough grading and final grading as needed for installation of towers and equipment shelters is the responsibility of the Contractor. The following describes a set of minimum requirements for the execution and completion of site-related construction activities.

11.1.2 Performance

1. Dewatering:

   a. Control grading around excavations to prevent surface water from flowing into excavation areas

   b. Drain or pump as required thereby maintaining all excavations, trenches and pier holes free of water from any source and discharge to approved drains or channels. Commence dewatering action when water first appears and continue until work is complete to the extent that no damage will result from hydrostatic pressure, flotation, or other causes

   c. Use pumps of adequate capacity to insure rapid drainage of area, and construct and use drainage channels and sub-drains with sumps as required

   d. Remove unsuitable excessively wet sub-grade materials and replace with approved backfill material

2. Compaction:

   a. Compact sub-grades, fills, embankments and backfills using spreading equipment, tamping rollers, rubber-tired rollers, vibratory compactors, or power tampers, as required to obtain reasonable uniformity. Nuclear soil testing results are required to be provided in a report to the Consultant

   b. Perform within moisture content range as specified to obtain required results with equipment used

   c. Achieve minimum densities specified as references to:

      1. Cohesive soils - 95 percent maximum density at optimum moisture, AASHTO T99

      2. Cohesionless Soils – 70 percent of maximum relative density

         a) ASTM, STP 479 Bunnister method

         b) USBR - E12 relative density

         c) Relative density, ASTM D2049

      3. Cohesionless Soils

         a) PSCB or designee may approve the use of AASHTO T99 for certain cohesionless soils using at least 100 percent of maximum density

      4. Compact control fill and backfill in not over 8-inch lifts/ layers and compact to between 90 % to no more than

96 % of maximum density at optimum moisture AASHTO T99

11.2 Drilled Pier Foundations

11.2.1 General

1. Extent of Work:

   a. Perform all drilling and excavation and supply all labor and materials to construct drilled pier foundations, as necessary

11.2.2 Performance

1. Quality Assurance:

   a. Field Inspection by PSCB designee - quality control

      1. PSCB's Project Representative will be designated to be responsible for field inspection of the drilled pier foundations. He will transmit, in writing, to consultant and Contractor any materials or methods observed by him, which do not conform to this specification and, if required, will not be considered for payment. The PSCB's Project Representative must inspect each drilled pier. Specific responsibilities of the PSCB's Project Representative will be to:

         a) Observe drilling excavation of drilled pier foundations. Ensure the placement of anti-caving physical barriers or the use of special drilling mud to prevent excessive cavitation

b) Inspect material and equipment used in construction of drilled piers

c) Inspect bearing elevation of drilled piers

d) Observe placement of concrete and rebar within the drilled pier foundation to match design specification. Ensure that no excessive earth contamination occurs. Contamination of poured concrete is sufficient to cancel the pour and request engineering inspection

e) PSCB representative shall photograph or film all foundation excavation and pouring activities

2. Contractor Qualifications

a. A minimum of two years experience in drilled pier construction, including experience with similar subsurface material, water conditions, shaft sizes, and special techniques as required

3. Drilled Pier Details

a. Drilled shaft dimensions and top elevations shall be in accordance with foundation design calculations and drawings

b. The drilled shaft bearing or bottom elevation shall be at the elevation indicated, unless it is determined by the PSCB's Project Representative that the bearing elevation should be adjusted

4. Drilled Pier Excavation

   a. Excavate drilled shaft to dimensions and required elevations as indicated. Maintain sidewall stability during drilling and extend excavation to suitable material

   b. Determine suitability of supporting material for drilled piers as follows:

      1) Inspection of each pier will be by the PSCB's Project Representative and Contractor

   c. Remove from bottom of drilled piers, loose material or free water in quantities sufficient to cause settlement or affect concrete strength as determined by the PSCB's Project Representative

   d. Install temporary casing, where required, to prevent caving of drilled pier sides or excessive seepage

   e. Dewater all drilled pier excavations prior to cleaning, inspection, and placing concrete

   f. Each drilled pier must be inspected and approved by the PSCB's Project Representative before any concrete may be placed

5. Excavated Material

   a. Dispose of any excavated material at locations approved for that purpose

SPACE

6. Reinforcing Steel

   a. Place reinforcement for drilled piers in accordance with foundation design documents

   b. Place bars as shown on foundation drawings with concrete cover of not less than 3-inches where exposed to soil

   c. A reinforcing cage shall be designed as a structural element and braced to retain its configuration throughout the placing of concrete and the extraction of the casing (if used) from the shaft

7. Concreting

   a. Dewater drilled piers and maintain the excavation free of water prior to placing concrete

   b. Place concrete immediately after final inspection

c. Place concrete immediately after completion of excavation and after PSCB's Project Representative has completed his inspection. Do not leave uncased excavations open over night

d. Free fall concrete (not over 6') may be used provided it is directed through a hopper, or equivalent; such that fall is vertical down center of shaft without hitting sides. Vibrate concrete, but only after casing, if used, has been pulled

e. Place concrete in pier in one continuous pour operation from bottom to top

f. The PSCB's Project Representative will provide inspection during the removal of casing and placing of concrete. Withdraw casing, if used, only as shaft is filled with concrete. Maintain adequate head of concrete to balance outside soil and water pressure above the bottom of the casing at all times during withdrawal. Specific procedures that the Contractor will follow to accomplish this objective shall be submitted for approval

g. Where casing is removed, provide specifically designed concrete with a minimum slump of 5-inches and with a retarder to prevent arching of concrete (during casing pulling) or setting concrete until after casing is pulled. Check concrete level prior to, during, and after pulling

casing. Pull casing before slump decreases below 5-inches as determined by testing

h. During casing extraction, upward movement of the reinforcing steel shall not be permitted. Downward movement should not exceed 2-inches per shaft length

i. Remove all water and concrete contaminated with soil, or water before resuming concrete placement

j. Center reinforcing cages in the drilled pier excavation and suspend them in an approved manner prior to placement of concrete to the cutoff elevation

k. Leave forms on pier for a period of three days

l. Set anchor bolts to the manufacturer's required tolerances, using substantial templates or other approved method

11.3 Concrete, Forms and Reinforcement

11.3.1 General

1. This Specification includes concrete, forms, and steel reinforcement as used for:

   a. Drilled pier foundations with square caps for steel structures

   b. Concrete pads for transformers and breakers

c. Equipment shelter and tower foundations

d. Cable trench

2. Quality Assurance

a. Applicable Standards

1) American Concrete Institute (ACI)

a) ACI 304 - Recommend Practice for Measuring, Mixing, and Placing Concrete

b) ACI 305 - Committee Report on Hot-Weather Concreting

c) ACI 306 - Committee Report on Cold-Weather Concreting

d) ACI 315 - Manual of Standard Practice for Detailing Reinforced Concrete Structures

e) ACI 318 - Building Code Requirements for Reinforced Concrete

2) American National Standards Institute (ANSI)

a) B 1 8.2.1 - Square and Hex Bolts and Screws, Including Askew Head Bolts, Hex Screws, and Lag Screws

b) B 1 8.2.2 - Square and Hex nuts

3) American Society for Testing and Materials (ASTM)

a) A36 - Structural Steel

b) A82 - Cold-Drawn Wire

c) AI 85 - Welded Steel Wire Fabric for Concrete Reinforcement

d) A307 - Low-Carbon Steel Externally and Internally Threaded Standard Fasteners

e) A615 - Deformed Billet Steel Bars for Concrete Reinforcement

f) C31 - Making and Curing Concrete Compression and Flexure Test Specimens in the Field

g) C33 - Concrete Aggregates

h) C39 - Compressive Strength of Cylindrical Concrete Specimens

i) C94 - Ready-Mixed Concrete

j) C 143 - Slump of Portland Cement Concrete

k) C 150 - Portland Cement

m) C309 - Liquid Membrane-Forrning Compounds for Curing Concrete

n) C494 - Chemical Admixtures for Concrete

4) Midwest Concrete Industry Board (MCIB)

11.3.2 Equipment and Materials

1. Concrete Materials

a. Cement

1) Conform to ASTM C 150. Portland cement Type 1

b. Water

1) Water shall be clean and free from injuries amounts of oil, acids, alkalines, or other deleterious substances. Any potable drinking water will be acceptable

c. Fine Aggregates

1) Clean natural sand. Manufactured sand may be used upon written approval of PSCB designee. Conform to ASTM C33

d. Coarse Aggregates

1) Clean crushed stone or processed gravel, not containing organic materials. Conform to ASTM C33

e. Air Entertainment

1) 4-6 percent air shall be used in all concrete

f. Water Reducing Admixture

1) Conform to ASTM C494, Type A

2. Concrete Mix

a. Ready-mixed Concrete

1) Concrete shall meet requirements of ASTM C94, and of materials and proportions specified

2) Ready-mixed concrete plant shall be subject to approval of PSCB's Project Representative

3. Forms

a. Form materials; use one of the following:

1) Exterior grade plywood 5/8 inch thick

2) Approved wood fiberboard

3) Dressed lumber, free of loose knots

4) Approved preformed economy forms

5) Forming materials may be treated with approved form oil for ease of form removal

b. Form Ties

1) Approved break-back type

4. Steel Reinforcement

a. Reinforcement Bars

1) Conform to ASTM A615, Grade 60 for all bars No.4 or larger

b. Tie and-All No.3 Bars

1) Conform to ASTM A615, Grade 40

c. Welded Wire Fabric

1) Conform to ASTM A185, using bright basic wire conforming to ASTM A82. Wire gauge No. 11 or smaller shall be galvanized

5. Grout

Use unshrink, easy flow type grout as approved by PSCB's Project Representative

6. Anchor Bolts

a. Provide all anchor bolts required for complete installation

b. Anchor bolts and accessories shall conform to ASTM A307 using A36 steel

c. Use hexagonal bolts and nuts conforming to ANSI B 1 8.2.1 and B 1 8.2.2

d. All exposed area of anchor bolts and nuts, plus a minimum of three inches of embedded area, shall be hot-dipped galvanized

e. Install as indicated on foundation drawings

11.3.3 Performance

1. Field Testing

a. Field testing of concrete and making of concrete test cylinders will be performed by an independent testing laboratory approved by the City of Tallahassee Permit department

b. Laboratory Testing

1) Laboratory for testing shall be selected and paid by PSCB

2) Laboratory will furnish cylinder molds with cap seals or adequate means of identification

3) Cylinders shall be tested conforming to ASTM C39. Average strength of two test cylinders (at 28 days) shall be used as result of the test. Break one test cylinder after 7-days curing, one after 14-days, and two after 28-days

4) Results shall be provided to the Project Representative in a formal report. A copy shall be provided to the Consultant and Contractor

2. Low Strength Concrete

a. Defined as concrete whose 7-day and 14-day test (average of 2 cylinders) is less than 70% and 85%, respectively, of the specified minimum 28-day compressive strength

If concrete does not meet the 4000 lb. test in twenty-eight days, the Contractor shall pay for the cost of the core test

b. Disposition of Concrete

1) Concrete shall remain accessible with no other work performed that relates to or depends upon the questionable concrete until a formal decision as to the disposition of the concrete is given by PSCB's Project Representative

2) Low strength concrete shall be removed and replaced if so requested by PSCB designee

3. Placing of Concrete

a. Preparation

1) Clean bonding surfaces free from laitance and foreign materials

2) Place concrete on property prepared and unfrozen sub grade and only in dewatered excavations

3) Do not deposit partially hardened concrete or concrete contaminated by foreign materials

b. Placing Concrete

1) Conform to ACI 304

2) Place within 60 minutes after mixing, except PSCB designee may extend the period to 90 minutes (maximum) dependent upon weather conditions

3) Place in horizontal layers not exceeding 18-inches

4) Vibrate concrete to produce solid mass without honeycomb or surface air bubbles

c. Curing Concrete

1) Cure with liquid membrane-forming compound conforming to ASTM C309, Type I. Apply according to manufacture's recommendations

2) Apply curing compound to all exposed surfaces immediately after removing form or after finishing concrete

3) Keep formwork wet until stripped

d. Cold Weather Placing

1) Conform to the practice recommended in ACI 306 when the temperature is below 40-degrees F or is likely to fall below 40-degrees F during a twenty-four hour period after placing

2) Protect pier caps and other concrete from freezing by the use of insulating blankets

e. Hot Weather Placing

1) Conform to practices recommended in ACI 305 when temperature is 90-degrees F or above or is likely to rise above 90-degrees F within a twenty-four hour period after placing

4. Construction Joints

a. Locate where indicated. Conform to AC 318

b. Clean and break laitance or other foreign material from bonding surface. Bed with 1-inch of grout for bonding in horizontal joints

5. Surface Finishes

a. Float Finish

1) Compact, accurately screed, and wood float all slabs to a true uniform surface

2) Test surface with straightedge and eliminate high and low spots of more than 1/8 inch in ten feet

3) Use this finish in addition to the finishes specified below for all surfaces as indicated

4) Use a final finish for footing slabs not exposed

b. Hand-troweled Finish

1) Finish surface as in Float Finish and in addition, trowel and steel trowel to obtain a smooth dense finish after concrete has hardened to ring under the trowel

2) Use this finish on all floors, slabs, and equipment bases not specifically designated for a different finish

c. Broom Finish

1) Finish surface as in Float Finish and, in addition, draw a stiff bristled broom across the previously floated surface

2) Corrugations shall be uniform in appearance, not more than 1/16-inch in depth and shall be perpendicular to direction of traffic

3) Use this finish on all outdoor slabs subject to vehicular or pedestrian traffic and areas to receive grout

d. Burlap Finish

1) Apply burlap surface treatment to exposed edges of slabs, curbs and foundations

2) Wet and fill all voids using mortar with the same sand-cement ratio as original concrete. Use approximately 20 percent white cement to match concrete color

3) Strike off all excess mortar flush with the surface using a burlap or canvas cloth with a circular motion

4) Remove all rough spots and rub with cloth to leave a surface of uniform texture and appearance

5) Finish shall result in a coating of mortar that will fill all small voids and air holes leaving a smooth surface

6) Cure as specified under Curing Concrete

6. Defective Surface Treatments

a. After removal of forms, remove all fins, projections and form ties

b. Grout and cure all voids, damaged areas, and tie holes

7. Forms

a. Treat forms with an approved oil or lacquer prior to placing reinforcement

b. Wet forms with clean, clear water prior to placing concrete

c. Adequately brace and stiffen forms to prevent deflection and settlement

8. Steel Reinforcement

a. Place accurately, tie at intersection, and support on chairs. Conform to ACI 318

b. Tie securely with 16 gauge or larger annealed iron wire

c. Splice steel not less than 30 bar-diameters for A615, Grade 40, and 42 bar-diameters for A615, Grade 60, unless otherwise indicated

d. Splice plain bars not less than twice that for deformed bars

e. Lap welded wire fabric not less than the length of one mesh

f. No.3 bars to be Grade 40, with all others to be Grade 60

g. Provide ¾-inch chamfer for all exposed edges of concrete, vertical and horizontal

11.4 Fences and Gates (Chain-Link Security Type)

11.4.1 General

1. Description

a. This section covers chain-link fabric fence and gates

2. Quality Assurance

a. Applicable Standards

1) Federal Specifications (FS)

a) FF-BO-575 - Bolts, hexagon and square

b) RR-F-191 - Fencing, wire and post, metal and gates, chain-link fence fabric, chain-link and accessories

c) RR-F-221 - Fencing, wire, barbed wire, woven-wire and netting, fence post and accessories

11.4.2 Requirements

a. Manufacturer's standard materials where such materials conform to these Specifications or have been approved by Engineer

b. Conform to FS RR-F-191 except as indicated or specified otherwise

c. Fence height – 8 ft high galvanized chain link with 4-strand barbed wire at top (9½ feet overall height)

d. Gate widths as indicated on layout drawings

e. Finish for framework and appurtenances (excluding fabric) – Galvanized with minimum weight for zinc per square foot as follows:

1) Pipe – 1.8 ounces

2) Hardware and accessories – conform to FS RR-F-191

3) Barbed wire – 0.80 ounce

f. Finish for fabric

1) Galvanized per ASTM A392, Class-2 with 1.8-ounce, minimum weight, for zinc per square foot or

2) Aluminum coated per ASTM A491, Class-2 with 0.40-ounce, minimum weight, for aluminum per square foot

g. All fence and gates to have 4-strand barbed wire at top

h. All materials furnished shall comply with the above requirements.

11.4.3 Fabric

a. No.9 gauge, 2-inch diamond mesh chain-link fabric

b. Top and bottom selvage twisted and barbed

c. Fabric fastenings of 9-gauge galvanized wire ties

11.4.4 Posts, Top Rail and Braces

a. Posts

1) End, angle, corner or pull posts – 3-inches O.D. at 5.79 pounds per foot

2) Line posts – 2.5-inches O.D. at 3.65 pounds per foot

3) Gate posts – 4.0-inches O.D. at 9.10 pounds per foot

b. Top rail

1) 1.625-inch O.D. standard weight steel pipe

2) 18-foot minimum length of each section

3) Expansion type coupling for each joint

c. Post bracing

1) Diagonal truss rods 3/8 inch in diameter equipped with truss tightener

2) Horizontal braces – 1.660-inch O.D. at 2.27 pounds per foot

d. Post tops

1) Designed as a weather tight closure cap for tubular posts

2) Malleable iron or pressed steel

e. Barbed wire supporting arms

1) Single arm at 45-degrees with vertical, sloping to outside of fence

2) Constructed for attaching four rows of barbed wire to each arm and designed as a weather tight closure cap for tubular posts

3) Designed for 200-pound minimum pull down load

4) Attached to steel posts or integral with post top

6) Provided with openings to receive top rail

6) Malleable iron or pressed steel

f. Stretcher bars

1) One piece, full height of fabric

2) 3/6 inch x ¾ inch, galvanized

3) Bands of galvanized steel or malleable iron

g. Bolts

1) Zinc coated
2) Conform to FS FF-B-575

11.4.5 Barbed Wire

a. Two-strand, l2½ gauge wire with 4-point barbs 5 inches O.C.

b. Conform to FS RR-F-221, Type 1, Style 2

c. Four rows required on all fence and gates

11.4.6 Gates

a. Framing

1) Frames of tubular members, 2-inch O.D. at 2.72 pounds per foot

2) Intermediate horizontal and vertical members for proper gate operation and for attachment of fabric, hardware and accessories

3) Frames assembled by welding or watertight galvanized steel rigid fittings

4) Diagonal cross bracing of 3/8 inch diameter adjustable truss rods to provide frame rigidity

5) Gate end members extended one foot above top members to receive four rows of barbed wire

b. Hardware

1) Hinges of pressed or forged steel, or malleable iron, non-lift-off type, 1 1.2 pair per leaf

2) Latches and gate stops – double leaf

a) Plunger-bar type latch, full gate height, designed to engage gate stop of flush-plate type with anchors

b) Locking device and padlock eyes an integral part of latch

c) Keeper to automatically engage gate leaf and secure free end of gate in full 90-degrees open position

3) Latches – single leaf

a) Forked type to permit operation from either side of gate

b) Padlock eye as integral part of latch

11.4.7 Performance

1. Installation

a. Fence

1) Follow general contour of ground and properly align

2) Posts

a) Set in concrete retaining wall. Trowel finish tops of footings and dome to direct water away from posts

b) Install plumb and in straight alignment

c) Space ten feet center-to-center maximum

d) Temporarily brace until concrete in bases has set

3) Post Bracing

   a) Install at each end and gatepost, and on each side of corner posts

   b) Install after concrete in post bases has set

   c) Install so posts are plumb when diagonal rod is under tension

4) Top Rails

   a) Run continuously through post caps or barbed wire supporting arms

   b) Install expansion coupling at each joint

5) Tension Wire

   a) Weave through the fabric and tie to each post with minimum 6 gauge galvanized wire

6) Fabric

   a) Stretch taut with equal tension on each side of line posts

   b) Fasten to top rail and steel posts with wire ties

   c) Space wire ties at 12-inches O.C. maximum on posts and at 24-inches O.C. maximum on top rail

7) Stretcher Bars

a) Thread through or clamp to fabric 4-inches O.C.

b) Secure to posts with metal bands spaced 15-inches O.C. maximum

c) Install at each gate, pull and end post, and each side of corner post

8) Barbed Wire

a) Attach four rows to each barbed wire supporting arm. Pull wire taut and fasten securely to each arm

b) Install four rows above fabric and on extended gate end members of gates

b. Gates

1) Install plumb, level, and free swinging through full opening without interference

2) Install all hardware, including keepers, ground set items and flush plate in concrete to engage gate stop

3) Furnish and install gate alarms

4) Adjust and lubricate as necessary for smooth operation

c. Repairing Damaged Coatings

1) Repair any damaged coating in the shop or field by recoating with compatible and similar coating.

2) Apply per manufacturer's recommendations.

d. Danger Signs

1) Furnish and install signs as approved by PSCB designee.

Note: All fencing at any site must be exothermically bonded to the site's electrical grounding system. All major posts, gates and fabric must be integrated into this bonding scheme. All locations of exothermic bonding must be properly treated by recoating with a compatible and similar coating to prevent corrosion.

11.5 Crushed Rock Surface

11.5.1 General

1. Description

a. This section includes crushed rock surface and method of depositing for the placement of permanent crushed rock surfacing in equipment shelter areas

b. Related work specified elsewhere

1) Site preparation and earthwork – Section 10.1

2) Herbicide application – Section 10.6

2. Quality Assurance

a. Applicable Standards

1) American Society for Testing and Materials

a) C117– Test for Materials Finer than No. 200 Sieve in Mineral Aggregate by Washing

b) C131– Test for Abrasion of Coarse Aggregates by Use of Los Angeles Machine

c) C136 – Test for Sieve or Screen Analysis of Fine and Coarse Aggregates

d) D423 – Test for Liquid Limit of Soils

e) D4242–Test for Plastic Limit and Plasticity Index of Soils

f) D75 – Sampling Stone, Slag, Gravel, Sand and Stone Block for Use as Highway Materials

2) American Association of State Highway and Transportation Officials (AASHTO)

a) T99–Test for the Moisture Density Relations of Soils Using a 5.5-Pound Rammer and a 12-Inch Drop

b) Samples and Testing

1) Test to determine conformance with all requirements for material quality and properties specified herein will be performed by an independent laboratory approved by PSCB and compensated by the Contractor

2) Obtain representative samples of material in accordance with ASTM D75 for testing. Furnish PSCB designee sufficient materials for testing from each sample at the time obtained

3) Furnish specific schedule for sampling to provide PSCB designee the opportunity to observe sampling

4) Quality control testing will be performed during construction by a testing laboratory retained by PSCB

3. Submittals

1. Includes, but not limited to, the following:

a) Test result reports from testing laboratory indicating conformance with the specifications

b) Certification of conformance with the specifications

11.5.2 Equipment

1. General

   a. Crushed rock surface shall consist of ¾" aggregate placed on top of a 6-mil polyvinyl

2. Aggregate

   a. Crushed limestone or crushed natural gravel, free from lumps or balls of clay or other objectionable matter, and reasonably free from thin and elongated pieces of dirt. Aggregates shall consist of angular fragments, durable and sound, and shall be reasonably uniform in density and quality

11.5.3 Performance

1. General Requirements

   a. Stockpiles

      1) Only with approval of PSCB designee in specified locations

      2) Clear and level storage sites prior to stockpiling

      3) Place in a manner and at locations designated by PSCB, providing separate stockpiles for materials from separate sources

b. Preparation of sub-grade

1) Clean off all foreign substances

2) Correct any ruts, depressions, or soft yielding spots and areas with inadequate compaction

3) Treat all sub-grade areas with soil sterilant

4) PSCB's Project Representative will inspect, prior to placing crushed rock surface, for adequate compaction and surface tolerances

c. Grade control

1) Establish and maintain by means of grade stakes, properly spaced so string lines may be stretched between stakes

2. Placing, Shaping and Compaction of Materials

a. Placing

1) Deposit and spread material in a uniform lift/ layer and compact to the thickness indicated and as specified. Spread material uniformly on the prepared sub-grade from moving vehicles or spreader boxes

2) Level material to the required contour and grades

3) Remove those portions of the layer, which became segregated or mixed with sub-grade material in

spreading and replace with new material as required by PSCB designee

4) Hauling which may damage the sub-grade or surfacing will be restricted by PSCB designee

5) Remove and repair sub-grade areas damaged during application of the crushed rock surface

b. Shaping and Compacting Materials

1) Compact layers no less than 3-inches or more than 6-inches thick

2) Roll to specified compaction requirements throughout full depth of layer with power rollers, rubber-tired rollers or combination

3) Shape and smooth by blading and rolling with power roller, rubber-tired roller, or both

4) Hand tamp in places not accessible to rolling equipment

5) Degree of compaction shall be as follows:

a) Base compaction on weight per cubic foot of material passing ¾ inch sieve and compact to at least 100 percent of maximum density at optimum moisture

b) Determine and control compaction in accordance with AASHTO T99

6) Smoothness test shall be as follows:

a) Surface shall show no deviation in excess of 3/8 inch in any 10 feet when tested with a 10 foot straightened applied parallel with and at right angles to the center lines of the paved area

b) Correct any deviation in excess of this amount of loosening, adding or removing material, reshaping, watering, and compacting as requested by PSCB designee

11.6 Herbicide Applications

11.6.1 General

1. Description

a. This Section includes a type of herbicide and method of placing on all areas to receive crushed rock surfacing prior to placing crushed rock

Note: Herbicides may be only applied by an individual/firm certified in the manufacturer's recommended proper and safe application methods.

11.6.2 Equipment and Materials

1. Sprayers and applicators shall be suitable for intended use

2. Mix herbicide per manufacture's recommendations

3. Herbicide shall be Krover (1) as manufactured by Dupont, Inc., or approved equal

4. Do not apply herbicide if it is too windy or where other adverse weather conditions exist

5. Apply at a rate of 10 pounds of product per acre, or in accordance with manufacturer's recommendations.

11.6.3 Performance

1. Apply only after final sub-grade has been established

2. Apply before installation of vegetation barrier cloth and placement of crushed rock

3. Follow manufacturer's recommendations on timing of application with respect to weather and barrier/crushed rock placement

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12.0 INSTALLATION GUIDELINES

12.1 **Engineering Drawings**

12.1.1 Contractor shall furnish detailed engineering drawings prior to installation of each major portion of the system as follows:

A. Transmitter Site(s)

B. Receiver Site(s)

C. Site Antenna System(s)

D. Receiver Voter Equipment

E. System Controller Equipment

F. Dispatcher Console Equipment

G. Microwave Equipment Terminal(s)

12.1.2 Drawings shall, as a minimum, illustrate:

A. Relative cabinet/rack locations

B. Equipment power wiring (primary and emergency)

C. Equipment interconnection wiring (signal and control)

D. RF component interconnection details i.e. transmitter, combiner, antenna, etc.

E. Appropriate signal/voltage levels to facilitate alignment of level-sensitive components.

12.1.3 Civil drawings showing location details of equipment to be placed in existing or new facilities shall be provided by Contractor.

12.1.4 Contractor shall provide a comprehensive test record of alignment levels, settings and software versions installed within both infrastructure and user equipment. The scope and detail of the comprehensive equipment test and acceptance plan shall be completed prior to Contract Execution with the Successful Proposer. Prior to commencement of acceptance testing procedures, the Contractor shall ensure that all installed equipment has been furnished with the latest software releases available for those equipment items/groupings.

12.1.5 Contractor shall supply true copies of Final Project Record Documents which will include the Engineering Drawings, software releases and alignment details listed above, but amended to show system and equipment "as built" at the time of acceptance by PSCB. The total number of document sets to be provided shall include one site-specific set for each infrastructure site and three comprehensive network sets for the Radio Maintenance Department's use. **Final Project Record Documents must be submitted to PSCB's Project Representative within forty-five days after system acceptance testing has been successfully concluded. Final payment for Contracted services shall not be released by PSCB until this documentation submittal has been successfully completed by the Contractor and reviewed and approved by PSCB's Project Representative and Consultant.**

11.1 **Workmanship**

All workmanship shall be of the highest standard, in accordance with Industry-accepted practices and the National Electric Code. Work areas

shall be maintained in a neat, orderly fashion. Work sites shall incorporate Contractor-provided trash containers and residue of the work shall be discarded as the work is underway.

The installation of audio, signal and control cables within equipment cabinets, enclosures, racks and cable trays must be properly routed such that wires/cables do not cross over each within cable bundles. Cables must be properly labeled, routed and secured. To the maximum extent possible, cables carrying AC power, low-level audio, RF and digital signals must be grouped separately.

All DC wiring, particularly those areas where battery terminals and power distribution bus bars are located, must incorporate insulation barriers to prevent the accidental short-circuiting of otherwise exposed conductors.

PSCB's Project Representative and Consultant shall have the ability to temporarily stop work progress by the Contractor if workmanship falls below acceptable levels and shall have the authority to require the Contractor to remove and/or correct all observed instances of poor wiring practice, inappropriate use of installation materials and other obvious installation defects as a result of apparent poor workmanship. Approval to resume installation work activities shall be provided to the Contractor once agreement is reached in resolving observed workmanship defects.

The determination of Contractor workmanship acceptability, as well as the suitability of any proposed rework plans offered by the Contractor, shall remain with PSCB's Project Representative and the Consultant.

13.0 PHASING/ IMPLEMENTATION

13.1 **Phasing of New Network**

13.1.1 Contractor must prepare and submit a comprehensive migration plan that will prevent disruption of communication on the existing analog trunked radio network and provide a smooth transition to the new Project-25 digital voice radio network:

A. Contractor must supply a sequence of events for the installation of the new network showing any effect the different stages of installation may have on existing systems. Any relocation or modification to existing equipment must be stipulated and prior approval obtained from PSCB's Project Representative.

B. Proposers shall provide a completion time period (in days) for the project, based on PSCB's execution of a Notice to Proceed. Proposers shall provide a schematic representation of the implementation process as well as a hypothetical migration plan. These required proposal submittals will be used by PSCB designee and Consultant to evaluate the Proposer's ability and understanding of Specification requirements to perform this work in a manner that offers no disruption to ongoing public safety communications operations.

C. Contractor shall provide a time schedule for the training of system managers, dispatchers, user personnel and RCD staff. Contractor will supply time schedules for the orderly transfer of departments onto the new network and the estimated time period when the transfer could be completed.

13.1.2 Contractor shall coordinate the orderly transfer of services to the new network only after having successfully concluded equipment alignment

and installation procedures, successful completion of the network acceptance test and completion of manager, dispatcher, user and RCD staff training programs.

13.1.3 Contractor must not dismantle or modify the existing analog radio systems without prior approval of PSCB's Project Representative. Some portion of the existing network (i.e., RD-LAP data system) may remain operational after acceptance of the new system. PSCB Project Representative will notify the Contractor when elements of the old analog infrastructure equipment may be reallocated to meet interoperability needs or otherwise can be decommissioned.

13.1.4 Contractor shall assist PSCB designee and all user agencies in preparing user talk groups, initial priority levels and shall complete the necessary user equipment installation, programming and record keeping, as required. This activity must be completed prior to service cutover.

13.1.5 Prior to Contract execution, the Successful Proposer must commence negotiations with PSCB's Project Representative and its Consultant to develop a comprehensive test and acceptance plan that addresses, minimally, the following major functionality and operability issues:

A. Transmitter Equipment

1. Provide RF power stage measurements at different levels of the transmitter system such as transmitter, filters, combiner, cable, antenna, etc.

2. Test R.F. components for specified insertion loss

3. Test for proper frequency, modulation, digital signaling and stability

4. Test and report of delivered audio quality and signal margins throughout proposed service area, in all required configurations (portable in-vehicle, portable on-street, portable in-buildings, etc)

B. Receiver Equipment

1. Test of compliance to specifications of equipment provided

2. Provide log of signal gain or loss to equipment within the receiver system such as antenna, cable, preamp, splitter, or receiver antenna port

3. Test of audio quality and level (reciprocal of that required for the transmit path) of system balance

C. Console Audio/ System Controllers

1. Test of compliance to manufacturer's published specifications of equipment provided

2. Test of audio quality and level

3. Verification of network failure modes in response to forced failures of individual communications/ control lines and complete site failures complete written explanation is required

4. Verification of compliance to TIA/EIA Project-25 ISSI Standards that allow for seamless interoperability with Project-25 radio networks fielded by other manufacturers

D. Dispatch Centers

1. Provide written results of testing of operational features per dispatch position

2. Test system operation during simulated failures of system components i.e. console electronics, power loss, etc.

E. Subscriber Equipment

A random field test of ten (10%) percent of each type or model of portable radio device shall be required. If ten (10%) percent or more of each type or model of equipment tested fails to meet the manufacturer's specifications, then the Contractor shall be required to perform a test of one hundred (100%) percent of that type or model. All replacements for failed units shall be tested. All mobile radio installations shall require 100% operational test verifications:

1. Verify compliance with vendor specifications for transmitter, receiver and control circuitry

2. Check for compliance with RFP requirements and originally proposed functionality

3. Check for proper user profile programming of equipment and operation on the system

4. Testing of supportive equipment, i.e., speaker/microphone, DTMF signaling, chargers, batteries etc.

F. Contractor shall provide all test equipment, diagnostic services, documentation, software, personnel, vehicles and other items as necessary to test the delivered and installed radio network in

accordance with the Contracted Test and Acceptance Plan, inclusive of operational features, to complete a total system functional test.

G. Proposer shall disclose test procedures and equipment that will be used to verify radio system coverage as specified in Section 7.0.

H. Proposers shall submit within their Proposal Submittal a sample test and acceptance plan that is representative of the scope and complexity of the proposed radio system. This plan must address those items described in Section 13.1.5, A – G.

13.2 **Implementation**

13.2.1 Contractor is responsible for the provisions and cost of warehousing, insurance, storage and security of radio network infrastructure and user equipment prior to and during the construction and installation phases of the project.

13.2.2 Contractor will assign a Project Manager as a single point of contact between PSCB's Project Representative and the Consultant. Contractor's Project Manager shall be approved by PSCB or designee prior to assignment. PSCB or designee reserves the right to require replacement of the Contractor's Project Manager at any time during the project. Contractor's Project Manager must be resident in Leon County Monday through Friday, during normal business hours and for the term of the Contract. Project Manager may be required to remain in Leon County during periods of Installation and Implementation failure, ATP and System Cut over, as required by PSCB Project Representative

13.2.3 Prior to installation of any portion of system, PSCB or designee and/ or Consultant must approve Contractor furnished engineering drawings as specified in Section 12.0.

13.2.4 Each portion of the new network must be in compliance with those technical parameters specified in the approved Testing and Acceptance plan.

13.2.5 Contractor must supply comprehensive training on user operation of portable radios, mobile radios, control stations, and other user equipment as required by the Contract Contractor must also supply comprehensive training for system diagnostics, management systems, preventative and routine maintenance and system operation for System Managers and RCD staff.

13.2.6 Contractor is responsible for any site modifications required to accommodate infrastructure equipment proposed for location in PSCB-owned as well as in non PSCB-owned properties.

13.2.7 Contractor shall provide technical support/engineering as required to modify existing FCC licenses or to acquire additional licenses required to facilitate operation of the proposed digital radio network. This activity shall include all FCC licensing application development, frequency coordination and engineering fees.

13.2.8 Any modification or relocation of existing equipment will require prior approval by PSCB's Project Representative. Contractor shall supply "as built" drawings and complete written documentation of modifications or relocations to existing systems to facilitate maintenance of this PSCB-owned equipment in the future.

14.0 WARRANTY AND MAINTENANCE GUIDELINES

14.1 **Warranty**

14.1.1 Equipment Warranty

Proposer shall warrant all provided network equipment furnished as part of the Contract and associated radio infrastructure, subscriber and related user equipment and software for a period of one year, after the date of system acceptance. Warranty will commence at the time of final acceptance and shall provide all labor and parts for maintenance and repair, including preventive maintenance, of the network provided. All cost for the one-year warranty will be borne by the Contractor. PSCB desires Contractor to provide a cost proposal for a long term (minimum 5 years) maintenance agreement through the major communications equipment manufacturer for all system materials and functionality. PSCB may elect to accept or deny this additional cost maintenance agreement

The following conditions shall additionally apply:

A. Replacement parts must be of new or current manufacture and meet or exceed the specifications of the original supplied equipment (OEM).

B. Contractor shall have qualified technicians available on-site, in response to a reported service outage, within one hour during normal working hours (8AM to 5PM Monday through Friday and within one hour between the hours of 5PM and 8AM, weekends and holidays. Major communications equipment manufacturer shall have a fully qualified, staffed and equipped service facility located within Leon County during the contract, warranty and maintenance agreement period.

Response default penalties:

In the event of default on the response time on reported service outages, the Contractor agrees to pay PSCB the following response penalties: Contractor shall pay $500 for each occasion that its fails to meet the response time obligation for a reported infrastructure service outage. Contractor shall pay $1,000 per twenty-four hour period in which defective infrastructure site equipment is not restored to operational status.

Should any specific equipment item (such as a specific portable radio, repeater station, station circuit board, power amplifier, etc.) fail three times during the warranty period, Contractor will replace that equipment item and warranty the replacement for one additional year from the time of replacement.

C. The Contractor must make available replacement parts for all Contractor-manufactured components of the digital radio infrastructure for 10 years following acceptance. Post-warranty replacement parts service for infrastructure equipment shall be available within 24-hours of parts order replacement. Failure to provide parts for contractor-manufactured items shall result in a 5% cost reduction penalty for each day parts are delayed, capped to a maximum 100% cost reduction.

Proposers shall provide, as part of Infrastructure Pricing, a list of quantities and costs for recommended spares and specific diagnostic, test and repair equipment of Infrastructure and major system components, including antennas and cabling. This list should be based on the best knowledge and experience of the Proposer's engineering, manufacturing and service personnel. This price submittal shall be in compliance with the requirements indicated by Section 16, Pricing.

D. The Contractor must guarantee the radio network's operating software, inclusive of user equipment software, for a one-year period following network acceptance. The Contractor shall provide software updates, at no additional cost, for the entire period under which the Owner has committed for Contractor-provided after warranty maintenance services.

The Contractor further guarantees that it has good title to any material and software supplied to PSCB and that it will defend PSCB from any third party claims concerning such material or software

14.2 **Maintenance**

14.2.1 During the initial warranty period, the Contractor shall be responsible for:

A. Preventive maintenance of infrastructure and end-user equipment

B. Repair maintenance of infrastructure equipment, inclusive of antenna systems

C. Repair maintenance of subscriber and related user equipment

D. Installation of mobile-mounted radio equipment

14.2.2 Contractor-provided maintenance during the warranty period will be monitored by the City of Tallahassee's Radio Maintenance Department (RCD)

The Contractor must supply monthly service logs listing the site(s) where service is performed, the equipment involved and service details. Failure of individual units, sub-assemblies and/or components must be reported in writing to RCD. This report must, as a minimum, include unit identification

(description and serial number), explanation and cause of failure and corrective action taken.

The Contractor shall submit a maintenance work plan that identifies the tasks required in accordance with Section 14.2.1, a listing of Contractor supplied personnel and identification of a single 24/7/365 contact point responsible for Contractor maintenance issues.

All required service logs and repair reports must be submitted to the City of Tallahassee's 700/800MHz Radio System Director and RCD

14.2.3 Proposers shall provide a detailed explanation of Disaster Recovery Processes used to assist clients in the immediate aftermath of events such as tornadoes, floods, hurricanes and acts of terrorism. Proposers shall provide information detailing processes for maintaining adequate spare parts stocking levels to support extraordinary needs; their ability to furnish emergency quantities of portable radios, chargers and battery packs; the ability to furnish transportable emergency trunked radio systems; and their ability to provide skilled technical resources to support evolving client needs during a disaster event.

Proposers shall provide summaries, inclusive of client references, of Disaster Recovery Support provided in response to at least three recent disaster events (i.e., events that have occurred within the past four years).

15.0 RADIO PROGRAMMING AND SPARE PARTS REQUIREMENTS

15.1 **Radio Programming**

15.1.1 Contractor shall assist PSCB's designee, RCD staff and various user agencies in determining user identification and talk path assignments.

15.1.2 Contractor shall program all portable, mobile and control station radios, all network or site controllers and all other equipment supplied by the Contractor to operate on the FCC-licensed operating frequencies and the talk paths determined in Section 15.1.1, above.

15.1.3 Contractor shall prepare and furnish to PSCB's Project Representative "as programmed" records for each radio (infrastructure & subscriber) placed on the system.

15.1.4 Contractor shall provide training for System Managers and RCD staff sufficient to permit PSCB designee, System Managers and RCD staff to add users, create new or delete obsolete talk paths and to access all other system software controlled features.

15.1.5 Provisions shall be incorporated into the system to allow the Contractor, from its Home Office to remotely interrogate the operating system and provide software assistance if requested by PSCB designee, System Manager or RCD staff. Access, for this purpose, must be secure and under the control of the 700/800MHz Project Manager.

15.1.6 Contractor must provide four sets of radio and equipment programming software, appropriately equipped laptop computers, and all other support equipment and special cables necessary to program each type of user equipment supplied by the Contractor.

15.2 Spare Parts

15.2.1 Contractor must maintain an initial stock of spare parts, as determined necessary, to maintain all components of the network's infrastructure for a one-year period. These spare parts shall be located either at selected PSCB radio infrastructure sites, RCD or at the Contractor's local-area Maintenance Service Station facility

15.2.2 As spare parts are consumed in the course of routine or repair maintenance, the Contractor shall immediately replenish its stock of locally housed spare parts, where necessary. A report of the utilization frequency and rate of all spare materials shall be made available to RCD staff. If at any time the Contractor is aware of any equipment repair or recall notifications the Contractor shall notify RCD by electronic and routine mail. Trends of unusual system or component failure shall be brought to the attention of the PSCB, their designee and RCD staff by the Contractor.

16.0 PRICING CONSIDERATIONS

16.1 General Pricing Information

This infrastructure and subscriber equipment-pricing portion of this Specification is developed as a guide for Proposers so that the necessary information is provided to PSCB, their designee and Consultant for it to conduct an accurate assessment of proposed cost. This information is illustrative of the detail required for each infrastructure site, inclusive of sites having only dispatch-related equipment. As this is a turnkey system, any pricing omission of a scope that is normally considered part of a simulcast trunked radio system will be provided for by the Contractor at no additional cost to PSCB.

Subscriber equipment (mobiles, portables and accessories) is intended to be purchased as part of this Specification. Some or all user equipment purchases and quantities ordered may be delayed or not ordered depending on City/County financing options and capabilities. The pricing of this equipment for both initial and future purchases will be considered in determining the most advantageous price. PSCB retains the right to perform life-cycle analysis in determining the best price-value.

In the case of manufacturers of low-tier Project-25 compliant subscriber (user) equipment devices desiring to offer such equipment for consideration, the PSCB welcomes such participation. This procurement; however, is structured for the purchase of both infrastructure and user equipment from a turnkey provider. Therefore, manufacturers of Project-25 compliant subscriber equipment shall have entered into formal sales/service agreements with established infrastructure providers (i.e., Motorola; M/A-COM; EF Johnson, etc) for their equipment to be considered for this procurement. Furthermore, such third-party equipment shall be proposed only by those providers offering a responsive infrastructure proposal.

Proposals for subscriber equipment only shall not be accepted.

16.2 Site Modification Costs

16.2.1 PSCB-Owned Sites

For equipment to be installed at PSCB-owned sites which have requirements for site preparatory work involving architectural, mechanical, electrical, civil or structural construction modifications, a description and cost of the modifications required must be provided by the Proposer for each individual named site.

16.2.2 Donated Sites

For equipment installed at donated sites which have requirements for site work involving architectural, mechanical, electrical, civil or structural modifications in order to meet the functional requirements stated herein, the Contractor shall be responsible for all work. It is the Proposer's responsibility to insure that the selected site can be modified for the equipment selected to occupy that site.

16.2.3 Rental Sites

For equipment installed at rental sites which have requirements for site work involving architectural, mechanical, electrical, civil or structural modifications in order to meet the functional requirements stated herein, the Contractor shall be responsible for all work. It is the Proposer's responsibility to insure that the selected site can be modified for the equipment selected to occupy that site.

The Proposer shall also provide the annual operating costs of any proposed rental site, inclusive of space rental, antenna placement rental and utilities. Additionally, the Proposer shall provide a letter for the Rental Site Owner that confirms the availability of the necessary space to accommodate the proposed facilities and that such space has been reserved for the full duration of the Proposal Evaluation and Contract Award Period.

16.3 Maintenance Costs

It is the intention of PSCB to use outside contract labor for maintaining its infrastructure equipment and subscriber equipment.

An annual maintenance cost for each infrastructure-related site, to become effective after expiration of the initial warranty period, must be provided. Total site maintenance costs are to be subdivided by the individual major components groupings that comprise each site. All site (backbone infrastructure) maintenance costs should be totaled. Additionally, Proposers are required to provide the percentage of maintenance cost escalation through the fifteenth year of network ownership and to indicate their methodology for determining the percentage cost escalation.

16.4 Pricing Summaries

Pricing Summaries for Infrastructure and Subscriber equipment shall be provided as part of the Proposal Submittal.

16.5 Future Purchase Considerations

It is the intent of PSCB to operate this new radio communications network for, minimally, the next fifteen years. As some portions of the equipment

purchased may only be available from one vendor, it is important that PSCB receive reasonable safeguards with regard to future pricing

16.5.1 Immediate Future Discounts

PSCB requires within the Proposal a certainty of continued purchase, at the beneficial initial contract costs, of all equipment, components, parts, materials, software and service agreements for a minimum of 5 years.

For all purchases within five (5) years after the network acceptance date, the discount percentage received by PSCB will be identical to the discount percentages derived from list-price unit equipment costs and proposed unit costs. The Proposer shall define the discount structure for radio infrastructure, subscriber equipment, Contractor-furnished technical services as well as markup percentages used for outside subcontractor services. The list unit price for equipment will be determined by the manufacturer's published equipment list price, as delivered to their authorized sales agents, at the time of actual purchase.

16.5.2 Purchase Price Discount Years 6 - 10

For years six (6) through ten (10) after the network acceptance date, PSCB's discount from the manufacturer's published equipment list price, as delivered to their authorized sales agents, shall be as follows:

Fixed Site Equipment _____%

Microwave Related Equipment _____%

Console Equipment _____%

Control Station Equipment _____%

Subscriber Equipment _____%

Accessories _____%

Spare Parts _____%

Maintenance Agreement _____%

16.5.3 Price Discount Years 11 - 15

For years eleven (11) through fifteen (15) after the network's acceptance date, PSCB's discount from the manufacturer's published equipment list price as delivered to their authorized sales agents, shall be as follows:

Fixed Site Equipment _____%

Microwave Related Equipment _____%

Console Equipment _____%

Control Station Equipment _____%

Subscriber Equipment _____%

Accessories _____%

Spare Parts _____%

Maintenance Agreement _____%

16.6 Infrastructure Pricing Analysis Worksheets

The following pricing worksheets are to be used as a guide to developing the Infrastructure Price Submittal. These worksheets are indicative of the detail required and may be amended or expanded as necessary.

Proposers shall develop and submit individual pricing sheets for each infrastructure site, inclusive of dispatch site locations, for their Price Proposal to be considered responsive. Any omission or error in developing the pricing proposal, as per Section 1.16 of this Specification, shall be the sole responsibility of the Proposer (Contractor).

Simulcast System

Control Point #1:

Equipment Description	Number Req'd	List Unit Cost	RFP Unit Cost	Extended Cost	Maintenance Cost
Network Controller	1	$_____	$_____	$_____	$_____
Console/Audio Control	1	$_____	$_____	$_____	$_____
Simulcast Sync. Eq.	Lot	$_____	$_____	$_____	$_____
PCM Mux Equipment	Lot	$_____	$_____	$_____	$_____
Receiver Voter/Selector	Lot	$_____	$_____	$_____	$_____
DVIU Interface Equipment	Lot	$_____	$_____	$_____	$_____
System Manager Terminal	1	$_____	$_____	$_____	$_____
Microwave Link Equipment	1	$_____	$_____	$_____	$_____
Standby Battery Plant System	1	$_____	$_____	$_____	$_____
Emergency Generator System	1	$_____	$_____	$_____	$_____
Site Engineering	1	$_____	$_____	$_____	$_____
Project Management	1	$_____	$_____	$_____	$_____
Equipment Installation	Lot	$_____	$_____	$_____	$_____

Subtotal Equipment	$_____
Subtotal Labor	$_____
Total Equipment/Labor	$_____
Total Annual Maintenance Cost.	$_____

Simulcast System

Optional Control Point #2:

Equipment Description	Number Req'd	List Unit Cost	RFP Unit Cost	Extended Cost	Maintenance Cost
Network Controller	1	$_____	$_____	$_____	$_____
Console/Audio Control	1	$_____	$_____	$_____	$_____
Simulcast Sync. Eq.	Lot	$_____	$_____	$_____	$_____
PCM Mux Equipment	Lot	$_____	$_____	$_____	$_____
Receiver Voter/Selector	Lot	$_____	$_____	$_____	$_____
DVIU Interface Equipment	Lot	$_____	$_____	$_____	$_____
System Manager Terminal	1	$_____	$_____	$_____	$_____
Microwave Link Equipment	1	$_____	$_____	$_____	$_____
Standby Battery Plant System	1	$_____	$_____	$_____	$_____
Emergency Generator System	1	$_____	$_____	$_____	$_____
Site Engineering	1	$_____	$_____	$_____	$_____
Project Management	1	$_____	$_____	$_____	$_____
Equipment Installation	Lot	$_____	$_____	$_____	$_____

Subtotal Equipment	$_____
Subtotal Labor	$_____
Total Equipment/Labor	$_____
Total Annual Maintenance Cost.	$_____

Simulcast System

Transmit/Receiver Site # ____:

Equipment Description	Number Req'd	List Unit Cost	Bid Unit Cost	Extended Cost	Maintenane Cost
Transmitters	22*	$_____	$_____	$_____	$_____
Transmitter Antenna Systems	3	$_____	$_____	$_____	$_____
Combiner Package(s)	3	$_____	$_____	$_____	$_____
Receiver Antenna	1	$_____	$_____	$_____	$_____
Tower-top Preamp	1	$_____	$_____	$_____	$_____
Multicoupler	1	$_____	$_____	$_____	$_____
Receivers	22*	$_____	$_____	$_____	$_____
800 MHz Interop Links	_____	$_____	$_____	$_____	$_____
VHF Interop Links	_____	$_____	$_____	$_____	$_____
Protected Microwave System	Lot	$_____	$_____	$_____	$_____
Microwave Antenna System	Lot	$_____	$_____	$_____	$_____
PCM Mux Equipment	1	$_____	$_____	$_____	$_____
Standby Generator System	1	$_____	$_____	$_____	$_____
Battery/Charger System	1	$_____	$_____	$_____	$_____
M/W Installation	Lot	$_____	$_____	$_____	$_____
Site-Civils Modifications	Lot	$_____	$_____	$_____	$_____
Equipment Shelter	1	$_____	$_____	$_____	$_____
Tower	1	$_____	$_____	$_____	$_____
Infrastructure Installation	1	$_____	$_____	$_____	$_____
Tower Installation	1	$_____	$_____	$_____	$_____
Shelter Installation	1	$_____	$_____	$_____	$_____
Project Management	Lot	$_____	$_____	$_____	$_____
System Engineering	Lot	$_____	$_____	$_____	$_____

Subtotal Equipment	$_____
Subtotal Labor	$_____
Total Equipment/Labor	$_____
Total Annual Maintenance Cost.	$_____

* **To be Determined by Proposer**

16.7 Subscriber Equipment Pricing

PSCB envisions several tiers of portable and mobile radio units for use by the various public safety and non-public safety agencies. Those non-public safety users having minimal interoperability needs, such as Parks and Recreation, may benefit from lower-tiered, less costly radios having smaller talk group capacities and a limited list of feature options. Public Safety agencies, however, may require highest-tier devices capable of voice encryption, telephone interconnect calling, private call, GPS location, status messaging and other specialized features.

Proposers shall develop cost proposals for low, mid and high-tier radio products using the following general format:

High-Tier Portable

1. At least 250 modes/talk groups/channels
2. 700/800MHz operation
3. Multi-line alpha-numeric LCD text display
4. Radio/ Network status icons
5. 9-button keypad
6. Private/Individual Call
7. DES/AES voice encryption
8. IMBE vocoder
9. Emergency Button
10. Programmable option buttons
11. Talk group scan
12. System Scan
13. Intrinsically Safe
14. Integrated voice/data capability
15. Wide range of optional accessories

Mid-Tier Portable

1. At least 120 modes/ talk groups/ channels
2. 700/800MHz operation
3. Multi-line alpha-numeric LCD text display
4. Radio/Network status icons
5. 3-button keypad
6. Private/Individual Call
7. DES/AES voice encryption
8. IMBE vocoder
9. Emergency Button
10. Programmable option buttons
11. Talk group scan
12. System Scan
13. Intrinsically Safe
14. Integrated voice/data capability
15. Wide range of optional accessories

Low-Tier Portable

1. At least 120 modes/talk groups/channels
2. 800MHz operation
3. Single-line alpha-numeric LCD text display
4. Radio/Network status icons
5. No keypad
6. IMBE vocoder
7. Emergency Button
8. Programmable option buttons
9. Intrinsically Safe
10. Limited list of optional accessories

High-Tier Mobile Radio

1. At least 250 modes/talk groups/channels
2. 700/800MHz & VHF (150-170 MHz) operation
3. Remote Control Head/ Rear Mount Configuration
4. Multi-line alpha-numeric LCD text display
5. Radio/Network status icons
6. 9-button keypad
7. Private/Individual Call
8. DES/AES voice encryption
9. IMBE vocoder
10. Emergency Button
11. Programmable option buttons
12. Talk group scan
13. System Scan
14. Integrated voice/data capability
15. Wide range of optional accessories

Mid-Tier Mobile Radio

1. At least 250 modes/talk groups/channels
2. 700/800MHz
3. Remote Control Head/Rear Mount Configuration
4. Multi-line alpha-numeric LCD text display
5. Radio/Network status icons
6. 9-button keypad
7. Private/Individual Call
8. DES/AES voice encryption
9. IMBE vocoder
10. Emergency Button
11. Programmable option buttons
12. Talk group scan

- 108 Mid Tier Portables (submersible)
- 16 Control Stations
- 95 High Tier Mobiles

City Public Works, Utilities and Star Metro

- 24 High Tier Portables
- 89 Mid Tier Portables
- 764 Low Tier Portables
- 27 Control Stations
- 7 Mid Tier Mobiles
- 274 Low Tier Mobiles

Leon County Sheriff's Office

- 225 High Tier Portables
- 285 Mid Tier Portables
- 5 High Tier Mobiles
- 240 Mid Tier Mobiles

Leon County Public Works

- 20 Mid Tier Portables
- 100 Low Tier Portables
- 100 Low Tier Mobiles

County Volunteer Fire Department

- 81 Low Tier Portables

Emergency Medical Services

- 88 High Tier Portables

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13. System Scan
14. Integrated voice/data capability
15. Wide range of optional accessories

Low-Tier Mobile Radio

1. 800MHz Operation
2. Front-Mount Package
3. At least 120 modes/talk groups/channels
4. Two-Line alphanumeric display
5. Network/Radio Icons
6. IMBE vocoder
7. Programmable option buttons
8. Emergency Button
9. Limited range of optional accessories

The following illustrates the approximate quantities, types and tiers of subscriber equipment that could potentially be used on the 800MHz Digital Voice Radio Network:

Tallahassee Police Department

- 91 High Tier Portables
- 410 Mid Tier Portables
- 132 High Tier Mobiles
- 90 Mid Tier Mobiles
- 12 Control Stations

Tallahassee Fire Department

- 29 High Tier Portables (submersible)

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- 16 Mid Tier Portables
- 30 High Tier Mobiles (with dual control heads)

Florida A&M University Police Department

- 50 Mid Tier Portables

Florida State University Police Department

- 14 High Tier Portable Radios
- 50 Mid Tier Portable Radios

Tallahassee Community College

- 14 Low Tier Portables
- 1 Control Station

Additionally, Proposers shall prepare a detailed optional equipment catalog that describes the full range of options available for all Tiers and indicated portable and mobile radio configurations. The submitted catalog shall include list prices and the proposed discount percentage-reduced initial purchase price.

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16.8 Proposal Authorization Form

(To be submitted with each Price Proposal)

I (or we) do hereby declare that I (or we) have carefully examined this RFP Specification and the annexed Addenda numbered _____, and I (or we) have a clear understanding of said Specifications, and shall provide the required communications equipment and the necessary permits and authorizations, tools, machinery, apparatus, and other means of construction, and to furnish all labor, materials, and services specified in the Contract or called for in the said Specifications (including all taxes/fees) necessary for the completion of the work described herein.

Respectfully submitted,

By:

_____	_____
Authorized Signature	Title
_____	_____
Business Name	Business Address
_____	_____
Telephone Number	Date

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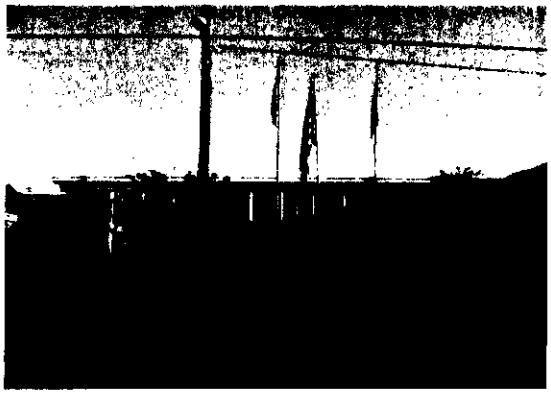
CITY OF TALLAHASSEE

City of Tallahassee
800MHz Radio Network Evaluation
Phase I: User Interviews



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City of Tallahassee
800MHz Radio Network Evaluation
Phase I: User Interviews

1.0 INTRODUCTION

In July 2005, the City of Tallahassee's Office of Information Management released a Request for Qualifications to obtain radio consulting services for the evaluation of its current 800MHz trunked radio communications network. The City's RFQ addressed the following specific needs: evaluation and recommendations of Motorola's unsolicited proposal to expand the current 800MHz analog radio network; identification of existing-network vulnerabilities and investigation of potential and emerging radio communication technologies that could offer beneficial solutions to the City/County's varied communications needs.

A critical aspect of the Consultant's work was to include an independent assessment of Motorola's proposed modernization of the existing 800MHz radio network. Critical to Motorola's proposal was the addition of a new simulcast site (Myers Park) intended to improve known coverage shortfalls and the conversion of some analog trunking channels to Project-25 digital operations.

Motorola's proposed Myers Park site is located approximately 2-miles south of the radio network's prime site on 7th Avenue. This location is owned by the City and is already equipped with both an equipment shelter and a 300ft self-supporting tower. Meyers Park supports the operation of the NOAA Weather Radio transmitter and had been used by the Radio Communications Division in some preliminary 800MHz digital voice performance tests. Motorola's proposed inclusion of the Meyers Park site could potentially improve City building coverage and address many shortfalls now experienced by users of the trunked voice radio network.

The City's RFQ desired a high-level evaluation of the current 800MHz trunked radio network infrastructure sites, to include: cursory site surveys, identification of communications network vulnerabilities, and development of recommendations, if any, to correct observed deficiencies, thereby improving network reliability and survivability.

Finally, the RFQ spoke to emerging technology trends within the field of Public Safety communications, thereby allowing the network's Management Oversight Committee (MOC) the ability to develop long term plans to leverage its considerable investment in Public Safety communications.

Tusa Consulting Services was subsequently selected to perform these various investigative tasks. The first Phase of TCS's contracted services was to conduct interviews

with public safety agencies allied to the current 800MHz radio network. The purpose of those interviews was to gain valuable insight as to what functionality and deficiencies now exist and to gain a high-level view of the current network's ability to meet the basic communication expectations of its various users. Using that information, TCS would be better prepared to evaluate the suitability of Motorola's proposed infrastructure and user equipment modernization approach.

This Report is a summary of public safety agencies interviews conducted by Tusa Consulting Services (TCS). Key representative interviews were completed with the City of Tallahassee's Police Department (TPD); The Leon County Sheriff's Office (LCSO); the Leon County, Department of Emergency Medical Services (LCEMS); the City of Tallahassee Fire Department (TFD); U. S. Marshal's Office; Florida A&M University Police Department (FAMU-PD); and the Florida State University Police Department (FSU-PD).

BACKGROUND

The City of Tallahassee is Florida's Capitol City and is located within Leon County. In 2003, the City's population was estimated at 153,000. The total service area of the Tallahassee Police Department is approximately 100-square miles, i.e. the entire incorporated area of the City. The City is also home to two major universities (FSU and FAMU) as well as the Tallahassee Community College (TCC).

Prior to 1996, the City's public safety agencies operated a legacy UHF conventional radio network. In 1996, Motorola commenced construction of an APCO Project-16 800MHz trunked/simulcast radio network. Construction of the four-site, 22-channel network was completed and formally accepted in April of 1998, providing trunked voice communications for the City's then-1889 users. The network was augmented with the addition of the 8-channel Motorola RD-LAP, 19.2kB mobile data solution in June of 1998.

Today, the voice network currently supports a total of 3,194 users, 1809 are public safety users, with the remainder either supporting public works, or administration operations. A detailed list of users currently supported by the Network can be seen in Table 1. This table was supplied to TCS by the City, a result of a recent audit of the 800MHz radio network as undertaken by the City Auditor's Office.

The combined voice and data network represents a near $20-Million investment, inclusive of infrastructure and subscriber/user equipment. It is the MOC's desire to maximize the utility of its current investment, and reuse as much of this existing infrastructure in any proposed expansion, should such reuse be operationally and economically feasible. The radio network's infrastructure is currently supervised by City personnel, with maintenance services provided by Motorola. The annual cost of this maintenance contract for the radio network, including subscriber/user equipment, is approximately $800,000. This figure, however, does not include the salaries and benefits of the City's internal Radio Communications Division.

The City and County currently share infrastructure maintenance costs. By agreement, the City is responsible for 75% of maintenance costs, with the County responsible for the 25% balance. The County also pays approximately $100,000 annually for user equipment repairs which are not covered under the maintenance contract.

The City's Radio Communication Division is currently conducting an audit of network infrastructure sites to identify potential electrical grounding deficiencies and to identify any areas where sites no longer meet Motorola's most recent version R-56 grounding standards. This audit is being undertaken in advance of anticipated improvements to the radio communications network.

HISTORY

Prior to the selection of Motorola in 1996, the City solicited proposal for its envisioned trunked radio network. The two vendors of 800MHz trunked/simulcast systems presented differing solutions. Motorola structured its proposal using a 4-site configuration while Ericsson (now M/A-COM) proposed a 7-site solution. After much consideration, the City Commission awarded its contract to Motorola.

The initial deployment of the trunked radio network was considered to be inadequate, with coverage shortfalls being the predominant user-agency complaint. Subsequently, the City hired an experienced radio-consulting firm, Trott Communications, to provide an unbiased evaluation of the network. Trott's findings resulted in a report identifying key network deficiencies as well as resolution alternatives. According to Lt. Maureau of the Tallahassee Police Department, findings of that Report concluded that the basic four-tower design could not satisfy the coverage objectives of the City or the Police Department. In short, more tower sites were necessary to provide reliable coverage.

During the project's 1996-1998 implementation period, the Leon County Sheriff's Office (LCSO) declined participation and continued to operate their independent UHF radio system. Interoperability between the Sheriff's Office and TPD was provided by an audio "patch" between the Sheriff's UHF channels and selected TPD 800MHz trunked talk group. Unhappy with this solution, the Sheriff's Office was convinced that migration of the Sheriff's Office communications onto the City's 800MHz Trunked Radio Network was necessary.

In Year 2000, LCSO fully migrated voice communications onto the 800MHz trunked radio network while maintaining a separate LCSO UHF mobile data network. With the envisioned addition of LCSO operations onto the trunked radio network, the MOC desired to improve the network's coverage reliability throughout the entire service area of the Leon County. Additional coverage was facilitated by the Leon County's purchase and installation of the network's "Spray Field" site. Due to the contentious nature of initial-configuration coverage deficiencies, Motorola voluntarily installed a sixth simulcast tower site located at Hopkins Power Generation Facility.

The addition of these two sites greatly improved countywide coverage, but still did not address the most critical coverage deficiencies noted by the Tallahassee Police Department along the City's Orange Avenue corridor. Tallahassee's natural topography is challenging, from the aspect of radio signal propagation, with significant hill crests running east and west along the Orange Avenue corridor, thereby creating a valley, the floor of which is Orange Avenue. It is readily observed that portions of Orange Avenue are electrically "shadowed" from the radio network's prime-site vantage point. Resolution of this topographic limitation would seemingly require installation of, minimally, one additional tower site.

Tallahassee is currently experiencing high population growth and continued suburban housing expansion within the Southwood and Waulanee Plantation areas. There is also development of a key industrial park area, which has seen the proliferation of medium density, two and three-story building structures. The result of this on-going population growth is a heightened awareness for improved radio network performance.

MANAGEMENT

The operation, maintenance and expansion of the City/County 800MHz trunked radio network is overseen by the Management Oversight Committee (MOC). The Committee consists of five member agencies. When the County "bought" into the network, supportive of the Sheriff's Office migration, it contributed approximately $3.5M of the $13M total infrastructure investment, representing about 25% of the Networks cost. The remaining 75% was a shared cost for the City and its various subscriber entities, such as FAMU and FSU.

Regardless of infrastructure-percentage paid, each participant agency has a single MOC vote.

2.0 TALLAHASSEE POLICE DEPARTMENT

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2.1 Description of Department

The City of Tallahassee's Police Department (TPD) is located at 234 East Seventh Avenue and has approximately 365 sworn and 250 civilian positions. The Department has nearly 620 radio IDs operable on the 800MHz radio network. The Department has three patrol divisions or districts, termed: Alpha (A), Bravo (B), and Charlie (C). The combined districts are staffed by 165 mobile vehicle units. Each district has its own set of assigned talk group. Additionally, the Department includes a Criminal Investigation Division (CID), a Homeland Security Division (HSD), a Special Operations Division that is serviced by 25 mobile units, a Technical Services Division, and an Information Management Division. TPD is responsible for the radio dispatch of TPD personnel, as well as radio dispatching for the City/County Fire Departments.

All TPD sworn personnel are assigned vehicles that include installed vehicular radios. These fixed radio units are in addition to portable radios that are likewise unit-issued. Mobile radios are installed in vehicles used by Patrol, Special Operations, Traffic Units, Traffic Homicide Units, Special Events Units, and Motorcycles. All supervisory positions have vehicles with mobile radios assigned to them. There is also a set of mobile radio equipment installed within TPD's Incident Response Vehicle.

The Tallahassee Police Department considers the 800MHz voice radio network as being a Life-Critical System.

2.2 Personnel Interviewed

On March 2, 2006 TCS representatives meet with Lt. Tom Maureau of the Departments Information Technology Division. The following describes, in a general sense, the information gleaned for our discussions.

2.2.1 Coverage

Originally, the radio network was designed (marketed/represented) to provide for portable radio network operation. However, the presence of coverage shortfalls drove the purchase of mobile radios by the Department. The Department has recently purchased 110 Motorola XTS5000 radios, which are capable of both analog and APCO Project-25 digital communications.

The predominant coverage shortfalls reported by Department users are concentrated along the Orange Avenue corridor and are noted to be critical (loss of communications entirely) within many buildings during calls for service. This area is noted to be populated predominantly by lower socioeconomic families, and is considered to be a "high-crime" area having a disproportionate number of calls for service.

Other coverage shortfalls had been noted to occur in buildings located within the Tallahassee Central Business District: the lower levels of the Civic Center and Capitol Building; Tallahassee Memorial Hospital (TMH); and recently within the FSU football stadium. Some shopping malls within the greater-Tallahassee area have noted to have coverage deficiencies as well.

Some of these coverage shortfalls have been resolved through the installation of Bi-directional Amplifier (BDA) systems, specifically to correct those shortfalls noted within TMH and the Capitol Building. Other coverage shortfalls, such as those identified within the FSU football stadium, were addressed by the City's Radio Communication Division, and resolved with the modification of Cellular Carrier's Operations during football games. Other coverage deficiencies remain, and are considered to be critical to life safety. It is the goal of the Department to have resolved most, if not all, coverage deficiencies found within high-crime areas, where calls for services are most frequent. These areas have been identified to be predominantly along the Orange Avenue corridor.

Lt. Maureau verbalized that one goal of the Department is to provide for the field users' realistic expectation of being able to communicate within the identified problem areas, and to provide the Department and the City with the ability to grow its communications network as the City's population expands in the future.

Lt. Maureau expressed the need for TCS to develop or recommend an Acceptance Test Plan (ATP) for the objective evaluation of Motorola's proposed solution, should the City pursue that course to address and rectify currently identified deficiencies in the 800MHz radio network. It is his view that this ATP should include a sample of the recommended procedure, and include as a minimum, the scope of test (Drive and Audio Quality), and recommended test areas throughout the City. Furthermore, Lt. Maureau desires TCS to address the Transition Plan proposed by Motorola, and evaluate the Motorola's proposed implementation schedule.

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2.2.2 Capacity

Of the 3194 total users on the 800MHz radio network, there are currently 1809 public safety users operating on the network, of which the Tallahassee Police Department has 365 personnel with 620 radio IDs. The Department believes call queuing are acceptable, even during periods of peak-load call volume.

2.2.3 Voice Functionality

Currently, the Department does not use voice encryption, as it is too cumbersome and they believe its use impairs communication effectiveness due to the observed delay in voice transmission. The Department is aware of the APCO Project-25 (P-25) digital voice standard, and desires that any future expansion or modernization of the network be P-25 compatible. By so doing, this would allow the Department to consider and potentially purchase subscribe/user radio equipment from multiple vendors. The Department also desires the addition of a portable (mobile) repeater, which can be deployed during "special events".

2.2.4 Mobile Data

Currently the Department operates a 7-channel (13 base stations out of five sites) mobile data system utilizing Motorola's 19.2Kb/s solution: RD-LAP. Tallahassee Fire Department (TFD) also uses this mobile data solution. The Department has a total of 240 mobile data terminals (MDT), consisting of the Panasonic Toughbook models CF28 and CF29. The Department also operates 41 Motorola ML900, and is not entirely satisfied with their operation. The Fire Department operates approximately 80 MDT's, and most recently purchased 80 of the Motorola ML900 devices.

The Department uses its mobile data system to obtain records from the National Crime Information Center (NCIC), Florida Crime and Information Center (FCIC), Vehicle Registration Verification, drivers license checks, local justice inquires, and a modified text dispatch, which currently augments voice dispatch, for non-priority calls for service. The Department currently relies upon Motorola's utilities, Info-trak and Print-trak, to transfer information from a primary master database to mobile units deployed in the field. Officers are currently performing field based reporting on mobile data devices in their vehicular units. These reports are predominantly Traffic Crash and Incident Reports. The software used was originally developed by a company called UCS. They were later bought out by a company called HTE and later became Sungard-HTE.

RadioIP middleware has recently been deployed to provide expanded capabilities for mobile data computing. The Department is currently performing a pilot study (20

units) of a mobile data solution utilizing a commercial cellular carrier for mobile data backhaul. The goals of the pilot study include: (a) Data Compression for increased throughput; (b) Provide for RF-vs.-WLAN arbitration, (c) Provide an interface to wireless LAN, and (d) data reconciliation. Should this pilot study meet or exceed the Department's mobile data needs, TPD will likely proceed with deployment of this solution for its entire fleet of vehicles.

There is currently a Wireless-LAN project underway within the City, which includes approximately twenty sites. Some of the sites include the FSU football stadium and City Utilities. The Wireless-LAN utilizes Air-Fortress for network security.

Lt. Maureau stated that the Department has no interest in pursuing the deployment of Motorola's High Performance Data (HPD) solution, as offered in their proposal. He believes it to be far too expensive for the bandwidth performance provided. Likewise, the Department has no interest in the pilot Mesh Network Solution offered by Motorola.

HTE's Mobile Flash currently has 175 pre-drawn street intersections in MDT-resident database. Updating these "pre-drawn" maps is network-capacity limited. On-air updating consumes a considerable amount of the mobile data network's transmission capacity and is described as "taxing".

The Department has an operational Automatic Vehicle Location (AVL) employing a utility developed by AvelTech. Currently the system provides an interface between the Print-trak Computer-Aided-Dispatch (CAD) and AVL. GPS polling rate for specific unit-location determination is variable and depends proportionally upon the speed of the vehicle, and service call priority.

2.2.5 Interoperability

The Department regularly has the need for interoperable radio communications with other agencies. These agencies include the Leon County Sheriff's Office (LCSO), the Capitol Police, FAMU-Police, FSU-Police, Leon County EMS, City of Tallahassee Utilities and the Metropolitan Bus Service.

2.2.6 Reliability

TPD reports that the trunked radio network's reliability has been exceptional, and few service outages have been experienced.

2.2.7 Maintenance/Service

The City currently has an annual service contract with Motorola, and First Communications of Tallahassee is the local Motorola Service Station (MSS) who the

Department relies upon for repair and maintenance of portable/mobile user equipment. The Department is generally dissatisfied with the service they have received from First Communications and reports this has been a long standing problem. Recently, the Department believes that repair service performance has improved, but is far from meeting the service needs and expectations of the Department.

2.3 TPD Interview Summary

The City of Tallahassee's Police Department is the single-largest, predominant user of the 800MHz trunked radio network. Officers in the field rely upon the voice network to provide critical communication while performing duties critical to law enforcement. The voice network's coverage deficiencies are considered to be life-critical and must be adequately addressed and resolved by any proposed upgrade to the network. Availability of mobile data, while certainly mission-critical, has a significantly lower priority than voice communications and is expected to remain so for the foreseeable future. Future growth of the City's population must be provided for by corresponding growth of the radio network. Any proposed solution must provide the needed expansion capabilities desired by the City and the Police Department.

TPS currently operates a multi-channel 19.2kb/s RD-LAP mobile data network. Increased Departmental demands have spurred TPD to investigate higher-speed commercial alternatives. A recently-approved pilot project, using commercial cellular infrastructures, is no being considered as a near-term replacement for the aged RD-LAP configuration.

3.0 LEON COUNTY SHERIFF'S OFFICE

3.1 Description of Department

Leon County is located within the panhandle of the State of Florida and is bounded by Gadsden County to the West, Wakulla County to the South, Thomas County, GA to the North, and Jefferson County to the East. Leon County has an estimated population of 250,000 residents and has an area of approximately 700 square miles.

The Leon County Sheriff's Office (LCSO), located at 2825 Municipal Way Drive, is responsible for countywide law enforcement. LCSO operates a fleet of 240 mobile units and has approximately 800 total users on the radio network. Each unit includes a mobile radio installed in it, and each Deputy is assigned a portable radio, as well.

Sheriff Larry Campbell is the co-chairman of the Region-1 Domestic Security Task Force, encompassing Leon County and the surrounding twelve Counties. He also holds a voting position on the Management Oversight Committee. The Sheriff's Office is responsible for dispatch of Sheriff's Deputy's and City/County EMS resources. The Florida Department of Law Enforcement (FDLE) is the first-responder agency during a disaster response, with the Sheriff's Office providing the second level of response, followed by TPD as the third level.

3.2 Personnel Interviewed

On March 3, 2006, TCS representatives met with LCSO Sgt. David Frimmel and Lt. Billy Fair who were present during the entire interview. Additionally, a representative from the LCSO Information Technology Department briefly joined the interview to provide specific information regarding the Sheriff's UHF mobile data system.

3.3 Radio Coverage

LCSO currently enjoys reliable countywide 800MHz mobile radio coverage; however, some areas are not as well served for portable radio operations. This portable radio coverage shortfall is not a significant hindrance to field operations as LCSO Deputies predominantly depend upon the mobile radio for communications while patrolling the County.

As noted by TPD, portable radio coverage along the Orange Avenue's corridor, particularly within buildings, is inadequate. But, this is not their predominant area of operation. Two other areas reported to have inadequate LCSO to have inadequate portable unit coverage include the County Courthouse and Jail.

Sgt. Frimmel felt that these reported coverage deficiencies needed to be addressed, as personnel have an almost daily requirement to communicate at these various locations. Also, poor coverage was observed to occur within the newly constructed Chiles School.

3.4 Capacity

LCSO reported no functional or operational issues with either the capacity of the existing radio network or the number of currently assigned talk group.

3.5 Voice Functionality

The primary radio network requirement LCSO has expressed its need for deputies in the field to be able to reliably and clearly communicate with Dispatch. This primary goal is currently being met by the 800MHz trunked radio network, and must be met by any proposed upgrade of the existing radio communications network.

LCSO had purchased equipment capable voice encryption on the 800MHz network, but found it difficult and cumbersome to use. Those interviewed cited improper programming of the equipment as a principal cause for user dissatisfaction. LCSO also found that Motorola's Private-Call feature was too taxing on available network capacity, by occupying a channel for the entire duration of each call. It is a feature that is now rarely used.

LCSO uses shoulder microphones for portable radios as well as hands-free headsets. Air support is provided by two helicopters and LCSO has concern over too many different kinds of radios needing to be incorporated into the cockpits of these helicopters. This equipment adds to the total weight and complexity of helicopter operations. The purchase of any new equipment must take aircraft-configuration needs into consideration.

One complaint voiced by LCSO representatives was that personnel must monitor too many different talk group. Whenever a radio is operable in the scan-mode, pertinent information on another talk group may be missed. This, however, is an inherent trait of trunked radio communication systems and is not unique to the current 800MHz radio network.

Another issue voiced during the interview had to do with functionality in the aftermath of a network failure. Whenever the radio network's primary site fails, upon returning to operation, LCSO user radios reportedly do not return to the latest "home" talk group, but rather revert to an older talk group structure. This has been a three-year problem that requires resolution.

LCSO also expressed a need to control its Unit ID Alias database. Interviewed representatives felt this capability is necessary to better address the Department's operational needs and would provide an effective means to facilitate inventory control and asset management.

3.6 Data Functionality

LCSO currently operates and maintains a private two-channel mobile data system (a third UHF channel is reserved for backup voice operations, if needed). The mobile data system operates on UHF (450-470MHz), supporting approximately 112 mobile data computers. The infrastructure site supporting the UHF network is a 390-foot tower located on Centerville Road, which is believed to be owned and maintained by Williams Communications. There was some discussion as to the location of a UHF repeater at the Capitol Building; however, this location could not be confirmed.

The RF-modem platform supporting the mobile data system is based on 9.6Kb technology manufactured by DataRadio ©. The DataRadio RF-modem is located within the glove box of each cruiser, with access provided by opening the glove box cover. During 800MHz trunked network outages (which have only been brief and limited in number), deputies can attach a microphone to the modem and facilitate backup voice communications.

LCSO uses its mobile data network for NCIC/FCIC inquiries, driver's license checks, registration verification, CAD, secondary dispatch, and AVL as well. The LCSO is not able to interoperate/share data with the TPD mobile data system, nor was a need expressed to have this functionality.

LCSO is looking to augment its UHF data transport with commercial, high-speed services available through Cingular.

3.7 Interoperability

LCSO routinely (estimated at greater than 10%) has a need for interoperable communications with a variety of agencies, both within the State of Florida and Georgia. These interoperable communications often include the Florida Department of Law Enforcement (FDLE) via the Statewide Law Enforcement Radio System (SLERS), adjacent-county Sheriff's Offices in Florida and Georgia, Leon County EMS, and TPD. One example cited as an event requiring multi-agency interoperability, was the annual FAMU Homecoming Luau. Those interviewed felt this was a critical special event that most stressed interoperable radio communication capabilities.

The Sheriff's Office noted that football games, especially when occurring simultaneously at the separate universities, were challenging events having multi-agency interoperable communications occurring on a limited number of special events talk groups.

LCSO has used the State's MotoBridge interoperable communication solution, and has expressed concerns about its voice delay (truncation of the initial 1.5 and 2.0 seconds of voice traffic) and the ability to have a patch terminated by any personnel who have access to the MotoBridge network. Most troubling is that patch termination can occur absent of a logging mechanism or "audit trial". LCSO believes this lack of security is a serious design flaw which makes any interoperable patch vulnerable to malicious or even accidental intrusion.

LCSO sited several examples of accidentally dropping a network patch established between two other agencies when attempting only to terminate the monitoring of the network bridge. LCSO staff also cited incomplete training on MotoBridge as the system had a software "virus" that resulted in early termination of their dispatcher training session.

3.8 Network Reliability

LCSO personnel could recall only two incidents when the trunked radio network was functionally inoperable. One of those incidences occurred recently when LCSO experienced an apparent 2-hour outage. Other than that very recent incident, the network was described as being extremely reliable.

Sgt. Frimmel expressed concern that the current Smartnet trunked radio network's prime site represents a single point of failure. Should that site fail, the remaining simulcast sites become inoperable. TCS explained that this is a characteristic of the Smartnet trunked network configuration. There is no fail-safe workaround for this inherent network vulnerability unless a second (standby) prime site is added and configured to include a redundant network controller.

3.9 Maintenance/Service

Similar to concerns expressed by TPD, LCSO has been very dissatisfied with the quality of service provided by its Motorola service provider, First Communications. They cited example after example of poor service, excessive turnaround times, and an overall lack of responsiveness to LCSO communication needs. An example cited of poor service involved preventative maintenance to be performed on radios brought to the service shop. The turnaround time for portable or mobile unit maintenance has approached three-weeks, which the LCSO believes is excessively prolonged.

Although the Sheriff's Office has ten spare portable radios, the three-week repair cycle leaves them insufficient spares to support mission-critical operations. LCSO expressed a desire to have at least two qualified radio service shops active within Leon County, thereby

establishing competition and an improved service response.

3.10 Summary

The Sheriff's Office is currently the second most populous user of the City/County 800MHz trunked radio network. LCSO provide law enforcement throughout the entirety of Leon County. LCSO is pleased with coverage offered by the current radio network coverage, but notes it should be improved to better-support portable in-building communications. LCSO desires to maintain control and self determination of their data radio network.

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4.0 LEON COUNTY E.M.S.

4.1 Description of Department

The Leon County EMS (LCEMS) provides emergency medical response (ambulance) service throughout the entirety of Leon County. LCEMS migrated onto the 800MHz trunked radio network in 2003 and currently has approximately 115 users.

Prior to migration onto the 800MHz trunked radio network, EMS communications needs were met by a legacy UHF system, originally deployed and maintained by Tallahassee Memorial Hospital. Since the LCEMS Department's migration onto the trunked radio network, the legacy UHF system has continued to be maintained as a "backup".

LCEMS has between seven and thirteen ambulance units (boxes) rolling at any given time throughout Leon County. Each EMS unit is equipped with a mobile radio and portable radios are assigned to all EMS personnel. Units are stationed at various posts throughout the County. Posts are defined as either static (Fire Station 12, 13, or 14) or dynamic, whose placements are chosen based upon historical call data, or operationally around special events such as football games.

LCEMS operates a total fleet of 18 EMS units. The Department plans to purchase two additional units annually, to accommodate growth and attrition of the aging EMS fleet. LCEMS also operates five support units and one special operations unit. These are typically deployed as supportive disaster response equipment to specific disaster scenes. The purchase of one additional support unit is planned annually, again to meet expanded needs within the Department and anticipated growth in County population. EMS calls for service have increased at a 7% growth rate, while calls requiring transport have increased at an annual rate of 17%.

LCEMS is a first responder for Nuclear, Biological, or Chemical (NBC) disasters. High risk areas for chemical spills are noted to exist on the FSU Campus, in their various chemical laboratories. There are no large nuclear facilities, such nuclear power generation plants or any known nuclear material storage facilities, located within Leon County.

Leon County is home to the Tallahassee Regional Airport, and one incident of an airplane crash was mentioned. There is a railway running through the County, and this has been a source of two separate munitions fires.

4.2 Personnel Interviewed

On March 8, 2006, TCS representatives met with Chief Quillin, (formerly the Chief of TFD), Chad Abrams, Deputy Chief of Administration, and Mac Kemp, Deputy Chief of Operations.

4.3 Coverage

LCEMS stated that 800MHz mobile radio coverage supportive of their operation is acceptable throughout the entire service area of Leon County. Countywide portable coverage is noted to be "patchy", with some of the same coverage deficiencies as noted by TPD. Additional areas of poor coverage are reported to exist within the two hospitals serving the area: Tallahassee Memorial Hospital (TMH) which has a BDA installed in the building, and Capitol Regional Medical Center (CRMC). Additionally, poor coverage appears to exist within the Oaks subdivision. Rarely are units involved in providing service outside the County limits unless they are transporting a patient to a distant treatment facility. During these long transports, units are equipped with Cellular telephones for necessary out-of-county communications.

Unacceptable 800MHz portable radio in-building coverage was reported to occur within the basements of State office buildings, the Capitol Building, and the Civic Center. Furthermore, EMS has observed poor radio coverage within the Nuclear Testing Lab located within the FSU Campus.

Countywide MED-8 mobile radio coverage is supported by an outside UHF radio infrastructure and is regularly tested by the State. Mr. Randy Pierce was the designer of the MED UHF network and has since become employed by the State of Florida's, Department of Transportation. Questions regarding its design and functionality should be addressed by Mr. Pierce.

Mr. Chad Abrams noted that the State is currently deploying WiFi hotspots at Florida rest stops along the Interstate highway system.

4.4 Capacity

Operationally, LCEMS has four primary and three secondary talk groups, which serve almost 100% of their communication needs. Talk group (1) System Status Management is monitored by all EMS units currently awaiting calls to be assigned by dispatch. Once assigned, by the controller, units are directed to move to talk group (2) Dispatch. Talk group (3) is a supervisory talk group, which is used for transmitting information such as vital signs, and patient status information exchange. Talk group (4) is monitored by EMS units which are stationed at one of the static posts (Fire Station 12, 13 and 14) or at one of the dynamically assigned posting. Talk group (5) is a TFD/LCEMS Interoperability Channel. Talk groups 7 and 8A are used for medical consultation between EMS units and either the Capitol Region Medical Center or TMC. All talk groups are monitored and recorded.

LCEMS expressed the need for additional talk groups, particularly to support special events and multi-event days (simultaneous play of football games at both FSU and FAMU stadiums).

4.5 Voice Functionality

EMS units are dispatched from dedicated dispatcher positions located at the Leon County Sheriff's Office Dispatch Center. Code-3 calls for service are routed directly to LCEMS and given to Fire Dispatch. 911 calls that are initiated within the incorporated limits of the City of Tallahassee are answered by TPD. If the call is medical, it is then transferred to LCEMS. 911 calls that are initiated outside the incorporated areas of Tallahassee are routed directly to the LCSO. If the call is medically related, it is transferred to the LCEMS Dispatch Center for disposition and assignment of appropriate personnel.

The EMS Department desires greater on-scene interoperability with TFD and TPD. Subsequent conversations with the TFD have indicated that a talk-around talk group is already available for use at incidents which require on-scene interoperability between EMS, TPD, and TFD.

EMS currently uses a Computer-Aided-Dispatch (CAD) system, which is designed specifically for use by emergency medical service agencies. Termed "NOMAD", the system operates completely separate from existing City/County CAD systems.

EMS utilizes alpha-numeric paging provided by Grey Link, a local/regional paging service vendor. LCEMS observed that its alpha-numeric paging system experienced significant outages during Hurricane Katrina. The paging company apparently used leased lines/facilities supplied by Sprint, whose switchgear was located in hurricane-flooded areas of New Orleans.

LCEMS is now adding rear-mount control heads for those 800MHz radios already installed in each unit. The deployment of rear-mount control heads has been delayed due to the

inability of the Department to obtain the correct materials from the First Communications. Parts availability issues have occurred repeatedly over the past year and the Department is very dissatisfied with the level of response provided by First Communications.

Both TMH and CRMC emergency rooms have 800MHz radios installed in radio control consoles. These voice-communication devices are separate from receive station equipment used for EKG data, as this data is transported via cellular telephone.

4.6 Data Functionality

Currently, 12-lead Electrocardiography (EKG) data is transmitted using cellular telephone interconnects to emergency room monitors. LCEMS foresees a future mobile data system application which would allow them to transmit this EKG information independent of cellular telephone carriers. LCEMS is deploying AVL technology, having limited data-messaging capabilities. This system utilizes a broadband cellular carrier (Verizon Wireless) as the backhaul medium for data.

4.7 Interoperability

All of the EMS ambulance units are equipped with UHF radios operable on "MED-8", a licensing requirement of the State of Florida's Department of Health. The MED network consists of five separate tower sites, configured as a receiver-voted repeater network. MED-8 is also monitored by Tallahassee Memorial Hospital. LCEMS also noted that the South Georgia EMS operates on a VHF (HEAR) network. Thomas County's EMS operates on a compatible Motorola 800MHz trunked radio network. Grady County operates on VHF (HEAR) and does not have access to LCEMS's 800MHz network.

LCEMS does not have direct, unit-to-unit interoperability with the SLERS 800MHz EDACS radio network, but can use the State's MotoBridge for linked interoperability with specific SLERS talk groups. Air transport is provided by Life Flight, using a fleet of 5 helicopters. Each helicopter unit is equipped with 800MHz mobile trunked radio.

4.8 Reliability

LCEMS has been very satisfied with the reliability of the current 800MHz trunked radio network, noting that there have only been two incidents of communication outages. Those reported outages were of short duration and had essentially no impact on EMS operations.

4.9 Maintenance/Service

The Department is extremely dissatisfied with First Communication. They feel the response to LCEMS services needs is almost non-existent, and it has been this way for many years. First Communications' support was felt to be inadequate in many areas, including timely installation of new mobile radios, service parts supply, etc.

As stated earlier, the deployment of the rear-mount radio control heads within EMS units has been delayed due to the inability of the Department to obtain the correct materials from First Communications. This issue has been repeatedly raised over the past year, and the Department continues to be very dissatisfied with the lack of response or service provided by First Communications.

Conversely, LCEMS reports it is very satisfied with the attention and response they have received from the City's Radio Communications Division. Those interviewed cited Milton Willis and Leven Magruder as being very supportive of their communications needs and had nothing but glowing praise of their efforts.

4.10 Summary

LCEMS currently utilizes the 800MHz trunked radio network while providing countywide emergency medical response. The Department has been pleased with the communications service provided by the network and expressed minimal concerns over the network's reliability, coverage, and functionality. Coverage shortfalls were noted to occur in the same general areas previously identified by TPD and LCSO.

Greater operational flexibility could be achieved with the addition several new talk groups, particularly in support of local-area special events (of which football season is especially taxing).

5.0 TALLAHASSEE FIRE DEPARTMENT

5.1 Description of Department

The City of Tallahassee's Fire Department (TFD) consists of fifteen fire stations located throughout the City and five County fire stations located throughout the incorporated areas of Leon County. TFD operates a total of 80 pieces of apparatus; all equipped with 800MHz mobile radios. Portable radios are also assigned to each fire apparatus. TFD staff personnel are also individually assigned portable radios.

Most of the mobile units are the ones purchased with the original network implementation in 1998. Some newer mobile radios have been purchased for installation as the Department has acquired new fire fighting apparatus. The Department also operates a Mutual Aid Trailer (MAT) which has UHF (MED-8), VHF (to support interoperability with adjacent counties), and 800MHz radios installed. The MAT is owned by the State, but is maintained by the City.

Calls for service are received by the Public Safety Answering Point (PSAP) located at TPD, and then routed to Fire Dispatch. Fire paging is accomplished by a Zetron paging encoder located at TPD. Should a failure of the Zetron unit occur, fire paging would then be accomplished by telephone "ring down" circuits. A second backup to the Zetron Paging and ring down system is "tear and run", which produces a print out of pertinent information at the fire station utilizing a Network Printer Device. The PMBC is a mobile data application, which can be used as a last resort for fire paging. Volunteer fire fighters are "toned out" along with TFD fire fighting personnel.

A demonstration of the fire unit alerting at Fire Station One provided critical information

about the Knox Box security key system located in selected fire apparatus. Each Knox Box is activated by DTMF (Telephone touch tone) signaling over the normal 800MHz dispatch talk group. This is of importance, as any migration onto a digital solution must address the generally inadequate transmission of DTMF tones by current IMBE vocoder technology.

Should radio dispatch personnel be forced to leave the City's primary dispatch center, a secondary dispatch position, located in the City's Emergency Operations Center above the primary dispatch center, would then become active. Should personnel be forced to evacuate that building, the next dispatch position would be located in Fire Station 3, where which is equipped as a "mini" EOC with 5 workstations and five CAD positions. Should dispatch personnel be forced to evacuate the City, the Special Incident Response Vehicle (SIRV) could be used for dispatch. Having a total of 3 dispatch positions, access to any WiFi/Ethernet connection could then be used to support dispatch functionality. A final fallback dispatch position for the City is located at the LCSO.

5.2 Personnel Interviewed

On March 9, 2006 TCS representatives conducted an interview of TFD personnel at Fire Station Number One. TFD personnel present during the interview included Deputy Chief Steve Anderson, Doug Ferrell from TFD's Information Systems, Lt. Maureau from TPD, and a representative from the City's Auditor's Office.

5.3 Coverage

Overall, the network's radio coverage was described as "pretty good". TFD has reported that 800MHz portable radio in-building coverage shortfalls along the Orange Avenue corridor, similar to the deficiencies already described by TPD.

TFD currently utilizes a VHF simulcast paging network for paging fire personnel and for fire station alerting. TFD believes that this network provides excellent countywide coverage, with no areas of poor coverage noted.

Each fire station has a Wireless-LAN, which is currently connected to the City's Fiber Optic Network. It is used predominantly for updating software in the Department's mobile data terminal fleet, using the Symantec Software Delivery Tool. Updating City/County mapping information is the predominant application requiring significant bandwidth. The five County-located fire stations are connected to the network via a T1 leased circuit.

5.4 Capacity

The Fire Department currently has twenty-six assigned talk groups, which are adequate to meet present/future communication needs. Talk groups include Dispatch; TAC-1 through TAC-4; EMS talk groups; Training; Administration; Emergency Room; and Life Line/Link. Dispatch of calls is monitored by volunteer firemen as 800MHz dispatch talk groups are

patched to the VHF fire-alerting channel.

5.4 Voice Functionality

Deputy Chief Anderson noted that operation of portable radios while wearing artificial breathing devices is almost impossible with the Department's current air-mask equipment. Chief Anderson suggested that portable radio operation could be improved with a hands-free air mask device, if available.

The Department currently does not use Private Call or data encryption. TFD would consider using Private Call in the future, however, its use currently ties up an entire channel and is cumbersome to initiate. TFD currently does not use status messaging for notification of unit availability. Only the emergency call button is utilized

5.5 Data Functionality

TFD utilizes the 800MHz Motorola RD-LAP mobile data solution as previously described for the TPD. Ultimately, TFD will likely migrate to public cellular data networks to support their future need for higher data throughput.

5.6 Interoperability

TFD uses network talk groups 10A, 10B, 10C, 11A, 11B and 11C as interoperable voice channels between various City/County public safety agencies, as these are programmed into all public safety radios operational on the trunked radio network. There also exists a permanent patch between the VHF Paging/Alerting Channel and 800MHz TFD Dispatch talk group. TFD has mutual aid agreements with adjacent Counties, and have VHF radios mounted in all fire fighting apparatus.

5.7 Network Reliability

TDF expressed no concerns over reliability of the current 800MHz trunked radio network. Any new radio network or upgrade of the existing network would have to fix currently-identified coverage shortfalls, provide for hands-free radio operation with portable units, and potentially provide for the purchase of smaller portable radios (which are intrinsically safe and water proof, as well).

5.8 Maintenance/Service

Maintenance of subscriber user equipment is provided for by the City's annual contract with Motorola, and First Communications is the local service provider for the Fire Department. Generally, TFD is dissatisfied with the service and response received from First Communications.

5.9 Summary

The City of Tallahassee's Fire Department (TFD) operates a total of fifteen fire stations, located throughout the City and five fire stations located throughout Leon County. The Fire Department is currently dissatisfied with portable radio in-building coverage along the Orange Avenue corridor and within the basements of most office buildings located throughout the City. TFD currently uses the mobile data system (RD-LAP) maintained by the City, and will most likely migrate onto the mobile data solution chosen by the Police Department, when deployed.

6.0 U. S. MARSHAL'S OFFICE

6.1 Description of Department

The U. S. Marshal's Service is responsible for security provided to the Witness Protection Program, the transportation of fugitives, property seizures, etc. They operate a total of twelve portable units, operable on the City's 800MHz trunked radio network. These units were originally purchased by the Marshal's Office. All new equipment purchases, however, have been placed "on hold" as the Justice Wireless/Treasury Narrowband Wireless Communications System is being built out. The U. S. Departments of Immigration and Naturalization (INS), Department of Justice (DOJ) and others have been mandated to migrate onto VHF Project-25 trunked or conventional radio network topologies. Once this nationwide network is completed, the Marshal's Office will no longer have radios compatible with the City's 800MHz network.

The lack of compatible radios for operations within Leon County is a major cause for concern; however, the Marshal's Office has no budget to purchase new radios compatible with any new 800MHz deployment potentially envisioned by MOC.

6.2 Personnel Interviewed

On March 9th, 2006, TCS representatives interviewed Mr. J. Scott Wilson from the U. S. Marshal's Service, Department of Justice, Violent Fugitive Task Force. Mr. Wilson is in charge of wireless communications for his District, and was the sole source of information from the U.S. Marshal's Office present during the entire interview.

6.3 Coverage

The Marshal's Office is pleased with the current mobile radio coverage provided by the 800MHz radio network and had no complaints concerning its delivered voice audio quality. The only area of inadequate portable radio coverage was reported to be the South Magnolia Housing Project, located at 509 East Magnolia Street.

6.4 Capacity

No issues identified.

6.5 Voice Functionality

The Marshal's Office currently does not use voice encryption due to its poor audio quality and key-loader issues. They would use encryption for all voice communications, if the audio quality was good and the network incorporated over-the-air-rekeying of security keys.

6.6 Data Functionality

The Marshal's Office currently does not utilize any mobile data networks, and does not have mobile data terminal equipment installed in their vehicles. Mr. Wilson feels that the addition of MDT's would boost productivity, but it is too expensive for the Marshal's Office to consider at this time.

6.7 Interoperability

The Marshal's Office has an almost daily need for interoperable communications with various agencies, to include LCSO, FLDE, FSP and TPD. They currently have no direct interoperability onto the State's SLERS network, except with a patch provided by Motobridge. Once the Marshal's Office migrates onto their new VHF network, which is expected in late 2007 or early 2008, any interoperability patch to TPD or the LCSO will have to be made via Motobridge or MOC will need to provide the needed subscriber/user equipment.

6.8 Reliability

Mr. Wilson has been pleased with the reliability of the current 800MHz trunked radio network and cannot recall any incidences when the network was inoperable.

6.9 Maintenance/Service

No Issues identified.

6.10 Summary

The U. S. Marshal's Service currently operates on the City/County 800MHz trunked radio network. The Marshal's Office is a vital part of the law enforcement community contributing to over 800 arrests in the area, last year alone. Forty of those arrested were wanted on Federal charges, with the remainder of those apprehended being wanted for felony charges in the State. The Marshal's Office has no money budgeted for the purchase of any new radio equipment and awaits the deployment of the Justice Wireless/Treasury Wireless VHF P-25 Communications System, which is expected in early 2008. Any migration of the City's public safety users onto Astro-25 or another digital solution, would effectively remove the Marshal's Office ability to communicate with area public safety agencies. It is anticipated that MOC will be responsible for the purchase of the needed subscriber equipment for use by the Marshal's Office, if such continued operability is desired.

7.0 FLORIDA A&M UNIVERSITY POLICE DEPARTMENT

7.1 Description of Department

Florida A&M University is located southwest of Tallahassee's Central Business District and has an enrollment approximating 12,000. The University has significant on-campus student housing as well as many medium-sized buildings for academic and athletic pursuits. The University Police Department is responsible for security and policing of the entire FAMU campus and residence facilities. It has patrol as well as investigative divisions. The University is also responsible for providing resource officers to the local FAMU High School.

7.2 Personnel Interviewed

On March 10th, 2006, TCS representatives interviewed Florida A&M University Police personnel Ms. Sandra Floyd and Sgt. Stevens. They were the sole source of information regarding the FAMU-PD's operation on the City/County 800MHz trunked radio network.

7.3 Coverage

FAMU-PD officers have observed "spotty" portable in-building coverage on the south end of their campus, with "drop outs" and complete loss of service in areas which run along the Orange Avenue corridor. This lack of reliable coverage is of great concern as the University is currently undergoing expansion of its campus near Orange Avenue and Adams. The University also has plans to expand its facilities near Wanish Way and Campbell Streets.

The Department also has a need to communicate in an area referred to as Innovation Park. This area is the location of a joint venture involving the FAMU/FSU Engineering campus, Industrial Park, and Golf Course.

7.4 Capacity

The Department has a primary and secondary channel, which is used for daily operation. If a special event is taking place, the Department has talk groups 10A, 10B, and 10C programmed in all portable radios, which are used for interoperable communications. The current numbers of talk groups are adequate to meet their communication needs.

7.5 Voice Functionality

The FAMU Police Department (FAMU-PD) has a total of twelve patrol officers, with a total of twenty user radios operable on the City/County 800MHz radio network. FAMU-PD uses portable radios exclusively for radio communications as these are assigned to individual officers. Officers typically use shoulder mounted speaker microphones. The Department

also has a Command Bus, which was donated to the University by the Florida Highway Patrol (FHP), but is in need of some mechanical repair. 911 telephone calls for service are received by TPD, and then routed to FAMU Police Department dispatch. Officers are dispatched directly by FAMU-PD Dispatch. There are "blue boxes" located throughout the Campus, which has wire-line connected emergency call boxes that are routed directly to FAMU-PD dispatch center.

7.6 Data Functionality

The Department does not operate a mobile data system.

7.7 Interoperability

The Department has a daily need to communicate with the University's Parking Unit and Physical Plant, which operate on a separate UHF radio system. There have been two separate campus bombing incidents, which required the Department to be able to intercommunicate with FBI, ATF, and U.S. Marshal's Office. Fortunately, all had access to the 800MHz radio network. In the future, as these federal agencies migrate to new VHF technologies, such interoperability would require the use of Motobridge to patch the disparate radio systems together.

The Universities throughout the State of Florida have been directed by the Governor's Office to migrate onto the State's SLERS communication network. Thus far, this potential migration has been postponed, but the FAMU-PD is concerned that any newly-purchased radio equipment for their agency must be operable on SLERS.

The football season is a challenging time for FAMU-PD communications. Radio traffic then is very busy, with many agencies migrating onto the common TAC talk groups (10A, 10B, and 10C) for operation.

7.8 Reliability

The Police Department is disappointed with the reliability of the existing 800MHz radio network, citing many examples of poor coverage, equipment malfunctions with the Radio Dispatch Console and generally poor service life from subscriber/user equipment. The dispatch console will often give an audible beep, indicating it is detached from the Prime Site, and such "down times" can last from seconds to hours. Motorola's earlier investigations suggested that the leased T-1 interconnectivity between Center and Prime Site is the source of the malfunctions. Further investigation into the phone service problem has not rectified the situation. Mr. Levin Magruder stated he would investigate this from the City's side.

Low battery service life from portable units (as little as two hour of operation on a single charge) has been experienced by officers as well as dispatch alike. TCS has suggested that the bank charger may be malfunctioning, and should be tested.

7.9 Maintenance/Service

The Department currently has a service contract directly with First Communications, which is separate from the service agreement that the City/County has with Motorola. Service is reported to be adequate and voiced no service-related complaints concerning Motorola/First Communications.

7.10 Summary

FAMU-PD is responsible for policing on the Florida A&M University campus. The campus is undergoing expansion and officers have expressed concerns of poor in-building portable radio coverage throughout the campus as well as along the Orange Avenue corridor. The Department is not sure what direction they will pursue if the City/County's public safety trunked network evolves toward a digital communications platform. This uncertainty is partially due to the Governor's Office plan for state universities to migrate onto SLERS. The Department is currently investigating options available for a mobile data system; however, those investigations are preliminary, at best.

8.0 FLORIDA STATE UNIVERSITY POLICE DEPARTMENT

8.1 Description of Department

The Florida State University (FSU) is located in the west part of Tallahassee and just north of FAMU. FSU boasts a total enrollment of about 40,000 students, an enrollment factor that has almost doubled in the past twenty years. Governance of the University has undergone transition to an independent FSU Board. Thus, decisions concerning University's plans for expansion are now made at the University level.

The campus currently occupies approximately five hundred acres. Plans are underway to continue campus expansion with the acquisition of properties between Jefferson Street to Gaines over the next ten to fifteen years.

The FSU Police Department (FSU-PD) is responsible for policing the entire FSU campus, and provides support to the Innovation Park complex as well as resource officers for Florida High School (located near the Spray Field tower site). Officers are also responsible for policing at the Marine Lab in Franklin County. Furthermore, FMU-PD has policing responsibilities in the 105-acre Intramural Facility.

The Department has 61 sworn officers, and utilizes portable radio exclusively. In 2005, the Department logged over 20,000 cases. The Department utilizes portable radios exclusively and officers are dispatched by FSU-PD. FSU-PD has a two complete CentraCom Gold Elite radio dispatch console positions and one backup call-taking position that can also be used for dispatch in an emergency. Radio consoles are interconnected to the Prime Site using a leased T-1 circuit. Fallback control stations for console backup are not provided, however, portable radios as backup, when necessary.

911 telephone calls are received by the PSAP at TPD and transferred to the FSU-PD Dispatch Center. Calls which originate from one of the 300 "Blue Boxes" on Campus go

directly into FSU-PD Dispatch Center.

All 911 calls for service are recorded by a Dictaphone Recording system owned by LCSO. TPD records all radio talk group traffic for the entire network

8.2 Personnel Interviewed

On March 10th 2006, TCS representatives met with Lt. Randy Chandler of the Florida State University Police Department (FSU-PD). He was the sole representative from the Department present during the entire interview.

8.3 Coverage

FSU-PD officers have complained about coverage deficiencies, but it seems to be better than in the past. Still, officers regularly note that basements of most buildings experience inadequate portable radio coverage. Specific buildings mentioned include the Civic Center, Basketball Arena and Conference Center.

8.4 Capacity

Lt. Chandler feels that the current number of talk groups is meeting the Departments communication needs. During football games, the Department will also operate on TAC3.

8.5 Voice Functionality

Officers from FSU-PD predominantly use shoulder-mounted speaker-microphones with Antennas (SMA) and motorcycle officers use a "Set-Comm" for hands free operation. FSU-PD has its own CAD system which they are grossly dissatisfied with, as well as a records management system, which is poorly supported by the vendor, End-to-End or "E-to-E". FSU-PD is currently investigating a potential shared computer-aided dispatch solution with TPD.

8.6 Data Functionality

The Department currently does not have mobile data computing deployed in the field. FSU-PD is awaiting the City's decision (TPD) to migrate onto its new mobile data architecture. Once that migration occurs, FSU-PD will likely migrate onto what ever architecture is ultimately chosen by TPD.

8.7 Interoperability

Officers from FSU-PD routinely use the City/County 800MHz radio network for day-to-day operations. They interoperate with the TPD on a daily basis, who provides backup policing for the FSU-PD. Department users also are in communication with TFD and LCEMS on a

routine basis. Lt. Chandler stated that it was vital for FSU-PD officers to be able to communicate and interact with TPD on a daily basis. Furthermore, he was also aware of the Governor's Office plan for mandating university migration onto the SLERS.

Occasionally, officers travel to Bay County (Panama City Campus) and utilize the Panama City Police Department's 800MHz trunked radio network, of which they have a mutual aid agreement.

Lt. Chandler noted that the University has a conventional UHF radio network still in operation. It is used primarily for "safe escort" and can be used as a backup, should the primary 800MHz radio network sustain a major equipment/functionality failure.

8.8 Reliability

Lt. Chandler stated that FSU-PD was pleased with the service provided by the existing 800MHz trunked/simulcast radio network. He offered no further recommendations as to improvements.

8.9 Maintenance/Service

Like FAMU-PD, the FSU-PD currently has a user equipment service contract directly with First Communications that is separate from the City/County service agreement with Motorola. They believe the repair services have been adequate and report no complaints concerning First Communications response times or demonstrated ability to correct equipment problems.

8.10 Summary

The FSU campus has grown considerably over the past twenty years, with plans for expansion to continue over the next ten to fifteen years. The University is constantly acquiring adjacent properties and building new facilities onto its existing campus. The FSU-PD is responsible for policing on the entire campus and provides support to the FAMU/FSU joint Engineering School.

The Department has expressed the need to interoperate with TPD on a daily basis, as well as having an occasional need to interoperate with other outside agencies such as LCSO and LCEMS.

The Department is investigating new mobile data solutions, but will likely migrate onto whatever data solution is chosen by TPD.

9.0 SUMMARY

In early March, 2006 representatives for Tusa Consulting Services completed a survey of those public safety agencies operable on the City of Tallahassee/Leon County 800MHz shared radio network. The purpose of those interviews was two-fold. First, it was necessary to focus awareness of those key attributes and aspects of the existing radio network considered mission-critical, as well as life-critical, by its user community. Next, it was necessary to gain a clear, documented understanding of *user expectations* for whatever future enhancements should be considered as part of a next-generation public safety radio network.

Several themes were consistently voiced by those interviewed. We learned it is essential that any new network configuration resolve coverage deficiencies within the Orange Avenue corridor (these are fully described by Table 1). Next, strong consideration must be given to improving portable radio operability within building structures, particularly those within the City of Tallahassee's business district. Finally, it was important that any new network configuration include an enhanced level of redundancy such as the loss of a critical site, such as the current-network's prime site, will not disrupt trunked radio functionality.

There can be no single point that exposes the network to catastrophic failure within any new design approach.

Interoperability is a concern, particularly as this relates to adjacent counties and neighboring states (these are fully described by Table 2). It is important for some user agencies, such as the Leon County Sheriff's Office, EMS and the two local universities to establish seamless interoperability with SLERS. For one agency, US Marshal's Office, any transition to new technology will likely require user equipment assistance from the MOC as their budget is no longer structured to allow purchases of radio equipment except for that operable on VHF... an entirely separate and incompatible frequency band.

This Phase I Survey is not intended to provide firm answers to these varied needs and concerns. Rather, this information will be used, next, as a benchmark in our evaluation of Motorola's proposed 800MHz Digital network migration plan toward Project-25 technology. Later, it will help us to assess potential emerging technologies that could be considered for enhanced public safety communication solutions.

	Tallahassee Police Department (TPD)	Tallahassee Fire Department (TFD)	Leon County Sheriff's Office (LCSO)	Leon County EMS (LCEMS)	U. S. Marshal's Office	Florida A&M University Police (FAMU-PD)	Florida State University Police (FSU-PD)	Tallahassee Utility	Tallahassee Bus Service	MED-8	Adjacent County Public Safety	SLERS Network
Tallahassee Police Department (TPD)		X	X	X	X	X	X	X	X			
Tallahassee Fire Department (TFD)	X		X	X		X	X	X			X	
Leon County Sheriff's Office (LCSO)	X			X	X						X	X
Leon County EMS (LCEMS)	X	X	X			X	X			X	X	X
U. S. Marshal's Office	X		X									X
Florida A&M University Police (FAMU-PD)	X		X	X			X					X
Florida State University Police (FSU-PD)	X		X	X		X						X

Table 1. Voice Radio Interoperability Matrix

	Orange Avenue Corridor	Westminister Oaks Subdivision	Civic Center	Tallahassee Central Business District	State Capitol Building	Tallahassee Memorial Hospital	Capitol Regional Medical Center	FSU Nuclear Laboratory	Magnolia Housing Project	FAMU Campus	FSU Conference Center	FSU Basketball Arena	FSU Football Stadium	Leon County Jail	Leon County Court House	Childs School
Tallahassee Police Department (TPD)	X		X	X	X	X	X		X	X		X	X			
Tallahassee Fire Department (TFD)	X															
Leon County Sheriffs Office (LCSO)	X		X	X	X									X	X	X
Leon County EMS (LCEMS)	X	X	X	X	X	X	X	X	X	X		X	X			
U. S. Marshal's Office									X							
Florida A&M University Police (FAMU-PD)	X									X						
Florida State University Police (FSU-PD)											X	X	X			

Table 2. Existing Voice Network Coverage Deficiencies

DRAFT

HAYES

City of Tallahassee/Leon County
Public Safety Communications Board
800 MHz Radio Communications System
Non-Public Safety End-User Interviews

October 17, 2006 - October 20, 2006

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1.0 INTRODUCTION

In July 2005, the City of Tallahassee's Office of Information Management released a Request for Qualifications (RFQ) to obtain radio consulting services for the evaluation of its current 800MHz trunked radio communications network. The City's RFQ addressed the following specific needs: 1) evaluation and recommendations of Motorola's unsolicited proposal to expand the current 800MHz analog radio network; 2) identification of existing-network vulnerabilities and 3) investigation of potential and emerging radio communication technologies that could offer beneficial solutions to the City/County's varied communications needs.

A critical aspect of the Consultant's work was to include an independent assessment of Motorola's proposed modernization of the existing 800MHz radio network. Critical to Motorola's proposal was the addition of a new simulcast site (Myers Park) intended to improve known coverage shortfalls and the conversion of some analog trunking channels to Project-25 digital operations.

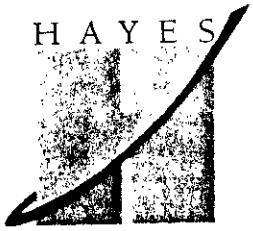
Motorola's proposed Myers Park site is located approximately 2-miles south of the radio network's prime site on 7th Avenue. This location is owned by the City and is already equipped with both an equipment shelter and a 300ft self-supporting tower. Meyers Park supports the operation of the NOAA Weather Radio transmitter and had been used by the Radio Communications Division in some preliminary 800MHz digital voice performance tests. Motorola's proposed inclusion of the Meyers Park site could potentially improve City building coverage and address many shortfalls now experienced by users of the trunked voice radio network.

The City's RFQ desired a high-level evaluation of the current 800MHz trunked radio network infrastructure sites, to include: cursory site surveys, identification of communications network vulnerabilities, and development of recommendations, if any, to correct observed deficiencies, thereby improving network reliability and survivability.

Finally, the RFQ spoke to emerging technology trends within the field of Public Safety communications, thereby allowing the Public Safety Communications Board (PSCB) the ability to develop long term plans to leverage its considerable investment in Public Safety communications.

Tusa Consulting Services (TCS) was subsequently selected to perform these various investigative tasks.

Tusa Consulting Services, in partnership with Hayes, conducted interviews related to the use and needs of Non-Public Safety End-User Agencies allied to the current 800MHz radio network.



The purpose of those interviews was to gain valuable insight as to what functionality and deficiencies now exist and to gain a high-level view of the current network's ability to meet the basic communication expectations of its various users. Using that information, TCS would be better prepared to evaluate the suitability of Motorola's proposed infrastructure and user equipment modernization approach.

These interviews were conducted between October 17, 2006 and October 20, 2006. Conducting the interviews were representatives from TCS/Hayes. Representatives from the City of Tallahassee Radio Communications Division (RCD) were present throughout the interview process.

Key representative interviews were completed with City of Tallahassee (COT) and Leon County (LC) non-public safety agencies including: COT Animal Services, COT Code, COT Parks, COT Athletics, COT Special Events, COT Airport Operations, COT Airport Facilities Maintenance, COT Engineering, COT Traffic Engineering, COT StarMetro, COT Electric, COT Gas, COT Solid Waste, COT Utility Business/Customer Service, COT Streets and Drainage, COT Storm Water, LC Volunteer Fire (Chaires), LC Engineering, LC Fleet Management, LC Mosquito Control/Stormwater, LC Operations, LC Solid Waste, LC Parks and Recreation, LC MIS and GIS, LC Health Department Administration, LC Facilities and LC Public Works.

This report is a summary of the Non-Public Safety End-User Agency interviews.

2.0 BACKGROUND

Tallahassee is Florida's Capitol City and is located within Leon County. In 2003, the City's population was estimated at 153,000. The City is also home to two major universities (FSU and FAMU) as well as the Tallahassee Community College (TCC).

Prior to 1996, the City's public safety agencies operated a legacy UHF conventional radio network. In 1996, Motorola commenced construction of an APCO Project-16 800MHz trunked/simulcast radio network. Construction of the four-site, 22-channel network was completed and formally accepted in April of 1998, providing trunked voice communications for the City's then-1889 users. The network was augmented with the addition of the 8-channel Motorola RD-LAP, 19.2kB mobile data solution in June of 1998.

Today, the voice network currently supports a total of 3194 users, 1809 are public safety users, with the remainder either supporting public works or administration operations.

The combined voice and data network represents a near $20-Million investment, inclusive of infrastructure and subscriber/user equipment. It is the PSCB's desire to maximize the utility of its current investment, and reuse as much of this existing infrastructure in any proposed expansion, should such reuse be operationally and economically feasible. The radio network's infrastructure is currently supervised by City personnel, with maintenance services provided by Motorola. The annual cost of this maintenance contract for the radio network, including subscriber/user equipment, is approximately $800,000. This figure, however, does not include the salaries and benefits of the City's internal RCD.

The City and County currently share infrastructure maintenance costs. By agreement, the City is responsible for 75% of maintenance costs, with the County responsible for the 25% balance. The County also pays approximately $100,000 annually for user equipment repairs which are not covered under the maintenance contract.

The City's RCD is conducting an audit of network infrastructure sites to identify potential electrical grounding deficiencies and to identify any areas where sites no longer meet Motorola's most recent version R-56 grounding standards. This audit is being undertaken in advance of anticipated improvements to the radio communications network.

3.0 HISTORY

Prior to the selection of Motorola in 1996, the City solicited proposals for its envisioned trunked radio network. Two vendors of 800MHz trunked/simulcast systems presented differing solutions. Motorola structured its proposal using a 4-site configuration while Ericsson (now M/A-COM) proposed a 7-site solution. After much consideration, the City Commission awarded its contract to Motorola.

The initial deployment of the trunked radio network was considered to be inadequate, with coverage shortfalls being the predominant user-agency complaint. Subsequently, the City hired an experienced radio-consulting firm, Trott Communications, to provide an unbiased evaluation of the network. Trott's findings resulted in a report identifying key network deficiencies as well as resolution alternatives. According to Lt. Maureau of the Tallahassee Police Department, findings of that Report concluded that the basic four-tower design could not satisfy the coverage objectives of the City or the Police Department. In short, more tower sites were necessary to provide reliable coverage.

During the project's 1996-1998 implementation period, the Leon County Sheriff's Office (LCSO) declined participation and continued to operate their independent UHF radio system. Interoperability between the Sheriff's Office and TPD was provided by an audio "patch" between the Sheriff's UHF channels and selected TPD 800MHz trunked talk group. Unhappy with this solution, the Sheriff's Office was convinced that migration of the Sheriff's Office communications onto the City's 800MHz Trunked Radio Network was necessary.

In Year 2000, LCSO fully migrated voice communications onto the 800MHz trunked radio network while maintaining a separate LCSO UHF mobile data network. With the envisioned addition of LCSO operations onto the trunked radio network, the PSCB desired to improve the network's coverage reliability throughout the entire service area of the Leon County. Additional coverage was facilitated by Leon County's purchase and installation of the network's "Spray Field" site. Due to the contentious nature of initial-configuration coverage deficiencies, Motorola voluntarily installed a sixth simulcast tower site located at the Hopkins Power Generation Facility.

The addition of these two sites greatly improved countywide coverage, but still did not address the most critical coverage deficiencies noted by the Tallahassee Police Department along the City's Orange Avenue corridor. Tallahassee's natural topography is challenging, from the aspect of radio signal propagation, with significant hill crests running east and west along the Orange Avenue corridor, thereby creating a valley, the floor of which is Orange Avenue. It is readily observed that portions of Orange Avenue are electrically "shadowed" from the radio network's

prime-site vantage point. Resolution of this topographic limitation would seemingly require installation of, minimally, one additional tower site.

Tallahassee is currently experiencing high population growth and continued suburban housing expansion within the Southwood and Waulanee Plantation areas. There is also development of a key industrial park area, which has seen the proliferation of medium density, two and three-story building structures. The result of this on-going population growth is a heightened awareness for improved radio network performance.

4.0 MANAGEMENT

The operation, maintenance and expansion of the City/County 800MHz trunked radio network is overseen by the PSCB. The PSCB includes six (6) member agencies. When the County "bought" into the network, supportive of the Sheriff's Office migration, it contributed approximately $3.5M of the $13M total infrastructure investment, representing about 25% of the Networks cost. The remaining 75% was a shared cost for the City and its various subscriber entities, such as FAMU and FSU.

Regardless of infrastructure-percentage paid, each participant agency has a single PSCB vote.

5.0 INTERVIEW FORMAT

The interviews were conducted in an informal question and answer session. Each interview was recorded using a digital audio recorder. Interviews ranged from 45 minutes to 90 minutes. All interviews were held at Hayes, 2473 Care Drive, Suite 201, Tallahassee, Florida 32308.

Information obtained from the interviewees included:

1. Date of Interview
2. Agency
3. Interviewee
4. Address
5. Telephone
6. E-Mail

Questions asked of the interviewees included:

1. Can you provide an overview of your basic operations (e.g. what do you do, how many people, etc.)?
2. What forms of communications do you use (e.g. mobiles, portables, pagers, cell phones, PDA's, laptops, etc.)?
3. Do you regularly use the radio system (i.e. how often, when, etc.)?
4. If you use mobiles/portables, how are they assigned (e.g. individually, group, shift, etc.)?
5. What are the number/names of talk groups that you use?
6. Are there any talk groups that you hardly ever use?
7. Do you have a dispatcher and what is availability?
8. If not, how are field users deployed?
9. Do you use or know of control/base stations?
10. If so, where are they located?
11. Do you experience call waiting?
12. Is the existing radio system adequate for your needs?
13. Are there existing coverage issues?
14. If so, where are they?
15. Do you have a need for encrypted voice communications?
16. Do you need to interoperate with other agencies on the trunked radio system?
17. If so, who are they and how frequently?
18. Do you have any mobile data needs?

19. Can you or someone in your agency supply a list of portable and mobile radios, including likely accessories, such as:
    a. Spare batteries
    b. Desk chargers
    c. Rack chargers
    d. Vehicular chargers
    e. Speaker/microphones
    f. Leather carrying cases
    g. Belt clips
    h. Mobile radios (front and/or rear mount)
    i. Private call
    j. Emergency button
    k. Surveillance/hidden microphone kits
    l. Control/base stations
    m. Maintenance/Preventive Maintenance
20. How do you participate in emergency situations (e.g. disasters, etc.)?
21. Is there any thing else you would like to discuss (e.g. likes, dislike, wants, needs, new tools, etc.)?

6.0 CITY OF TALLAHASSEE NON-PUBLIC SAFETY END-USER INTERVIEWS

6.1 Neighborhood and Community Services, Animal Service Center

6.1.1 URL - http://talgov.com/dncs/index.cfm#asc

6.1.2 Description

Neighborhood and Community Services provides affordable housing strategies; housing rehabilitation and relocation activities; code enforcement for housing and property violations; human service, neighborhood service, animal service and senior service programs and assistance. Neighborhood and Community Services also manages the Senior Center, the Lincoln and Smith-Williams service centers, and the Animal Service Center.

6.1.3 Personnel Interviewed

On October 17, 2006, TCS/Hayes representatives met with Jeff Doyle. Additionally, RCD representatives were present for the duration of the interview.

6.1.4 Methods of Communication

The reported methods of communication used by the agency include:

☐ Mobile Radios	☒ Portable Radios	☒ Cellular Telephones
☒ Pagers	☐ PDA's	☐ Laptops
☐ Other	☐ Not applicable	

Portable radios are assigned to personnel. Users include six officers, one supervisor and one dispatcher. The pagers are used by after-hours on-call personnel. Whenever an emergency is reported, TPD or LCSO pages the on-call. Conversely, personnel rely on cellular telephones to contact TPD or LCSO dispatchers in cases of emergency. Likewise, citizens reach out to Animal Control more than Animal Control reaches out to citizens, thus the need and reliance on cellular telephones.

6.1.5 Use/Understanding of Radio System

The reported use of the 800MHz radio system includes:

☒Use regularly ☐Use occasionally ☐Use rarely or not at all
☒Use other form of communication (e.g. cellular phone, portable walkie-talkie, etc.) in addition to the 800 MHz radio system
☐Not applicable

See Section 6.1.4.

The reported understanding of the 800MHz radio system includes:

☒Understand benefits ☐Do not understand benefits
☒Know how to use system ☐Do not know how to use system
☒Know how to communicate with other agencies via the system
☐Do not know how to communicate with other agencies via the system
☐Not applicable

6.1.6 Use of Talk Groups[1]

The reported use of Talk-Groups includes:

☒Understand Talk-Groups ☐Do not understand Talk-Groups
☒Aware of Talk-Group Templates ☐Not Aware of Talk-Group Templates
☐Not applicable

Personnel primarily use four (4) talk-groups. City Animal Control works with County Animal Control. There exist overlap areas between the two departments.

While aware of the many other available talk-groups, they are hardly ever used. This is attributed to a lack of training and an expressed concern about radio etiquette or lack thereof.

[1] See City of Tallahassee, Talk Group Templates

6.1.7 Use of Dispatcher(s) and/or Base/Control Station(s)

The reported use of a Dispatcher(s) and/or Base/Control Station(s) includes:

☐ Use Dedicated Dispatcher
☒ Use Administrative Staff (e.g. Receptionist, Office Staff, etc.) to dispatch
☐ Use Other Agency/Department as dispatch
☐ Use Base/Control Station to dispatch
☒ Use Portable to dispatch
☐ Use other methods (e.g. cellular telephone) to dispatch
☐ Do not use dispatch
☐ Not applicable

Animal Control uses a dispatcher between 9:00 AM and 6:00 PM M-F. This dispatcher uses both a portable radio and a cellular telephone. During weekends, one officer is on duty but is not a dispatcher.

Animal Control expressed some interest in consolidated dispatch but also some concern with the potential loss of information as it relates to cross training.

6.1.8 Coverage/Capacity

The reported coverage of the 800MHz radio system includes:

☒ No coverage issues ☐ Known coverage issues ☐ Not applicable

The reported capacity of the 800MHz radio system includes:

☒ No call waiting ☐ Some call waiting ☐ Not applicable

6.1.9 Voice Functionality (Encryption)

The reported voice functionality (encryption) needs include:

☒ Understand encryption
☐ Need encryption
☐ Not applicable
☐ Do not understand encryption
☐ Do not need encryption

Animal Control does not have an expressed need for encryption. However, Animal Control does recognize the potential for encryption particularly during criminal investigations.

Animal Control does respond on-scene with TPD or LCSO and therefore does interact with local law enforcement.

6.1.10 Interoperability/Emergency Response

The reported interoperability requirements include:

☒ Need to interoperate ☐ Do not need to interoperate
☐ Not applicable

Animal Control has a need to interoperate with law enforcement and non-law enforcement agencies. This interoperability includes TPD, LCSO and EMS as well as County Animal Control, Streets and Drainage and Culverts and Sewers. This would occur under circumstances such as: incidents requiring law enforcement intervention (e.g. animal cruelty, animal abuse/neglect, animal/human endangerment, etc.) and disaster response as it relates to widespread animal concerns, etc.

6.1.11 Mobile Data

The reported mobile data requirements include:

☐ Have mobile data ☒ Need mobile data
☐ Do not need mobile data ☐ Not applicable

Animal Control expresses a desire to have mobile data including laptops. Application of mobile data includes report writing and retrieval of historic data. Currently, code interpretation is not always done locally on-scene which at times results in loss of revenue.

6.1.12 Accessories/Inventory

The reported agency accessory/inventory includes:

☒ Spare batteries	☒ Desk Chargers
☐ Rack Chargers	☐ Vehicular Chargers (for portables)
☒ Speaker/microphones	☒ Leather Carry Cases
☒ Belt Clips	☐ Mobile Radios
☐ Private Call	☐ Emergency Button
☐ Surveillance/Hidden Mics	☐ Control/Base Stations
☐ Other	☐ Not applicable

Animal Control desires additional spare batteries and speaker/microphones. Animal Control may not be aware of the Private Call feature due to lack of training.

6.1.13 Maintenance/Service

The reported maintenance/service use and awareness includes:

☒ Aware of and uses First Communications[2] maintenance service
☐ Not aware of First Communications maintenance service
☐ Do not use First Communications maintenance service
☒ Aware of and uses COT/RCD maintenance service
☐ Not aware of COT/RCD maintenance service
☐ Do not use COT/RCD maintenance service
☐ Not applicable

Animal Control recognizes the need to perform Preventative Maintenance at least once per year but does not do so.

6.1.14 Other Discussion Items

There were no other discussion items.

[2] First Communications is the only Tallahassee based Motorola Authorized Service Center.

6.2 Neighborhood and Community Services, Code Enforcement

6.2.1 URL - http://talgov.com/dncs/index.cfm#code

6.2.2 Description

Neighborhood and Community Services provides affordable housing strategies; housing rehabilitation and relocation activities; code enforcement for housing and property violations; human service, neighborhood service, animal service and senior service programs and assistance. Neighborhood and Community Services also manages the Senior Center, the Lincoln and Smith-Williams service centers, and the Animal Service Center.

6.2.3 Personnel Interviewed

On October 17, 2006, TCS/Hayes representatives met with Jim Longhurst. Additionally, RCD representatives were present for the duration of the interview.

6.2.4 Methods of Communication

The reported methods of communication used by the agency include:

☐ Mobile Radios	☒ Portable Radios	☒ Cellular Telephones
☐ Pagers	☐ PDA's	☒ Laptops
☐ Other	☐ Not applicable	

6.2.5 Use/Understanding of Radio System

The reported use of the 800MHz radio system includes:

☐ Use regularly ☐ Use occasionally ☒ Use rarely or not at all
☒ Use other form of communication (e.g. cellular phone, portable walkie-talkie, etc.) in addition to the 800 MHz radio system
☐ Not applicable

Code Enforcement rarely uses the 800MHz radio system due to bulkiness of the radios and no privacy. Cellular telephones are primarily used because of the need to talk to citizens.

The reported understanding of the 800MHz radio system includes:

☒ Understand benefits ☐ Do not understand benefits
☒ Know how to use system ☐ Do not know how to use system
☐ Know how to communicate with other agencies via the system
☐ Do not know how to communicate with other agencies via the system
☐ Not applicable

See Section 6.2.5.

6.2.6 Use of Talk Groups[3]

The reported use of Talk-Groups includes:

☒ Understand Talk-Groups ☐ Do not understand Talk-Groups
☒ Aware of Talk-Group Templates ☐ Not Aware of Talk-Group Templates
☐ Not applicable

Code Enforcement primarily uses two talk groups.

6.2.7 Use of Dispatcher(s) and/or Base/Control Station(s)

The reported use of a Dispatcher(s) and/or Base/Control Station(s) includes:

☐ Use Dedicated Dispatcher
☒ Use Administrative Staff (e.g. Receptionist, Office Staff, etc.) to dispatch
☐ Use Other Agency/Department as dispatch
☐ Use Base/Control Station to dispatch
☐ Use Portable to dispatch
☐ Use other methods (e.g. cellular telephone) to dispatch
☐ Do not use dispatch
☐ Not applicable

Code Enforcement uses an administrative staff person to dispatch. Currently, intake calls are manually placed into the work flow system.

[3] See City of Tallahassee, Talk Group Templates

6.2.8 Coverage/Capacity

The reported coverage of the 800MHz radio system includes:

☒No coverage issues ☐Known coverage issues ☐Not applicable

Code Enforcement rarely uses the 800MHz radio system.

The reported capacity of the 800MHz radio system includes:

☒No call waiting ☐Some call waiting ☐Not applicable

Code Enforcement rarely uses the 800MHz radio system.

6.2.9 Voice Functionality (Encryption)

The reported voice functionality (encryption) needs include:

☐Understand encryption
☐Need encryption
☐Not applicable
☐Do not understand encryption
☒Do not need encryption

Code Enforcement rarely uses the 800MHz radio system.

6.2.10 Interoperability/Emergency Response

The reported interoperability requirements include:

☒Need to interoperate
☐Not applicable
☐Do not need to interoperate

Code Enforcement needs to interoperate with TPD for towing incidents. Likewise, Code Enforcement assists with Building Services during windshield damage assessments (i.e. geographic surveys). These instances are coordinated primarily via cellular/landline telephone.

6.2.11 Mobile Data

The reported mobile data requirements include:

☒ Have mobile data	☐ Need mobile data
☐ Do not need mobile data	☐ Not applicable

Code Enforcement currently uses laptops equipped with commercial air cards. These air cards are sufficient. Code Enforcement is implementing tie in to its enterprise databases. This tie in is expected to be complete 1st quarter 2007.

6.2.12 Accessories/Inventory

The reported agency accessory/inventory includes:

☒ Spare batteries	☒ Desk Chargers
☐ Rack Chargers	☐ Vehicular Chargers (for portables)
☐ Speaker/microphones	☐ Leather Carry Cases
☒ Belt Clips	☐ Mobile Radios
☐ Private Call	☐ Emergency Button
☐ Surveillance/Hidden Mics	☐ Control/Base Stations
☐ Other	☐ Not applicable

Code Enforcement rarely uses the 800MHz radio system.

6.2.13 Maintenance/Service

The reported maintenance/service use and awareness includes:

☐ Aware of and uses First Communications[4] maintenance service
☐ Not aware of First Communications maintenance service
☒ Do not use First Communications maintenance service
☐ Aware of and uses COT/RCD maintenance service
☐ Not aware of COT/RCD maintenance service
☒ Do not use COT/RCD maintenance service
☐ Not applicable

Code Enforcement rarely uses the 800MHz radio system.

[4] First Communications is the only Tallahassee based Motorola Authorized Service Center.

6.2.14 Other Discussion Items

There were no other discussion items.

6.3 Parks and Recreation, Parks

6.3.1 URL - http://talgov.com/parks/index.cfm

6.3.2 Description

Tallahassee Parks and Recreation provides worthwhile leisure programs for citizens of all ages and a well maintained parks system. Staff is dedicated to providing diverse, quality recreational opportunities including special events, classes, and athletic leagues.

6.3.3 Personnel Interviewed

On October 17, 2006, TCS/Hayes representatives met with Dan Farrar. Additionally, RCD representatives were present for the duration of the interview.

6.3.4 Methods of Communication

The reported methods of communication used by the agency include:

☐ Mobile Radios	☒ Portable Radios	☒ Cellular Telephones
☐ Pagers	☐ PDA's	☐ Laptops
☐ Other	☐ Not applicable	

Approximately 1/3 of Parks and Recreation uses portable radios. The radios are used to talk to and between crews. Cellular telephones are used also. Cellular telephones afford a level of privacy the portable radios do not. Parks and Recreation understands there is a telephone interconnect available via the portable radio but is not trained on its use.

6.3.5 Use/Understanding of Radio System

The reported use of the 800MHz radio system includes:

☒Use regularly ☐Use occasionally ☐Use rarely or not at all
☒Use other form of communication (e.g. cellular phone, portable walkie-talkie, etc.) in addition to the 800 MHz radio system
☐Not applicable

See Section 6.3.4.

The reported understanding of the 800MHz radio system includes:

☒Understand benefits ☐Do not understand benefits
☒Know how to use system ☐Do not know how to use system
☒Know how to communicate with other agencies via the system
☐Do not know how to communicate with other agencies via the system
☐Not applicable

The 800MHz radio system is used primarily to coordinate field crews. Each crew foreman is assigned a portable radio and a cellular telephone.

6.3.6 Use of Talk Groups[5]

The reported use of Talk-Groups includes:

☒Understand Talk-Groups ☐Do not understand Talk-Groups
☒Aware of Talk-Group Templates ☐Not Aware of Talk-Group Templates
☐Not applicable

Parks and Recreation primarily uses two (2) talk-groups.

[5] See City of Tallahassee, Talk Group Templates

6.3.7 Use of Dispatcher(s) and/or Base/Control Station(s)

The reported use of a Dispatcher(s) and/or Base/Control Station(s) includes:

☐ Use Dedicated Dispatcher
☒ Use Administrative Staff (e.g. Receptionist, Office Staff, etc.) to dispatch
☐ Use Other Agency/Department as dispatch
☒ Use Base/Control Station to dispatch
☐ Use Portable to dispatch
☐ Use other methods (e.g. cellular telephone) to dispatch
☐ Do not use dispatch
☐ Not applicable

Parks and Recreation does not have a dispatcher. Administrative staff monitors a control station.

6.3.8 Coverage/Capacity

The reported coverage of the 800MHz radio system includes:

☐ No coverage issues ☒ Known coverage issues ☐ Not applicable

Parks and Recreation reports a potential coverage issue north of Tallahassee. No other specifics were provided. This may also be a cellular telephone issue rather than a radio system issue.

The reported capacity of the 800MHz radio system includes:

☒ No call waiting ☐ Some call waiting ☐ Not applicable

6.3.9 Voice Functionality (Encryption)

The reported voice functionality (encryption) needs include:

☒ Understand encryption
☐ Need encryption
☐ Not applicable
☐ Do not understand encryption
☒ Do not need encryption

6.3.10 Interoperability/Emergency Response

The reported interoperability requirements include:

☒ Need to interoperate ☐ Do not need to interoperate
☐ Not applicable

The need to interoperate with other agencies via the 800MHz radio system is not urgent. Usually, agencies such as TPD are contacted via cellular telephone. There is also an occasional need to talk to Animal Control. Special events (e.g. Kleman Plaza, Spring Time Tallahassee, Downtown Getdown, etc.) is also a time when Parks and Recreation uses the radio system more often. There may be instances during these events to communicate with law enforcement or other first responders. Another instance of working with law enforcement and/or Public Safety would be to clean roads or erect barricades in the case of a hurricane (i.e. working through Public Works).

6.3.11 Mobile Data

The reported mobile data requirements include:

☐ Have mobile data ☐ Need mobile data
☒ Do not need mobile data ☐ Not applicable

Parks and Recreation does not have a pressing need for mobile data. One useful application would be the monitoring or sites (personnel coming and going) and transmitting digital photographs.

6.3.12 Accessories/Inventory

The reported agency accessory/inventory includes:

☐ Spare batteries
☐ Rack Chargers
☐ Speaker/microphones
☒ Belt Clips
☐ Private Call
☐ Surveillance/Hidden Mics
☐ Other
☒ Desk Chargers
☒ Vehicular Chargers (for portables)
☐ Leather Carry Cases
☐ Mobile Radios
☐ Emergency Button
☒ Control/Base Stations
☐ Not applicable

Parks and Recreation does not maintain a pool of spare portable radio batteries. Parks and Recreation reports memory issues with their previous pool. This could potentially be a training issue regarding the care and maintenance of portable radio batteries.

6.3.13 Maintenance/Service

The reported maintenance/service use and awareness includes:

☒ Aware of and uses First Communications[6] maintenance service
☐ Not aware of First Communications maintenance service
☐ Do not use First Communications maintenance service
☐ Aware of and uses COT/RCD maintenance service
☐ Not aware of COT/RCD maintenance service
☐ Do not use COT/RCD maintenance service
☐ Not applicable

6.3.14 Other Discussion Items

Parks and Recreation expressed an appreciation for this meeting. They discussed the importance of understanding and implementing new technologies as appropriate.

6.4 Parks and Recreation, Athletics

6.4.1 URL - http://talgov.com/parks/index.cfm

6.4.2 Description

Tallahassee Parks and Recreation provides worthwhile leisure programs for citizens of all ages and a well maintained parks system. Staff is dedicated to providing diverse, quality recreational opportunities including special events, classes, and athletic leagues.

6.4.3 Personnel Interviewed

On October 17, 2006, TCS/Hayes representatives met with Tim Leiwig. Additionally, RCD representatives were present for the duration of the interview.

[6] First Communications is the only Tallahassee based Motorola Authorized Service Center.

6.4.4 Methods of Communication

The reported methods of communication used by the agency include:

☐ Mobile Radios	☒ Portable Radios	☒ Cellular Telephones
☐ Pagers	☒ PDA's	☐ Laptops
☐ Other	☐ Not applicable	

Athletics reports the use of portable radios, cellular telephone and PDA's (i.e. Blackberry's). Portable radios are used particularly in Maintenance and during Special Events. During normal course of business, portable radios are not used.

6.4.5 Use/Understanding of Radio System

The reported use of the 800MHz radio system includes:

☐ Use regularly ☒ Use occasionally ☐ Use rarely or not at all
☐ Use other form of communication (e.g. cellular phone, portable walkie-talkie, etc.) in addition to the 800 MHz radio system
☐ Not applicable

See Section 6.4.4.

The reported understanding of the 800MHz radio system includes:

☒ Understand benefits	☐ Do not understand benefits
☐ Know how to use system	☐ Do not know how to use system

☐ Know how to communicate with other agencies via the system
☐ Do not know how to communicate with other agencies via the system
☐ Not applicable

Athletics does not normally use the 800 MHz radio system as a means of communication.

6.4.6 Use of Talk Groups[7]

The reported use of Talk-Groups includes:

☒Understand Talk-Groups ☐Do not understand Talk-Groups
☐Aware of Talk-Group Templates ☐Not Aware of Talk-Group Templates
☐Not applicable

Athletics does not normally use the 800 MHz radio system as a means of communication.

6.4.7 Use of Dispatcher(s) and/or Base/Control Station(s)

The reported use of a Dispatcher(s) and/or Base/Control Station(s) includes:

☐Use Dedicated Dispatcher
☐Use Administrative Staff (e.g. Receptionist, Office Staff, etc.) to dispatch
☐Use Other Agency/Department as dispatch
☐Use Base/Control Station to dispatch
☐Use Portable to dispatch
☒Use other methods (e.g. cellular telephone) to dispatch
☐Do not use dispatch
☐Not applicable

Athletics does not normally use the 800 MHz radio system as a means of communication.

6.4.8 Coverage/Capacity

The reported coverage of the 800MHz radio system includes:

☒No coverage issues ☐Known coverage issues ☐Not applicable

Athletics does not normally use the 800 MHz radio system as a means of communication.

[7] See City of Tallahassee, Talk Group Templates

The reported capacity of the 800MHz radio system includes:

☒No call waiting ☐Some call waiting ☐Not applicable

Athletics does not normally use the 800 MHz radio system as a means of communication.

6.4.9 Voice Functionality (Encryption)

The reported voice functionality (encryption) needs include:

☐Understand encryption ☐Do not understand encryption
☐Need encryption ☒Do not need encryption
☐Not applicable

Athletics does not normally use the 800 MHz radio system as a means of communication.

6.4.10 Interoperability/Emergency Response

The reported interoperability requirements include:

☒Need to interoperate ☐Do not need to interoperate
☐Not applicable

Athletics does not normally use the 800 MHz radio system as a means of communication. Interoperability is usually accomplished via cellular telephone with agencies such as TPD, EMS, Utilities and Maintenance.

6.4.11 Mobile Data

The reported mobile data requirements include:

☐Have mobile data ☐Need mobile data
☒Do not need mobile data ☐Not applicable

6.4.12 Accessories/Inventory

The reported agency accessory/inventory includes:

- ☐ Spare batteries
- ☐ Rack Chargers
- ☐ Speaker/microphones
- ☐ Belt Clips
- ☐ Private Call
- ☐ Surveillance/Hidden Mics
- ☐ Other
- ☒ Desk Chargers
- ☐ Vehicular Chargers (for portables)
- ☐ Leather Carry Cases
- ☐ Mobile Radios
- ☐ Emergency Button
- ☐ Control/Base Stations
- ☐ Not applicable

Athletics discussed the desire to have speaker/microphones for personnel.

6.4.13 Maintenance/Service

The reported maintenance/service use and awareness includes:

- ☐ Aware of and uses First Communications[8] maintenance service
- ☐ Not aware of First Communications maintenance service
- ☒ Do not use First Communications maintenance service
- ☐ Aware of and uses COT/RCD maintenance service
- ☐ Not aware of COT/RCD maintenance service
- ☒ Do not use COT/RCD maintenance service
- ☐ Not applicable

Athletics does not normally use the 800 MHz radio system as a means of communication.

6.4.14 Other Discussion Items

There were no other discussion items.

6.5 Parks and Recreation, Special Events

6.5.1 URL - http://talgov.com/parks/specialevents.cfm

[8] First Communications is the only Tallahassee based Motorola Authorized Service Center.

6.5.2 Description

The Special Events unit sponsors numerous events throughout the year including an Easter Egg Hunt, 4th of July-Celebrate America and the Winter Festival, and facilitates the use of city facilities and services for events put on by community groups.

6.5.3 Personnel Interviewed

On October 17, 2006, TCS/Hayes representatives met with Kristy Carter. Additionally, RCD representatives were present for the duration of the interview.

6.5.4 Methods of Communication

The reported methods of communication used by the agency include:

☐ Mobile Radios	☒ Portable Radios	☒ Cellular Telephones
☐ Pagers	☐ PDA's	☐ Laptops
☐ Other	☐ Not applicable	

Special Events utilizes portable radios during community/special events. These are used to communicate primarily with Parks and Recreation. Special Events also utilizes UHF radios.

6.5.5 Use/Understanding of Radio System

The reported use of the 800MHz radio system includes:

☐ Use regularly ☒ Use occasionally ☐ Use rarely or not at all
☒ Use other form of communication (e.g. cellular phone, portable walkie-talkie, etc.) in addition to the 800 MHz radio system
☐ Not applicable

The 800MHz radio system is used primarily during special events (10 per year). Other than that, cellular telephones are the primary means of communication. Special Events reports that portables are heavy and cumbersome, especially for college students who make up part of its volunteer staff.

Special Events coordinates/requests additional radios from Motorola during community/special events.

The reported understanding of the 800MHz radio system includes:

☒Understand benefits ☐Do not understand benefits
☒Know how to use system ☐Do not know how to use system
☒Know how to communicate with other agencies via the system
☐Do not know how to communicate with other agencies via the system
☐Not applicable

See Section 6.5.5.

6.5.6 Use of Talk Groups[9]

The reported use of Talk-Groups includes:

☒Understand Talk-Groups ☐Do not understand Talk-Groups
☒Aware of Talk-Group Templates ☐Not Aware of Talk-Group Templates
☐Not applicable

Special Events uses no more than two talk-groups.

6.5.7 Use of Dispatcher(s) and/or Base/Control Station(s)

The reported use of a Dispatcher(s) and/or Base/Control Station(s) includes:

☐Use Dedicated Dispatcher
☐Use Administrative Staff (e.g. Receptionist, Office Staff, etc.) to dispatch
☐Use Other Agency/Department as dispatch
☐Use Base/Control Station to dispatch
☐Use Portable to dispatch
☐Use other methods (e.g. cellular telephone) to dispatch
☒Do not use dispatch
☐Not applicable

6.5.8 Coverage/Capacity

The reported coverage of the 800MHz radio system includes:

☒No coverage issues ☐Known coverage issues ☐Not applicable

[9] See City of Tallahassee, Talk Group Templates

The reported capacity of the 800MHz radio system includes:

☒No call waiting ☐Some call waiting ☐Not applicable

6.5.9 Voice Functionality (Encryption)

The reported voice functionality (encryption) needs include:

☐Understand encryption
☐Need encryption
☐Not applicable
☐Do not understand encryption
☒Do not need encryption

6.5.10 Interoperability/Emergency Response

The reported interoperability requirements include:

☒Need to interoperate
☐Not applicable
☐Do not need to interoperate

Special Events interoperates with Police/Fire/EMS in emergency situations. However, the normal means of communication is via cellular telephone. Preference would be the use of the 800MHz radio system during these instances.

6.5.11 Mobile Data

The reported mobile data requirements include:

☐Have mobile data
☒Do not need mobile data
☐Need mobile data
☐Not applicable

6.5.12 Accessories/Inventory

The reported agency accessory/inventory includes:

☐Spare batteries
☐Rack Chargers
☐Speaker/microphones
☒Belt Clips
☐Private Call
☐Surveillance/Hidden Mics
☒Desk Chargers
☐Vehicular Chargers (for portables)
☐Leather Carry Cases
☐Mobile Radios
☐Emergency Button
☐Control/Base Stations

☐Other ☐Not applicable

Special Events would like to have a pool of spare radio batteries. This would be helpful during longer lasting community/special events (before, during and after). Special Events also expressed a desire to have vehicular charges and speaker/microphones. Private Call is another desired feature.

6.5.13 Maintenance/Service

The reported maintenance/service use and awareness includes:

☐Aware of and uses First Communications[10] maintenance service
☐Not aware of First Communications maintenance service
☒Do not use First Communications maintenance service
☐Aware of and uses COT/RCD maintenance service
☐Not aware of COT/RCD maintenance service
☒Do not use COT/RCD maintenance service
☐Not applicable

6.5.14 Other Discussion Items

There were no other discussion items.

6.6 Aviation, Operations

6.6.1 URL - http://talgov.com/airport/about.cfm

6.6.2 Description

The Tallahassee Regional Airport serves a diverse group of users, including airlines, commuter and charter services, scheduled air cargo operations, corporate aviation, light aircraft training, and a wide variety of other business-oriented and private general aviation activities.

[10] First Communications is the only Tallahassee based Motorola Authorized Service Center.

The City of Tallahassee owns and operates the Tallahassee Regional Airport. The Airport facility is located on a 2,743 acre site, seven miles southwest of the city's central business district and within the corporate city limits. The Airport's market service area includes a 100 mile radius, Tallahassee and 32 counties in Florida, Georgia and Alabama.

Operations is responsible for the communication center, police and fire rescue services, safety, security, training, general aviation, ground transportation, and FAA compliance.

6.6.3 Personnel Interviewed

On October 17, 2006, TCS/Hayes representatives met with Jim Durwin. Additionally, RCD representatives were present for the duration of the interview.

6.6.4 Methods of Communication

The reported methods of communication used by the agency include:

☒ Mobile Radios	☒ Portable Radios	☐ Cellular Telephones
☐ Pagers	☐ PDA's	☐ Laptops
☐ Other	☐ Not applicable	

Additionally, Operations maintains a repeater located at the airport. This repeater provides the capability to talk stand-alone and is 807 conventional. There are also access control systems (i.e. security systems) and camera systems used to monitor activities in and around the airport.

6.6.5 Use/Understanding of Radio System

The reported use of the 800MHz radio system includes:

☒ Use regularly ☐ Use occasionally ☐ Use rarely or not at all
☐ Use other form of communication (e.g. cellular phone, portable walkie-talkie, etc.) in addition to the 800 MHz radio system
☐ Not applicable

Operations conducts its business utilizing the 800MHz radio system as its primary means of communications. In fact, TPD has an officer stationed at the airport to support Operations. Direct and immediate access to the Tallahassee Fire Department is also needed.

Radios are assigned across the spectrum of Operations employees, including Janitors to Police Officers. There are between 40 and 50 radios in use.

The reported understanding of the 800MHz radio system includes:

☒ Understand benefits ☐ Do not understand benefits
☒ Know how to use system ☐ Do not know how to use system
☒ Know how to communicate with other agencies via the system
☐ Do not know how to communicate with other agencies via the system
☐ Not applicable

See Section 6.6.5.

6.6.6 Use of Talk Groups[11]

The reported use of Talk-Groups includes:

☒ Understand Talk-Groups ☐ Do not understand Talk-Groups
☒ Aware of Talk-Group Templates ☐ Not Aware of Talk-Group Templates
☐ Not applicable

Operations uses at least seven (7) talk-groups. This includes law enforcement and Public Safety agencies. Operations reports this number is adequate.

6.6.7 Use of Dispatcher(s) and/or Base/Control Station(s)

The reported use of a Dispatcher(s) and/or Base/Control Station(s) includes:

☒ Use Dedicated Dispatcher
☐ Use Administrative Staff (e.g. Receptionist, Office Staff, etc.) to dispatch
☐ Use Other Agency/Department as dispatch
☐ Use Base/Control Station to dispatch
☐ Use Portable to dispatch

[11] See City of Tallahassee, Talk Group Templates

☐ Use other methods (e.g. cellular telephone) to dispatch
☐ Do not use dispatch
☐ Not applicable

Operations maintains primary and secondary dispatch. Primary is located at the Airport Communication Center (2nd floor) while the secondary is located at the Bunker Area (1st floor). Operations expressed a strong desire to locate on-site. A portable radio is on-hand as a back-up to the consoles. Operations also monitors a crash phone. There is a remote console in the Airport Operations office.

6.6.8 Coverage/Capacity

The reported coverage of the 800MHz radio system includes:

☒ No coverage issues ☐ Known coverage issues ☐ Not applicable

Operations is very satisfied with coverage. This includes its regulatory responsibility 5 miles outside Airport grounds. There may be some spotty coverage areas near the runways including near and underneath maintenance sheds approximately 1 mile west of Capital Circle.

The reported capacity of the 800MHz radio system includes:

☒ No call waiting ☐ Some call waiting ☐ Not applicable

Operations conducts live mock exercises and finds that traffic actually decreases during emergencies.

6.6.9 Voice Functionality (Encryption)

The reported voice functionality (encryption) needs include:

☒ Understand encryption ☐ Do not understand encryption
☒ Need encryption ☐ Do not need encryption
☐ Not applicable

Operations has a need for encrypted communications to TPD and amongst supervisory personnel within Operations.

6.6.10 Interoperability/Emergency Response

The reported interoperability requirements include:

☒Need to interoperate ☐Do not need to interoperate
☐Not applicable

Operations needs to interoperate with local law enforcement. In addition, Operations needs to interoperate with Federal agencies during disasters, incidents, dignitary visitations, etc. This applies even when an incident occurs outside of Tallahassee. Air traffic in Tallahassee can be affected, including local, state and Federal response initiatives.

There is a need to interoperate with EMS and Public Works.

The Tallahassee Airport also served as a logistical staging area in the aftermath of Hurricane Ivan.

6.6.11 Mobile Data

The reported mobile data requirements include:

☐Have mobile data ☒Need mobile data
☐Do not need mobile data ☐Not applicable

Operations is very interested in acquiring mobile data capabilities. Applications include airport surveillance system, video analytics, access to Internet and City Intranet (e.g. inspections performed 3 times/day). Inspectors can use data system to report light is broken, type, etc. and satisfy regulatory requirements.

Other projected uses for a mobile data system include communicating with fence sensors, fiber optic cable and solar powered wireless cameras.

Operations is in the process of securing grant funding from the Department of Homeland Security to implement mobile data initiatives.

6.6.12 Accessories/Inventory

The reported agency accessory/inventory includes:

- ☒ Spare batteries
- ☒ Rack Chargers
- ☒ Speaker/microphones
- ☒ Belt Clips
- ☐ Private Call
- ☐ Surveillance/Hidden Mics
- ☐ Other
- ☒ Desk Chargers
- ☒ Vehicular Chargers (for portables)
- ☒ Leather Carry Cases
- ☒ Mobile Radios
- ☒ Emergency Button
- ☒ Control/Base Stations
- ☐ Not applicable

Operations desires Private Call and believes adequate training on its use would be of benefit. The Emergency button on the portables is active for Operations. Additional speaker/microphones are also desired.

6.6.13 Maintenance/Service

The reported maintenance/service use and awareness includes:

- ☒ Aware of and uses First Communications[12] maintenance service
- ☐ Not aware of First Communications maintenance service
- ☐ Do not use First Communications maintenance service
- ☒ Aware of and uses COT/RCD maintenance service
- ☐ Not aware of COT/RCD maintenance service
- ☐ Do not use COT/RCD maintenance service
- ☐ Not applicable

6.6.14 Other Discussion Items

Operations expressed a strong desire to have dispatch center on-site at the airport. This is in addition to local logging recorders. Also, current logging recorders are in need of replacement.

Operations also expressed concerns about funding for new radio equipment. Who will provide the equipment, will Operations have to fund new equipment, etc.?

[12] First Communications is the only Tallahassee based Motorola Authorized Service Center.

6.7 Aviation, Facilities Division

6.7.1 URL - http://talgov.com/airport/about.cfm

6.7.2 Description

The Tallahassee Regional Airport serves a diverse group of users, including airlines, commuter and charter services, scheduled air cargo operations, corporate aviation, light aircraft training, and a wide variety of other business-oriented and private general aviation activities.

The City of Tallahassee owns and operates the Tallahassee Regional Airport. The Airport facility is located on a 2,743 acre site, seven miles southwest of the city's central business district and within the corporate city limits. The Airport's market service area includes a 100 mile radius, Tallahassee and 32 counties in Florida, Georgia and Alabama.

Facilities Division is responsible for building services, electrical maintenance and repairs, structural maintenance and repairs, and grounds/landscaping for the terminal facility.

6.7.3 Personnel Interviewed

On October 17, 2006, TCS/Hayes representatives were scheduled to meet with Tony Davis. Mr. Davis did not show up for the interview.

6.7.4 Methods of Communication

The reported methods of communication used by the agency include:

☐ Mobile Radios	☐ Portable Radios	☐ Cellular Telephones
☐ Pagers	☐ PDA's	☐ Laptops
☐ Other	☒ Not applicable	

6.7.5 Use/Understanding of Radio System

The reported use of the 800MHz radio system includes:

☐Use regularly ☐Use occasionally ☐Use rarely or not at all
☐Use other form of communication (e.g. cellular phone, portable walkie-talkie, etc.) in addition to the 800 MHz radio system
☒Not applicable

The reported understanding of the 800MHz radio system includes:

☐Understand benefits ☐Do not understand benefits
☐Know how to use system ☐Do not know how to use system
☐Know how to communicate with other agencies via the system
☐Do not know how to communicate with other agencies via the system
☒Not applicable

6.7.6 Use of Talk Groups[13]

The reported use of Talk-Groups includes:

☐Understand Talk-Groups ☐Do not understand Talk-Groups
☐Aware of Talk-Group Templates ☐Not Aware of Talk-Group Templates
☒Not applicable

6.7.7 Use of Dispatcher(s) and/or Base/Control Station(s)

The reported use of a Dispatcher(s) and/or Base/Control Station(s) includes:

☐Use Dedicated Dispatcher
☐Use Administrative Staff (e.g. Receptionist, Office Staff, etc.) to dispatch
☐Use Other Agency/Department as dispatch
☐Use Base/Control Station to dispatch
☐Use Portable to dispatch
☐Use other methods (e.g. cellular telephone) to dispatch
☐Do not use dispatch
☒Not applicable

[13] See City of Tallahassee, Talk Group Templates

6.7.8 Coverage/Capacity

The reported coverage of the 800MHz radio system includes:

☐No coverage issues ☐Known coverage issues ☒Not applicable

The reported capacity of the 800MHz radio system includes:

☐No call waiting ☐Some call waiting ☒Not applicable

6.7.9 Voice Functionality (Encryption)

The reported voice functionality (encryption) needs include:

☐Understand encryption
☐Need encryption
☒Not applicable
☐Do not understand encryption
☐Do not need encryption

6.7.10 Interoperability/Emergency Response

The reported interoperability requirements include:

☐Need to interoperate
☒Not applicable
☐Do not need to interoperate

6.7.11 Mobile Data

The reported mobile data requirements include:

☐Have mobile data
☐Do not need mobile data
☐Need mobile data
☒Not applicable

6.7.12 Accessories/Inventory

The reported agency accessory/inventory includes:

☐Spare batteries
☐Rack Chargers
☐Speaker/microphones
☐Belt Clips
☐Desk Chargers
☐Vehicular Chargers (for portables)
☐Leather Carry Cases
☐Mobile Radios

☐ Private Call
☐ Surveillance/Hidden Mics
☐ Other
☐ Emergency Button
☐ Control/Base Stations
☒ Not applicable

6.7.13 Maintenance/Service

The reported maintenance/service use and awareness includes:

☐ Aware of and uses First Communications[14] maintenance service
☐ Not aware of First Communications maintenance service
☐ Do not use First Communications maintenance service
☐ Aware of and uses COT/RCD maintenance service
☐ Not aware of COT/RCD maintenance service
☐ Do not use COT/RCD maintenance service
☒ Not applicable

6.7.14 Other Discussion Items

Not applicable.

6.8 Public Works, Engineering

6.8.1 URL - http://talgov.com/pubworks/index.cfm

6.8.2 Description

Public Works provides services to the community which are not directly reflected on citizens' utility bills and are not part of the public safety and transportation network (such as TPD and StarMetro, respectively).

6.8.3 Personnel Interviewed

On October 17, 2006, TCS/Hayes representatives met with Erwin Arnold. Additionally, RCD representatives were present for the duration of the interview.

[14] First Communications is the only Tallahassee based Motorola Authorized Service Center.

6.8.4 Methods of Communication

The reported methods of communication used by the agency include:

☒Mobile Radios	☒Portable Radios	☒Cellular Telephones
☐Pagers	☐PDA's	☐Laptops
☐Other	☐Not applicable	

Cellular telephones are personal and used to supplement 800MHz radio system use.

6.8.5 Use/Understanding of Radio System

The reported use of the 800MHz radio system includes:

☒Use regularly ☐Use occasionally ☐Use rarely or not at all
☒Use other form of communication (e.g. cellular phone, portable walkie-talkie, etc.) in addition to the 800 MHz radio system
☐Not applicable

The 800MHz radio system is used regularly on a daily basis. Cellular telephones are also used to communicate.

Users include Field Inspectors, Survey Crews, Construction Inspectors, Project Engineer, Public Works Engineer and the Director of Public Works.

The reported understanding of the 800MHz radio system includes:

☒Understand benefits ☐Do not understand benefits
☒Know how to use system ☐Do not know how to use system
☒Know how to communicate with other agencies via the system
☐Do not know how to communicate with other agencies via the system
☐Not applicable

6.8.6 Use of Talk Groups[15]

The reported use of Talk-Groups includes:

☒Understand Talk-Groups ☐Do not understand Talk-Groups
☒Aware of Talk-Group Templates ☐Not Aware of Talk-Group Templates
☐Not applicable

Engineering primarily uses three (3) talk-groups. Engineering reports there is not much need to use any others. The exception being call response.

6.8.7 Use of Dispatcher(s) and/or Base/Control Station(s)

The reported use of a Dispatcher(s) and/or Base/Control Station(s) includes:

☐Use Dedicated Dispatcher
☒Use Administrative Staff (e.g. Receptionist, Office Staff, etc.) to dispatch
☐Use Other Agency/Department as dispatch
☒Use Base/Control Station to dispatch
☐Use Portable to dispatch
☐Use other methods (e.g. cellular telephone) to dispatch
☐Do not use dispatch
☐Not applicable

Engineering uses an Administrative Assistant to answer and respond to calls. This assistant answers 30% of calls.

6.8.8 Coverage/Capacity

The reported coverage of the 800MHz radio system includes:

☒No coverage issues ☐Known coverage issues ☐Not applicable

The reported capacity of the 800MHz radio system includes:

☒No call waiting ☐Some call waiting ☐Not applicable

[15] See City of Tallahassee, Talk Group Templates

6.8.9 Voice Functionality (Encryption)

The reported voice functionality (encryption) needs include:

- ☐ Understand encryption
- ☐ Need encryption
- ☐ Not applicable
- ☐ Do not understand encryption
- ☒ Do not need encryption

6.8.10 Interoperability/Emergency Response

The reported interoperability requirements include:

- ☒ Need to interoperate
- ☐ Not applicable
- ☐ Do not need to interoperate

In the event of an accident, Engineering will call dispatch who then calls TPD. In high crime areas, Engineering would like the ability to call TPD and LCSO dispatch. In fact, Engineering discovered a dead body on one occasion.

Normally, during Emergency Response situations, Engineering is not called in. The only instance may be to shoot high water marks.

6.8.11 Mobile Data

The reported mobile data requirements include:

- ☐ Have mobile data
- ☐ Do not need mobile data
- ☒ Need mobile data
- ☐ Not applicable

Engineering expressed a desire to move into mobile data. Engineering would benefit from uploading/downloading field data files to/from office databases.

6.8.12 Accessories/Inventory

The reported agency accessory/inventory includes:

- ☐ Spare batteries
- ☐ Rack Chargers
- ☐ Speaker/microphones
- ☒ Belt Clips
- ☒ Desk Chargers
- ☐ Vehicular Chargers (for portables)
- ☐ Leather Carry Cases
- ☒ Mobile Radios

☐ Private Call
☐ Surveillance/Hidden Mics
☐ Other
☐ Emergency Button
☐ Control/Base Stations
☐ Not applicable

Engineering currently uses batteries from its existing fleet to interchange with operational radios (i.e. 16 radios in inventory, 6 in normal use). Crews use vests with pockets to hold radios.

6.8.13 Maintenance/Service

The reported maintenance/service use and awareness includes:

☒ Aware of and uses First Communications[16] maintenance service
☐ Not aware of First Communications maintenance service
☐ Do not use First Communications maintenance service
☐ Aware of and uses COT/RCD maintenance service
☐ Not aware of COT/RCD maintenance service
☐ Do not use COT/RCD maintenance service
☐ Not applicable

6.8.14 Other Discussion Items

There were no other discussion items.

6.9 Public Works, Traffic Engineering

6.9.1 URL - http://talgov.com/pubworks/index.cfm

6.9.2 Description

Public Works provides services to the community which are not directly reflected on citizens' utility bills and are not part of the public safety and transportation network (such as TPD and StarMetro, respectively).

Traffic Engineering consists of Traffic Signal Construction, Maintenance and Operations, Traffic Planning, Traffic Safety, Traffic Signs and Pavement Markings. 300 signals are monitored, including many County and State signals.

[16] First Communications is the only Tallahassee based Motorola Authorized Service Center.

6.9.3 Personnel Interviewed

On October 18, 2006, TCS/Hayes representatives met with Olu Sawyerr. Additionally, RCD representatives were present for the duration of the interview.

6.9.4 Methods of Communication

The reported methods of communication used by the agency include:

☒Mobile Radios	☒Portable Radios	☒Cellular Telephones
☐Pagers	☐PDA's	☐Laptops
☐Other	☐Not applicable	

In addition, Fire trucks have in-vehicle pre-emptive devices to favorably change traffic lights as trucks approach.

6.9.5 Use/Understanding of Radio System

The reported use of the 800MHz radio system includes:

☒Use regularly ☐Use occasionally ☐Use rarely or not at all
☒Use other form of communication (e.g. cellular phone, portable walkie-talkie, etc.) in addition to the 800 MHz radio system
☐Not applicable

Signal Operations and Signal Maintenance communicate primarily via mobile radio. Signal Construction, on the other hand, communicates primarily via portable radio. Usage is typically 8:00 AM to 5:00 PM.

Vehicles are assigned to crews (2 or 3 people). Vehicles have mobile radios. Ideally, key crew personnel should be assigned portable radios.

Cellular telephones are also used to communicate.

The reported understanding of the 800MHz radio system includes:

☒Understand benefits ☐Do not understand benefits
☒Know how to use system ☐Do not know how to use system
☒Know how to communicate with other agencies via the system
☐Do not know how to communicate with other agencies via the system

☐Not applicable

6.9.6 Use of Talk Groups[17]

The reported use of Talk-Groups includes:

☒Understand Talk-Groups ☐Do not understand Talk-Groups
☒Aware of Talk-Group Templates ☐Not Aware of Talk-Group Templates
☐Not applicable

Traffic Engineering primarily uses three talk-groups. Not sure of scope of talk-groups. Possibly due to lack of training.

6.9.7 Use of Dispatcher(s) and/or Base/Control Station(s)

The reported use of a Dispatcher(s) and/or Base/Control Station(s) includes:

☐Use Dedicated Dispatcher
☐Use Administrative Staff (e.g. Receptionist, Office Staff, etc.) to dispatch
☐Use Other Agency/Department as dispatch
☐Use Base/Control Station to dispatch
☐Use Portable to dispatch
☐Use other methods (e.g. cellular telephone) to dispatch
☒Do not use dispatch
☐Not applicable

Traffic Engineering reports that an Incident Management System is forthcoming. This system will be acquired through FDOT and will work with FHP. Co-location is likely either at FHP or Leon County.

The Incident Management System will have cameras that will aid in the dispatch of personnel, including TPD.

The Municipal Complex is a potential site for EOC and Traffic dispatch.

[17] See City of Tallahassee, Talk Group Templates

6.9.8 Coverage/Capacity

The reported coverage of the 800MHz radio system includes:

☒No coverage issues ☐Known coverage issues ☐Not applicable

The reported capacity of the 800MHz radio system includes:

☒No call waiting ☐Some call waiting ☐Not applicable

6.9.9 Voice Functionality (Encryption)

The reported voice functionality (encryption) needs include:

☐Understand encryption ☐Do not understand encryption
☐Need encryption ☒Do not need encryption
☐Not applicable

6.9.10 Interoperability/Emergency Response

The reported interoperability requirements include:

☒Need to interoperate ☐Do not need to interoperate
☐Not applicable

Traffic Engineering interoperates with law enforcement agencies such as FHP, TPD and LCSO, particularly during emergency situations. Traffic Engineering serves to best route traffic depending on the situation (i.e. evacuation, Fire response, etc.).

Traffic Engineering aids in debris removal and restoration but is not a 1st responder during emergencies.

6.9.11 Mobile Data

The reported mobile data requirements include:

☐ Have mobile data	☒ Need mobile data
☐ Do not need mobile data	☐ Not applicable

Traffic Engineering desires the ability to monitor traffic systems in-vehicle in addition to the Incident Management System. There is an expressed desire to use mobile data for work flow improvement, including work orders and performance measures.

6.9.12 Accessories/Inventory

The reported agency accessory/inventory includes:

☐ Spare batteries	☐ Desk Chargers
☐ Rack Chargers	☐ Vehicular Chargers (for portables)
☐ Speaker/microphones	☐ Leather Carry Cases
☐ Belt Clips	☐ Mobile Radios
☐ Private Call	☐ Emergency Button
☐ Surveillance/Hidden Mics	☐ Control/Base Stations
☐ Other	☐ Not applicable

The interviewee was not knowledgeable regarding the above.

6.9.13 Maintenance/Service

The reported maintenance/service use and awareness includes:

☐ Aware of and uses First Communications[18] maintenance service
☐ Not aware of First Communications maintenance service
☐ Do not use First Communications maintenance service
☐ Aware of and uses COT/RCD maintenance service
☐ Not aware of COT/RCD maintenance service
☐ Do not use COT/RCD maintenance service
☐ Not applicable

[18] First Communications is the only Tallahassee based Motorola Authorized Service Center.

The interviewee was not knowledgeable regarding the above.

6.9.14 Other Discussion Items

There were no other discussion items.

6.10 StarMetro

6.10.1 URL - http://talgov.com/starmetro/index.cfm

6.10.2 Description

StarMetro operates city bus routes in Tallahassee, Florida, including campus shuttles at Florida State University and Florida A&M University, plus a Dial-a-Ride service for seniors and disabled citizens and a variety of seasonal transit programs.

StarMetro maintains a fleet of 95 mass transit vehicles for Tallahassee. This includes 54 fixed routes buses, 17 para-transit buses (i.e. Dial-A-Ride) and various spare and support vehicles.

StarMetro employs 170 full time and part-time personnel.

StarMetro runs 4500 rides/day within Tallahassee or 1.8 million rides/year within Tallahassee.

6.10.3 Personnel Interviewed

On October 18, 2006, TCS/Hayes representatives met with Gary Dansby and Ralph Wilder. Additionally, RCD representatives were present for the duration of the interview.

6.10.4 Methods of Communication

The reported methods of communication used by the agency include:

☒ Mobile Radios	☒ Portable Radios	☒ Cellular Telephones
☒ Pagers	☐ PDA's	☐ Laptops
☒ Other	☐ Not applicable	

Additionally, StarMetro utilizes video surveillance (captured on hard drive) and wireless fare boxes.

6.10.5 Use/Understanding of Radio System

The reported use of the 800MHz radio system includes:

☒Use regularly ☐Use occasionally ☐Use rarely or not at all
☐Use other form of communication (e.g. cellular phone, portable walkie-talkie, etc.) in addition to the 800 MHz radio system
☐Not applicable

StarMetro runs routes from 5:00 AM to 3:00 AM daily. All bus drivers, vehicles and supervisors are required to utilize the 800MHz radio system.

At C.K. Steele Plaza, portable radios are used on the grounds.

The reported understanding of the 800MHz radio system includes:

☒Understand benefits ☐Do not understand benefits
☒Know how to use system ☐Do not know how to use system
☒Know how to communicate with other agencies via the system
☐Do not know how to communicate with other agencies via the system
☐Not applicable

See Section 6.10.4.

6.10.6 Use of Talk Groups[19]

The reported use of Talk-Groups includes:

☒Understand Talk-Groups ☐Do not understand Talk-Groups
☒Aware of Talk-Group Templates ☐Not Aware of Talk-Group Templates
☐Not applicable

StarMetro regularly uses Zone A but not Zones B and C. StarMetro does recognize that most users have Zones B and C loaded in the radios.

[19] See City of Tallahassee, Talk Group Templates

6.10.7 Use of Dispatcher(s) and/or Base/Control Station(s)

The reported use of a Dispatcher(s) and/or Base/Control Station(s) includes:

☒ Use Dedicated Dispatcher
☐ Use Administrative Staff (e.g. Receptionist, Office Staff, etc.) to dispatch
☐ Use Other Agency/Department as dispatch
☒ Use Base/Control Station to dispatch
☒ Use Portable to dispatch
☐ Use other methods (e.g. cellular telephone) to dispatch
☐ Do not use dispatch
☐ Not applicable

StarMetro maintains a dispatch office at Appleyard Drive. Located within this office are two control stations. One for the buses and one for Dial-A-Ride.

In addition, the Information Attendant at C.K. Steele Plaza utilizes a portable radio to coordinate bus and person routing at the Plaza.

6.10.8 Coverage/Capacity

The reported coverage of the 800MHz radio system includes:

☒ No coverage issues ☐ Known coverage issues ☐ Not applicable

The reported capacity of the 800MHz radio system includes:

☒ No call waiting ☐ Some call waiting ☐ Not applicable

6.10.9 Voice Functionality (Encryption)

The reported voice functionality (encryption) needs include:

☒ Understand encryption
☒ Need encryption
☐ Not applicable
☐ Do not understand encryption
☐ Do not need encryption

When required, StarMetro transports persons in need of medical attention. This results in the need to transmit sensitive medical information. Encrypted communications during these instances would be desired.

6.10.10Interoperability/Emergency Response

The reported interoperability requirements include:

☒Need to interoperate ☐Do not need to interoperate
☐Not applicable

StarMetro would be called upon to transport masses to shelters during emergencies. This dictates a need to communicate with law enforcement.

6.10.11Mobile Data

The reported mobile data requirements include:

☐Have mobile data ☒Need mobile data
☐Do not need mobile data ☐Not applicable

StarMetro has released an RFP for an Intelligent Transportation System. Essentially, this system would provide for a business software component consisting of a Fixed Route Support suite of software, an on-board component consisting of the hardware and software component infrastructure for a "Smart Bus" and a customer amenity component with all hardware and software infrastructure for "Smart Bus Shelters" and "Smart Transfer Centers".

6.10.12Accessories/Inventory

The reported agency accessory/inventory includes:

☒Spare batteries ☒Desk Chargers
☐Rack Chargers ☐Vehicular Chargers (for portables)
☒Speaker/microphones ☐Leather Carry Cases
☒Belt Clips ☒Mobile Radios
☐Private Call ☐Emergency Button
☐Surveillance/Hidden Mics ☒Control/Base Stations
☐Other ☐Not applicable

6.10.13Maintenance/Service

The reported maintenance/service use and awareness includes:

☒Aware of and uses First Communications[20] maintenance service
☐Not aware of First Communications maintenance service
☐Do not use First Communications maintenance service
☐Aware of and uses COT/RCD maintenance service
☐Not aware of COT/RCD maintenance service
☐Do not use COT/RCD maintenance service
☐Not applicable

6.10.14Other Discussion Items

StarMetro recommends all agencies review the city wide Emergency Action Plan.

6.11 Your Own Utilities, Electric Utility

6.11.1 URL - http://talgov.com/you/electric/index.cfm

6.11.2 Description

A municipal utility owned by and operated for the citizens of Tallahassee. Providing Electric, Water & Sewer, Gas, and Solid Waste Services with over 100 years of reliable service.

Tallahassee's electric system has a total generating capacity of 667 megawatts, maintains over 2200 miles of transmission and distribution lines, including 500 miles of underground distribution lines. Tallahassee Electric Utility employs over 300 people, who serve over 100,000 homes and businesses in the Tallahassee area.

Electric Utility employs persons within 5 divisions: System Control and Transmission Services, Transmission and Distribution, Power Production, Power Engineering and Administration Services.

[20] First Communications is the only Tallahassee based Motorola Authorized Service Center.

Electric Utility utilizes a SCADA[21] system to monitor every circuit breaker in its jurisdiction. Control is by fiber optics. In fact, Electric Utility utilizes 320 miles of fiber optic cable.

6.11.3 Personnel Interviewed

On October 18, 2006, TCS/Hayes representatives met with Paul Bailey, Gary Oberschlake and Alan Gale. Additionally, RCD representatives were present for the duration of the interview.

6.11.4 Methods of Communication

The reported methods of communication used by the agency include:

☒Mobile Radios	☒Portable Radios	☒Cellular Telephones
☒Pagers	☐PDA's	☒Laptops
☐Other	☐Not applicable	

Electric Utility is a large user of the 800MHz radio system. The Utility has a fleet of 65 mobile radios, 120 portable radios, 100 cellular telephones, 30 pagers and 62 laptops.

6.11.5 Use/Understanding of Radio System

The reported use of the 800MHz radio system includes:

☒Use regularly ☐Use occasionally ☐Use rarely or not at all
☐Use other form of communication (e.g. cellular phone, portable walkie-talkie, etc.) in addition to the 800 MHz radio system
☐Not applicable

The 800Mhz radio system is the primary method of communication for the Utility. In fact, it is a 70/30 ratio compared to cellular telephone usage. All radio traffic is recorded for safcty and other purposes.

[21] SCADA benefits should be distributed to all applicable agencies within the City and County. It became apparent during the interview process that some agencies had monitoring needs but seemed unaware of SCADA capabilities (i.e. Traffic Engineering's need to monitor traffic signal lights, etc.)

The reported understanding of the 800MHz radio system includes:

☒Understand benefits ☐Do not understand benefits
☒Know how to use system ☐Do not know how to use system
☒Know how to communicate with other agencies via the system
☐Do not know how to communicate with other agencies via the system
☐Not applicable

Electric Utility is very familiar with the 800MHz radio system and is a large user of it.

6.11.6 Use of Talk Groups[22]

The reported use of Talk-Groups includes:

☒Understand Talk-Groups ☐Do not understand Talk-Groups
☒Aware of Talk-Group Templates ☐Not Aware of Talk-Group Templates
☐Not applicable

The Utility is very familiar with talk-groups and talk-group maps. In fact, the Utility reports that it uses most if not all talk-groups.

6.11.7 Use of Dispatcher(s) and/or Base/Control Station(s)

The reported use of a Dispatcher(s) and/or Base/Control Station(s) includes:

☒Use Dedicated Dispatcher
☐Use Administrative Staff (e.g. Receptionist, Office Staff, etc.) to dispatch
☐Use Other Agency/Department as dispatch
☒Use Base/Control Station to dispatch
☐Use Portable to dispatch
☐Use other methods (e.g. cellular telephone) to dispatch
☐Do not use dispatch
☐Not applicable

[22] See City of Tallahassee, Talk Group Templates

The Utility employs three dispatchers during the day and 2 during the night. Electric Utility is a 24x7x365 operation. There are two dispatch locations at the Electric Control Center. One is the primary and the other the alternate. All service calls are dispatched via the radio system.

The Utility also utilizes seven base/control stations. These are located individually at: Utility Operations, Substation Shop, Meter Operations, Power Engineering, Perry Odum, Supervisor Room and James Smith (substation acts as back-up control station). Each base/control station serves different functionalities.

6.11.8 Coverage/Capacity

The reported coverage of the 800MHz radio system includes:

☐No coverage issues ☒Known coverage issues ☐Not applicable

The Utility reports coverage issues on Orange Avenue and St. Marks. St. Marks, however, is outside the City limits but within the coverage footprint of the 800MHz radio system.

The reported capacity of the 800MHz radio system includes:

☒No call waiting ☐Some call waiting ☐Not applicable

While the Utility does not normally experience call waiting, it does experience protocol requirement issues. In other words, calls are received from customers, dispatchers use a single channel to issue work orders to field crews. This results in a bottleneck.

6.11.9 Voice Functionality (Encryption)

The reported voice functionality (encryption) needs include:

☐Understand encryption
☐Need encryption
☐Not applicable
☒Do not understand encryption
☐Do not need encryption

The Utility expressed a potential need for encryption during business and escalated events. However, it was apparent that additional information[23] regarding encryption would be beneficial to the Utility.

6.11.10Interoperability/Emergency Response

The reported interoperability requirements include:

☒Need to interoperate ☐Do not need to interoperate
☐Not applicable

The Utility needs to interoperate with other agencies. In particular, these agencies include TPD, the Florida Reliability Control Council (FRCC) and other utility companies.

Typically, the Utility is the last one in and first one out after disasters (i.e. hurricanes). The Utility follows the service restoration protocol.

6.11.11Mobile Data

The reported mobile data requirements include:

☒Have mobile data ☒Need mobile data
☐Do not need mobile data ☐Not applicable

The Utility expressed the following mobile data needs and/or applications: Outage Management System (dispatch orders real time/clock orders), dispatch of meter orders, FEMA requirement of before/after pictures and videos, camera monitoring at sites/plants and POS system for parts, etc.

AVL could also benefit employees working in remote areas.

[23] The need to explain encryption to the majority of agencies became apparent during the interviews. Agencies had varying knowledge of encryption and its benefits. Therefore, they could or could not apply its benefits to their normal business operations.

6.11.12Accessories/Inventory

The reported agency accessory/inventory includes:

☒Spare batteries	☒Desk Chargers
☒Rack Chargers	☐Vehicular Chargers (for portables)
☐Speaker/microphones	☐Leather Carry Cases
☒Belt Clips	☐Mobile Radios
☒Private Call	☐Emergency Button
☐Surveillance/Hidden Mics	☐Control/Base Stations
☒Other	☐Not applicable

The Utility maintains a fleet of 50 spare batteries. In addition, the Utility utilizes headsets instead of speaker/microphones. Private Call and the Emergency Button could be beneficial to employees.

6.11.13Maintenance/Service

The reported maintenance/service use and awareness includes:

☒Aware of and uses First Communications[24] maintenance service
☐Not aware of First Communications maintenance service
☐Do not use First Communications maintenance service
☐Aware of and uses COT/RCD maintenance service
☐Not aware of COT/RCD maintenance service
☐Do not use COT/RCD maintenance service
☐Not applicable

6.11.14Other Discussion Items

The Utility expressed a strong desire to see a City/County owned RF/Cellular system (i.e. similar to Southern Company). The Utility expressed financial and operational benefits associated with owning such a system. The Utility requested additional information related to barriers, why no municipalities have such a system, feasibility study, etc.

[24] First Communications is the only Tallahassee based Motorola Authorized Service Center.

6.12 Your Own Utilities, Gas Utility

6.12.1 URL - http://talgov.com/you/gas/index.cfm

6.12.2 Description

A municipal utility owned by and operated for the citizens of Tallahassee. Providing Electric, Water & Sewer, Gas, and Solid Waste Services with over 100 years of reliable service.

Tallahassee has owned, operated and managed a natural gas system since 1956. The system serves over 21,000 residential and commercial customers in and around Tallahassee. Revenues from the Gas Utility are used to support City government in lieu of taxes.

Gas Utility provides repair to maintenance services, installs meters, inspects contractors and lights pilot lights. Personnel number 45 including Administration.

6.12.3 Personnel Interviewed

On October 18, 2006, TCS/Hayes representatives met with Henry Blocker. Additionally, RCD representatives were present for the duration of the interview.

6.12.4 Methods of Communication

The reported methods of communication used by the agency include:

☐ Mobile Radios	☒ Portable Radios	☒ Cellular Telephones
☐ Pagers	☐ PDA's	☒ Laptops
☒ Other	☐ Not applicable	

Gas Utility reports 80% cellular telephone usage vs. 20% radio system usage. Gas also utilizes SCADA.

6.12.5 Use/Understanding of Radio System

The reported use of the 800MHz radio system includes:

☐Use regularly ☒Use occasionally ☐Use rarely or not at all
☒Use other form of communication (e.g. cellular phone, portable walkie-talkie, etc.) in addition to the 800 MHz radio system
☐Not applicable

See Section 6.12.4.

The reported understanding of the 800MHz radio system includes:

☒Understand benefits ☐Do not understand benefits
☒Know how to use system ☐Do not know how to use system
☒Know how to communicate with other agencies via the system
☐Do not know how to communicate with other agencies via the system
☐Not applicable

6.12.6 Use of Talk Groups[25]

The reported use of Talk-Groups includes:

☒Understand Talk-Groups ☐Do not understand Talk-Groups
☒Aware of Talk-Group Templates ☐Not Aware of Talk-Group Templates
☐Not applicable

The interviewee was not able to elaborate further on talk-group usage.

6.12.7 Use of Dispatcher(s) and/or Base/Control Station(s)

The reported use of a Dispatcher(s) and/or Base/Control Station(s) includes:

☐Use Dedicated Dispatcher
☐Use Administrative Staff (e.g. Receptionist, Office Staff, etc.) to dispatch
☐Use Other Agency/Department as dispatch
☐Use Base/Control Station to dispatch
☐Use Portable to dispatch

[25] See City of Tallahassee, Talk Group Templates

☒Use other methods (e.g. cellular telephone) to dispatch
☒Do not use dispatch
☐Not applicable

Gas reports no dispatcher. Instead, Gas utilizes Station 21 when coordinating with Water Treatment.

6.12.8 Coverage/Capacity

The reported coverage of the 800MHz radio system includes:

☐No coverage issues ☒Known coverage issues ☐Not applicable

Gas reported some coverage issues but not sure whether cellular telephone or 800MHz radio system related.

The reported capacity of the 800MHz radio system includes:

☒No call waiting ☐Some call waiting ☐Not applicable

Gas reported again that the primary method of communication is via cellular telephone. This is due to the need to communicate with the public and private contractors.

6.12.9 Voice Functionality (Encryption)

The reported voice functionality (encryption) needs include:

☐Understand encryption
☐Need encryption
☐Not applicable
☒Do not understand encryption
☐Do not need encryption

Gas is an agency in need of additional information regarding encryption and its features/benefits.

6.12.10Interoperability/Emergency Response

The reported interoperability requirements include:

☒Need to interoperate ☐Do not need to interoperate
☐Not applicable

Gas expressed a need to interoperate with Fire. Due to lack of training, Gas may already have this capability but not aware of how to use it. Same applies to interoperating with other agencies.

6.12.11Mobile Data

The reported mobile data requirements include:

☐Have mobile data ☒Need mobile data
☐Do not need mobile data ☐Not applicable

Gas expressed a desire to automate some work flow processes. In addition, wireless capabilities for meter service technicians would be desirable.

6.12.12Accessories/Inventory

The reported agency accessory/inventory includes:

☒Spare batteries ☒Desk Chargers
☒Rack Chargers ☐Vehicular Chargers (for portables)
☐Speaker/microphones ☐Leather Carry Cases
☒Belt Clips ☐Mobile Radios
☐Private Call ☐Emergency Button
☐Surveillance/Hidden Mics ☐Control/Base Stations
☐Other ☐Not applicable

Gas expressed a desire for vehicular chargers and speaker/microphones.

6.12.13Maintenance/Service

The reported maintenance/service use and awareness includes:

- ☐ Aware of and uses First Communications[26] maintenance service
- ☐ Not aware of First Communications maintenance service
- ☐ Do not use First Communications maintenance service
- ☐ Aware of and uses COT/RCD maintenance service
- ☐ Not aware of COT/RCD maintenance service
- ☐ Do not use COT/RCD maintenance service
- ☐ Not applicable

Gas was not aware of maintenance procedures and processes.

6.12.14Other Discussion Items

Gas expressed a strong desire for a formal training plan related to the 800MHz system. Currently within Gas, there is none.

6.13 Your Own Utilities, Solid Waste Services

6.13.1 URL - http://talgov.com/you/solid/index.cfm

6.13.2 Description

A municipal utility owned by and operated for the citizens of Tallahassee. Providing Electric, Water & Sewer, Gas, and Solid Waste Services with over 100 years of reliable service.

Solid Waste Services provides garbage, recycling, yard waste and bulky item collection services for residential and commercial customers inside Tallahassee city limits.

Solid Waste interacts with customers on a daily basis. Solid Waste employs 80 persons and maintains a fleet of 40 trucks of which 27 are operational daily. 5 of the 40 trucks are spares and there are 8 pickup trucks in the fleet.

[26] First Communications is the only Tallahassee based Motorola Authorized Service Center.

Solid Waste serves commercial business between the hours of 12:00 AM and 6:00 AM. Residential customers are served beginning at 7:00 AM.

6.13.3 Personnel Interviewed

On October 18, 2006, TCS/Hayes representatives met with Jeff Robinson. Additionally, RCD representatives were present for the duration of the interview.

6.13.4 Methods of Communication

The reported methods of communication used by the agency include:

☒ Mobile Radios	☒ Portable Radios	☒ Cellular Telephones
☐ Pagers	☐ PDA's	☐ Laptops
☐ Other	☐ Not applicable	

Solid Waste maintains a fleet of 27 mobile radios, cellular telephones and portable radios. The cellular telephones and portable radios are assigned to supervisors and mechanics. There are eight crews within Solid Waste. Each crew is comprised of one driver and four can pullers. Front loaders, on the other hand, are dispatched with only one person per truck.

There are also dead animal pickup, small garbage and special collection services provided by Solid Waste.

6.13.5 Use/Understanding of Radio System

The reported use of the 800MHz radio system includes:

☒ Use regularly ☐ Use occasionally ☐ Use rarely or not at all
☒ Use other form of communication (e.g. cellular phone, portable walkie-talkie, etc.) in addition to the 800 MHz radio system
☐ Not applicable

Solid Waste reports utilizing the 800MHz radio system for 98% of its business. The crew driver is the only person that utilizes the radio system. The can pullers do not use the system.

The reported understanding of the 800MHz radio system includes:

☒Understand benefits ☐Do not understand benefits
☒Know how to use system ☐Do not know how to use system
☒Know how to communicate with other agencies via the system
☐Do not know how to communicate with other agencies via the system
☐Not applicable

See Section 6.13.4.

6.13.6 Use of Talk Groups[27]

The reported use of Talk-Groups includes:

☒Understand Talk-Groups ☐Do not understand Talk-Groups
☒Aware of Talk-Group Templates ☐Not Aware of Talk-Group Templates
☐Not applicable

Solid Waste utilizes a single talk-group.

6.13.7 Use of Dispatcher(s) and/or Base/Control Station(s)

The reported use of a Dispatcher(s) and/or Base/Control Station(s) includes:

☐Use Dedicated Dispatcher
☒Use Administrative Staff (e.g. Receptionist, Office Staff, etc.) to dispatch
☐Use Other Agency/Department as dispatch
☒Use Base/Control Station to dispatch
☐Use Portable to dispatch
☐Use other methods (e.g. cellular telephone) to dispatch
☐Do not use dispatch
☐Not applicable

Solid Waste has one base/control station used for dispatching. Work orders from various departments are radioed to the trucks.

[27] See City of Tallahassee, Talk Group Templates

6.13.8 Coverage/Capacity

The reported coverage of the 800MHz radio system includes:

☒No coverage issues ☐Known coverage issues ☐Not applicable

Solid Waste reported static in Thomasville, Georgia.

The reported capacity of the 800MHz radio system includes:

☒No call waiting ☐Some call waiting ☐Not applicable

6.13.9 Voice Functionality (Encryption)

The reported voice functionality (encryption) needs include:

☐Understand encryption ☐Do not understand encryption
☐Need encryption ☒Do not need encryption
☐Not applicable

6.13.10Interoperability/Emergency Response

The reported interoperability requirements include:

☐Need to interoperate ☒Do not need to interoperate
☐Not applicable

While Solid Waste expressed no need to interoperate with other agencies, they are called upon during emergency situations for clean up, etc. Therefore, additional training regarding interoperability would be beneficial to this agency.

6.13.11Mobile Data

The reported mobile data requirements include:

☐Have mobile data ☒Need mobile data
☐Do not need mobile data ☐Not applicable

Solid Waste expressed a desire to have RFID technology within the garbage cans.

6.13.12Accessories/Inventory

The reported agency accessory/inventory includes:

- ☒ Spare batteries
- ☒ Rack Chargers
- ☐ Speaker/microphones
- ☒ Belt Clips
- ☐ Private Call
- ☐ Surveillance/Hidden Mics
- ☐ Other
- ☒ Desk Chargers
- ☒ Vehicular Chargers (for portables)
- ☐ Leather Carry Cases
- ☐ Mobile Radios
- ☐ Emergency Button
- ☐ Control/Base Stations
- ☐ Not applicable

Solid Waste expressed interest in speaker/microphones.

6.13.13Maintenance/Service

The reported maintenance/service use and awareness includes:

- ☒ Aware of and uses First Communications[28] maintenance service
- ☐ Not aware of First Communications maintenance service
- ☐ Do not use First Communications maintenance service
- ☐ Aware of and uses COT/RCD maintenance service
- ☐ Not aware of COT/RCD maintenance service
- ☐ Do not use COT/RCD maintenance service
- ☐ Not applicable

6.13.14Other Discussion Items

Solid Waste expressed concerns about the size and weight of existing portable radios along with the desire to have smaller lighter weight units.

6.14 Your Own Utiltities, Utility Business & Customer Services

6.14.1 URL - http://talgov.com/you/index.cfm

[28] First Communications is the only Tallahassee based Motorola Authorized Service Center.

6.14.2 Description

A municipal utility owned by and operated for the citizens of Tallahassee. Providing Electric, Water & Sewer, Gas, and Solid Waste Services with over 100 years of reliable service.

Field Services reads, disconnects, and reconnects electric, water and gas meters for COT. Contractor location services are also provided.

Field Services employs approximately 60 persons.

6.14.3 Personnel Interviewed

On October 18, 2006, TCS/Hayes representatives met with Antonio Jackson. Additionally, RCD representatives were present for the duration of the interview.

6.14.4 Methods of Communication

The reported methods of communication used by the agency include:

☐ Mobile Radios	☒ Portable Radios	☒ Cellular Telephones
☐ Pagers	☐ PDA's	☒ Laptops
☒ Other	☐ Not applicable	

Field Services also utilizes locaters in some of their vehicular fleet.

6.14.5 Use/Understanding of Radio System

The reported use of the 800MHz radio system includes:

☒ Use regularly ☐ Use occasionally ☐ Use rarely or not at all
☒ Use other form of communication (e.g. cellular phone, portable walkie-talkie, etc.) in addition to the 800 MHz radio system
☐ Not applicable

Field Services uses the 800MHz radio system during its normal course of business. This ranges between the hours of 8:00 AM and 11:00 PM.

The reported understanding of the 800MHz radio system includes:

☒Understand benefits ☐Do not understand benefits
☐Know how to use system ☐Do not know how to use system
☒Know how to communicate with other agencies via the system
☐Do not know how to communicate with other agencies via the system
☐Not applicable

6.14.6 Use of Talk Groups[29]

The reported use of Talk-Groups includes:

☒Understand Talk-Groups ☐Do not understand Talk-Groups
☒Aware of Talk-Group Templates ☐Not Aware of Talk-Group Templates
☐Not applicable

Field Services utilizes a minimal number of talk-groups.

6.14.7 Use of Dispatcher(s) and/or Base/Control Station(s)

The reported use of a Dispatcher(s) and/or Base/Control Station(s) includes:

☒Use Dedicated Dispatcher
☐Use Administrative Staff (e.g. Receptionist, Office Staff, etc.) to dispatch
☐Use Other Agency/Department as dispatch
☒Use Base/Control Station to dispatch
☒Use Portable to dispatch
☐Use other methods (e.g. cellular telephone) to dispatch
☐Do not use dispatch
☐Not applicable

Field Services uses two base/control stations for dispatch purposes in the Gemini building. At the Park location, Field Services uses a portable radio to dispatch.

[29] See City of Tallahassee, Talk Group Templates

6.14.8 Coverage/Capacity

The reported coverage of the 800MHz radio system includes:

☐No coverage issues ☒Known coverage issues ☐Not applicable

Field Services reports coverage issues in Woodville/Havana, which is outside City limits and on Blairstone/Jim Lee (very static), which is inside City limits.

The reported capacity of the 800MHz radio system includes:

☒No call waiting ☐Some call waiting ☐Not applicable

6.14.9 Voice Functionality (Encryption)

The reported voice functionality (encryption) needs include:

☐Understand encryption
☐Need encryption
☐Not applicable
☐Do not understand encryption
☒Do not need encryption

6.14.10Interoperability/Emergency Response

The reported interoperability requirements include:

☒Need to interoperate
☐Not applicable
☐Do not need to interoperate

Field Services needs to interoperate with Animal Control, Fleet Management, TPD and LCSO.

In emergency situations, Field Services is usually the third tier called. Field Services normally assists Electric Utility and Customer Service.

6.14.11Mobile Data

The reported mobile data requirements include:

☐Have mobile data
☐Do not need mobile data
☒Need mobile data
☐Not applicable

AMR or Automated Meter Reading is a desired application. GIS/AVL is also a desired mobile data feature. A mesh data system incorporating meters is also a consideration.

6.14.12Accessories/Inventory

The reported agency accessory/inventory includes:

- ☒ Spare batteries
- ☒ Rack Chargers
- ☐ Speaker/microphones
- ☒ Belt Clips
- ☐ Private Call
- ☐ Surveillance/Hidden Mics
- ☐ Other
- ☒ Desk Chargers
- ☒ Vehicular Chargers (for portables)
- ☐ Leather Carry Cases
- ☐ Mobile Radios
- ☐ Emergency Button
- ☐ Control/Base Stations
- ☐ Not applicable

6.14.13Maintenance/Service

The reported maintenance/service use and awareness includes:

- ☒ Aware of and uses First Communications[30] maintenance service
- ☐ Not aware of First Communications maintenance service
- ☐ Do not use First Communications maintenance service
- ☐ Aware of and uses COT/RCD maintenance service
- ☐ Not aware of COT/RCD maintenance service
- ☐ Do not use COT/RCD maintenance service
- ☐ Not applicable

6.14.14Other Discussion Items

Field Services noted that their radios are subject to wear and tear, particularly weather related.

6.15 Public Works, Streets and Drainage

6.15.1 URL - http://talgov.com/pubworks/index.cfm

[30] First Communications is the only Tallahassee based Motorola Authorized Service Center.

6.15.2 Description

Public Works provides services to the community which are not directly reflected on citizens' utility bills and are not part of the public safety and transportation network (such as the Police Department and StarMetro, respectively).

Street Maintenance includes pothole patching; curb & gutter repair; sidewalk repair; base repair; guardrail repair, bridge repair; utility cut repair and unpaved roadway maintenance. Currently, potholes and utility cuts are repaired within 2 days of notification; sidewalk, curb & gutter, and unpaved roadway maintenance are performed on an as-needed basis.

Drainage Maintenance includes cleaning and reshaping roadside ditches and major canals; cleaning and restoring stormwater facilities (ponds); cleaning enclosed stormwater systems; repairing damaged drainage structures; performing weed and brush control along major canals and stormwater facilities; and dredging and stabilizing outfall ditches and ponds. Roadside ditches are maintained on as-needed basis as well as upon request from citizens. Currently, ponds (more properly known as Storm Water Management Facilities, or SWMFs) are mowed at least 2 times per year, with major maintenance activities performed on as-needed basis. Weed and brush control along major ditches is performed once per year. Citizen requests are given higher priority in scheduling of maintenance activities.

Streets and Drainage employs approximately 219 full-time employees. Streets and Drainage is responsible for all City, County and State roads within City limits as they relate to stormwater drainage.

6.15.3 Personnel Interviewed

On October 20, 2006, TCS/Hayes representatives met with John Gonzales. Additionally, RCD representatives were present for the duration of the interview.

6.15.4 Methods of Communication

The reported methods of communication used by the agency include:

☐ Mobile Radios	☒ Portable Radios	☒ Cellular Telephones
☐ Pagers	☐ PDA's	☐ Laptops
☐ Other	☐ Not applicable	

Streets and Drainage primarily uses cellular telephones. They report a pool of 101 portable radios handed down from the Atlanta Olympics.

6.15.5 Use/Understanding of Radio System

The reported use of the 800MHz radio system includes:

☐Use regularly ☐Use occasionally ☒Use rarely or not at all
☐Use other form of communication (e.g. cellular phone, portable walkie-talkie, etc.) in addition to the 800 MHz radio system
☐Not applicable

Streets and Drainage reports they will not normally use their existing pool of portable radios. They report, instead, to use portable radios given to them by other departments/agencies. When portable radios are used, they are used for traffic related work.

The reported understanding of the 800MHz radio system includes:

☒Understand benefits ☐Do not understand benefits
☒Know how to use system ☐Do not know how to use system
☒Know how to communicate with other agencies via the system
☐Do not know how to communicate with other agencies via the system
☐Not applicable

6.15.6 Use of Talk Groups[31]

The reported use of Talk-Groups includes:

☒Understand Talk-Groups ☐Do not understand Talk-Groups
☒Aware of Talk-Group Templates ☐Not Aware of Talk-Group Templates
☐Not applicable

Streets and Drainage reports using cellular telephones are their primary method of communication.

[31] See City of Tallahassee, Talk Group Templates

6.15.7 Use of Dispatcher(s) and/or Base/Control Station(s)

The reported use of a Dispatcher(s) and/or Base/Control Station(s) includes:

☐ Use Dedicated Dispatcher
☐ Use Administrative Staff (e.g. Receptionist, Office Staff, etc.) to dispatch
☐ Use Other Agency/Department as dispatch
☐ Use Base/Control Station to dispatch
☐ Use Portable to dispatch
☒ Use other methods (e.g. cellular telephone) to dispatch
☐ Do not use dispatch
☐ Not applicable

Streets and Drainage reports using cellular telephones are their primary method of communication.

6.15.8 Coverage/Capacity

The reported coverage of the 800MHz radio system includes:

☐ No coverage issues ☐ Known coverage issues ☒ Not applicable

Streets and Drainage reports using cellular telephones are their primary method of communication.

The reported capacity of the 800MHz radio system includes:

☐ No call waiting ☐ Some call waiting ☒ Not applicable

Streets and Drainage reports using cellular telephones are their primary method of communication.

6.15.9 Voice Functionality (Encryption)

The reported voice functionality (encryption) needs include:

☐ Understand encryption
☐ Need encryption
☐ Not applicable
☐ Do not understand encryption
☒ Do not need encryption

6.15.10Interoperability/Emergency Response

The reported interoperability requirements include:

☒Need to interoperate ☐Do not need to interoperate
☐Not applicable

Streets and Drainage reports a need to interoperate with TPD, TFD and other emergency response agencies. Streets and Drainage cited Presidential Directive #5 as defining Public Works as 1st responders.

Streets and Drainage is responsible for debris cleaning, road cleaning and stormwater issues.

6.15.11Mobile Data

The reported mobile data requirements include:

☐Have mobile data ☒Need mobile data
☐Do not need mobile data ☐Not applicable

Streets and Drainage reports they are developing an RFP for GPS tracking.

6.15.12Accessories/Inventory

The reported agency accessory/inventory includes:

☐Spare batteries ☐Desk Chargers
☐Rack Chargers ☐Vehicular Chargers (for portables)
☐Speaker/microphones ☐Leather Carry Cases
☐Belt Clips ☐Mobile Radios
☐Private Call ☐Emergency Button
☐Surveillance/Hidden Mics ☐Control/Base Stations
☐Other ☐Not applicable

Streets and Drainage reported they will provide an inventory of accessories.

6.15.13Maintenance/Service

The reported maintenance/service use and awareness includes:

☐Aware of and uses First Communications[32] maintenance service
☐Not aware of First Communications maintenance service
☒Do not use First Communications maintenance service
☐Aware of and uses COT/RCD maintenance service
☐Not aware of COT/RCD maintenance service
☒Do not use COT/RCD maintenance service
☐Not applicable

Streets and Drainage has a pool of 101 portable radios but is not aware of the condition of the radios. This is an opportunity to work with COT/RCD to help determine the condition of those radios.

6.15.14Other Discussion Items

Streets and Drainage mentioned a desire to return to the 800MHz radio system. This, despite the fact they have a pool of portable radios but do not use them.

6.16 Public Works, Stormwater Management

6.16.1 URL - http://talgov.com/residents/construction/stormwater.cfm

6.16.2 Description

Public Works provides services to the community which are not directly reflected on citizens' utility bills and are not part of the public safety and transportation network (such asTPD and StarMetro, respectively).

Stormwater Management employs 20 full-time personnel. Primary responsibilities include the design and planning of stormwater maintenance. Six vehicles are assigned to Stormwater Management including one pickup, one van and four blazers. Engineers use these vehicles to go to job sites. Some job sites are located in remote and off road isolated areas.

[32] First Communications is the only Tallahassee based Motorola Authorized Service Center.

6.16.3 Personnel Interviewed

On October 20, 2006, TCS/Hayes representatives met with John Buss. Additionally, RCD representatives were present for the duration of the interview.

6.16.4 Methods of Communication

The reported methods of communication used by the agency include:

☐ Mobile Radios	☒ Portable Radios	☒ Cellular Telephones
☐ Pagers	☐ PDA's	☐ Laptops
☐ Other	☐ Not applicable	

Stormwater maintains a pool of 8 portable radios. Stormwater also maintains a fleet of cellular telephones.

6.16.5 Use/Understanding of Radio System

The reported use of the 800MHz radio system includes:

☒ Use regularly ☐ Use occasionally ☐ Use rarely or not at all
☒ Use other form of communication (e.g. cellular phone, portable walkie-talkie, etc.) in addition to the 800 MHz radio system
☐ Not applicable

Monitors and field measurers use the portable radios when in the field. Cellular telephones are also used as a method of communication.

The reported understanding of the 800MHz radio system includes:

☒ Understand benefits	☐ Do not understand benefits
☒ Know how to use system	☐ Do not know how to use system

☒ Know how to communicate with other agencies via the system
☐ Do not know how to communicate with other agencies via the system
☐ Not applicable

6.16.6 Use of Talk Groups[33]

The reported use of Talk-Groups includes:

☒Understand Talk-Groups ☐Do not understand Talk-Groups
☒Aware of Talk-Group Templates ☐Not Aware of Talk-Group Templates
☐Not applicable

Stormwater primarily uses three talk-groups.

6.16.7 Use of Dispatcher(s) and/or Base/Control Station(s)

The reported use of a Dispatcher(s) and/or Base/Control Station(s) includes:

☐Use Dedicated Dispatcher
☐Use Administrative Staff (e.g. Receptionist, Office Staff, etc.) to dispatch
☐Use Other Agency/Department as dispatch
☐Use Base/Control Station to dispatch
☐Use Portable to dispatch
☒Use other methods (e.g. cellular telephone) to dispatch
☐Do not use dispatch
☐Not applicable

Stormwater typically uses cellular telephones to dispatch. Stormwater reports having a base/control station at one time but had it taken away.

6.16.8 Coverage/Capacity

The reported coverage of the 800MHz radio system includes:

☒No coverage issues ☐Known coverage issues ☐Not applicable

The reported capacity of the 800MHz radio system includes:

☒No call waiting ☐Some call waiting ☐Not applicable

[33] See City of Tallahassee, Talk Group Templates

6.16.9 Voice Functionality (Encryption)

The reported voice functionality (encryption) needs include:

☐ Understand encryption
☐ Need encryption
☐ Not applicable
☐ Do not understand encryption
☒ Do not need encryption

6.16.10 Interoperability/Emergency Response

The reported interoperability requirements include:

☒ Need to interoperate
☐ Not applicable
☐ Do not need to interoperate

Stormwater expressed a need to interoperate with Public Works, all Utilities, TPD and LCSO during emergency response situations. Stormwater plays a role in Emergency Management Response (Rapid Damage Assessment) but that role is not as prominent as it once was.

Stormwater assigns a single person to the EOC when active.

6.16.11 Mobile Data

The reported mobile data requirements include:

☐ Have mobile data
☒ Do not need mobile data
☐ Need mobile data
☐ Not applicable

Stormwater expresses the internal concern that "sometimes simple is better". In other words, while mobile data may be of benefit, the human factor may override that benefit. Nevertheless, applications such as AVL, GIS, mobile mapping and monitoring/remote sensing may be beneficial in the long run.

6.16.12 Accessories/Inventory

The reported agency accessory/inventory includes:

☐ Spare batteries
☐ Rack Chargers
☐ Desk Chargers
☐ Vehicular Chargers (for portables)

☐ Speaker/microphones	☐ Leather Carry Cases
☐ Belt Clips	☐ Mobile Radios
☐ Private Call	☐ Emergency Button
☐ Surveillance/Hidden Mics	☐ Control/Base Stations
☐ Other	☐ Not applicable

Stormwater will provide additional information regarding accessories.

6.16.13Maintenance/Service

The reported maintenance/service use and awareness includes:

☒ Aware of and uses First Communications[34] maintenance service
☐ Not aware of First Communications maintenance service
☐ Do not use First Communications maintenance service
☐ Aware of and uses COT/RCD maintenance service
☐ Not aware of COT/RCD maintenance service
☐ Do not use COT/RCD maintenance service
☐ Not applicable

6.16.14Other Discussion Items

Stormwater would like to have mobile radios in addition to the portable radios.

[34] First Communications is the only Tallahassee based Motorola Authorized Service Center.

7.0 LEON COUNTY NON-PUBLIC SAFETY END-USER INTERVIEWS

7.1 Emergency Medical Services, Volunteer Fire Departments, Chaires-Capitola

7.1.1 URL - http://www.leoncountyfl.gov/LCEMS/vfd.asp

7.1.2 Description

Leon County EMS is responsible for the administration of the Volunteer Fire Departments (VFD's) in Leon County. The Leon County EMS Medical director also provides medical direction to the VFD's to ensure smooth operations when VFD first responders and LCEMS crews are on scene together.

There are six (6) VFD's in Leon County: Chaires-Capitola, Lake Iamonia, Lake Jackson, Lake Talquin, Miccosukee and Woodville.

There are 65 volunteers county wide.

7.1.3 Personnel Interviewed

On October 19, 2006, TCS/Hayes representatives met with Robert Robertson. Additionally, RCD representatives were present for the duration of the interview.

7.1.4 Methods of Communication

The reported methods of communication used by the agency include:

☒ Mobile Radios	☒ Portable Radios	☒ Cellular Telephones
☐ Pagers	☐ PDA's	☐ Laptops
☐ Other	☐ Not applicable	

The six (6) VFD's are operated independently. Each VFD uses the 800MHz radio system to communicate with TFD.

Each VFD chief has 1 mobile and 1 portable radio. Generally, each VFD member has a portable and each truck has a mobile. However, not all VFD's have mobiles. It is important for each VFD to be properly equipped with mobile and portable radios.

7.1.5 Use/Understanding of Radio System

The reported use of the 800MHz radio system includes:

☒Use regularly ☐Use occasionally ☐Use rarely or not at all
☐Use other form of communication (e.g. cellular phone, portable walkie-talkie, etc.) in addition to the 800 MHz radio system
☐Not applicable

Chaires Capitola VFD uses the 800MHz radio system exclusively 24x7x365.

The reported understanding of the 800MHz radio system includes:

☒Understand benefits ☐Do not understand benefits
☒Know how to use system ☐Do not know how to use system
☒Know how to communicate with other agencies via the system
☐Do not know how to communicate with other agencies via the system
☐Not applicable

Chaires Capitola VFD uses the 800MHz radio system exclusively 24x7x365.

7.1.6 Use of Talk Groups[35]

The reported use of Talk-Groups includes:

☒Understand Talk-Groups ☐Do not understand Talk-Groups
☒Aware of Talk-Group Templates ☐Not Aware of Talk-Group Templates
☐Not applicable

Chaires Capitola VFD primarily uses talk-groups 2 and 9. Chaires Capitola maintains a need to communicate across several talk-groups.

7.1.7 Use of Dispatcher(s) and/or Base/Control Station(s)

The reported use of a Dispatcher(s) and/or Base/Control Station(s) includes:

☐Use Dedicated Dispatcher
☐Use Administrative Staff (e.g. Receptionist, Office Staff, etc.) to dispatch

[35] See Leon County, Talk Group Templates

☒Use Other Agency/Department as dispatch
☐Use Base/Control Station to dispatch
☐Use Portable to dispatch
☐Use other methods (e.g. cellular telephone) to dispatch
☐Do not use dispatch
☐Not applicable

Chaires Capitola does not use a dispatcher. Rather, the VFD relies solely on TFD through the 800MHz radio system.

Chaires Capitola uses/listens to pagers and then to radios in dispatch situations.

7.1.8 Coverage/Capacity

The reported coverage of the 800MHz radio system includes:

☒No coverage issues ☐Known coverage issues ☐Not applicable

The reported capacity of the 800MHz radio system includes:

☒No call waiting ☐Some call waiting ☐Not applicable

7.1.9 Voice Functionality (Encryption)

The reported voice functionality (encryption) needs include:

☒Understand encryption
☒Need encryption
☐Not applicable
☐Do not understand encryption
☐Do not need encryption

Chaires Capitola reports a need to remove analog encryption due to its cumbersome nature.

The VFD sees a need for encryption during instances when medical information and the like must be transmitted OTA.

7.1.10 Interoperability/Emergency Response

The reported interoperability requirements include:

☒Need to interoperate ☐Do not need to interoperate
☐Not applicable

Chaires Capitola reports a need to communicate with Life Flight (i.e. helicopter) and to ambuances on the ground. The VFD also needs to communicate with the LCSO (i.e. search/rescue operations), GFC and the State of Florida because Chaires Capitola is in the Tallahassee Airport's Flight Plan.

The VFD carries chainsaws in each truck. The VFD used to receive calls for assistance from FHP but no longer does.

7.1.11 Mobile Data

The reported mobile data requirements include:

☒Have mobile data ☒Need mobile data
☐Do not need mobile data ☐Not applicable

The VFD currently receives information from TFD. The VFD also currently uses "Infobook" to receive address locations.

The VFD reports a desire to have GIS for routes in cases of emergencies.

7.1.12 Accessories/Inventory

The reported agency accessory/inventory includes:

☒Spare batteries ☐Desk Chargers
☐Rack Chargers ☐Vehicular Chargers (for portables)
☐Speaker/microphones ☐Leather Carry Cases
☐Belt Clips ☐Mobile Radios
☐Private Call ☐Emergency Button
☐Surveillance/Hidden Mics ☐Control/Base Stations
☐Other ☐Not applicable

7.1.13 Maintenance/Service

The reported maintenance/service use and awareness includes:

☒ Aware of and uses First Communications[36] maintenance service
☐ Not aware of First Communications maintenance service
☐ Do not use First Communications maintenance service
☒ Aware of and uses COT/RCD maintenance service
☐ Not aware of COT/RCD maintenance service
☐ Do not use COT/RCD maintenance service
☐ Not applicable

The VFD reports using both First Communications and COT/RCD. COT/RCD is used to program radios for free.

7.1.14 Other Discussion Items

The VFD requested voice recordable pages for replaying address locations. The VFD also expressed concern regarding the acquisition of new equipment for the new system. Not sure how they could pay for it.

7.2 Public Works, Animal Control

7.2.1 URL - http://www.leoncountyfl.gov/Animal/index.asp

7.2.2 Description

Animal Control improves animal and human well-being through education, prevention, and enforcement programs and humane animal care and control services for the citizens and animals of Leon County.

Animal Control Officers can be contacted after office hours, and on weekends and holidays, by calling the Sheriff's Department at (850) 922-3300. An Animal Control Officer is available 24-hours a day, seven days a week, for emergencies in the unincorporated areas of the County.

Emergencies are:

- Rabies control and bite investigations.
- Rescue of sick, diseased or injured animals.
- Investigation of cruelty to animals in which the animal is in immediate danger.

[36] First Communications is the only Tallahassee based Motorola Authorized Service Center.

- Dangerous animals.
- Law enforcement assistance.

7.2.3 Personnel Interviewed

On October 19, 2006, TCS/Hayes representatives met with Richard Ziegler. Additionally, RCD representatives were present for the duration of the interview.

7.2.4 Methods of Communication

The reported methods of communication used by the agency include:

☐ Mobile Radios	☒ Portable Radios	☒ Cellular Telephones
☒ Pagers	☐ PDA's	☒ Laptops
☐ Other	☐ Not applicable	

Animal Control will be implementing laptops prior to 2007. Animal Control previously utilized mobile radios but have since removed them from operation.

7.2.5 Use/Understanding of Radio System

The reported use of the 800MHz radio system includes:

☒ Use regularly ☐ Use occasionally ☐ Use rarely or not at all
☒ Use other form of communication (e.g. cellular phone, portable walkie-talkie, etc.) in addition to the 800 MHz radio system
☐ Not applicable

Animal Control regularly uses the 800MHz radio system. The exception is longer conversations. During these instances, cellular telephones are used.

The reported understanding of the 800MHz radio system includes:

☒ Understand benefits	☐ Do not understand benefits
☒ Know how to use system	☐ Do not know how to use system

☒ Know how to communicate with other agencies via the system
☐ Do not know how to communicate with other agencies via the system
☐ Not applicable

7.2.6 Use of Talk Groups[37]

The reported use of Talk-Groups includes:

☒Understand Talk-Groups ☐Do not understand Talk-Groups
☒Aware of Talk-Group Templates ☐Not Aware of Talk-Group Templates
☐Not applicable

Animal Control regularly uses two to three talk groups.

7.2.7 Use of Dispatcher(s) and/or Base/Control Station(s)

The reported use of a Dispatcher(s) and/or Base/Control Station(s) includes:

☐Use Dedicated Dispatcher
☒Use Administrative Staff (e.g. Receptionist, Office Staff, etc.) to dispatch
☒Use Other Agency/Department as dispatch
☒Use Base/Control Station to dispatch
☐Use Portable to dispatch
☐Use other methods (e.g. cellular telephone) to dispatch
☐Do not use dispatch
☐Not applicable

Animal Control uses Administrative staff to dispatch between normal business hours (8:00 AM – 5:00 PM). On weekends, dispatching occur between the hours of 8:00 AM - 4:30 PM. During non-business hours, dispatching is "on-call standby".

LCSO also dispatches Animal Control via cellular telephone between 9:00 AM – 4:00 PM. LCSO uses the 800MHz radio system during all other hours.

7.2.8 Coverage/Capacity

The reported coverage of the 800MHz radio system includes:

☒No coverage issues ☐Known coverage issues ☐Not applicable

[37] See Leon County, Talk Group Templates

Animal Control reports no coverage issues in general. There may be a couple of spotty areas in the extreme edges of the county (e.g. near Wakulla and St. Marks) as well as inside some buildings.

The reported capacity of the 800MHz radio system includes:

☒No call waiting ☐Some call waiting ☐Not applicable

7.2.9 Voice Functionality (Encryption)

The reported voice functionality (encryption) needs include:

☒Understand encryption ☐Do not understand encryption
☐Need encryption ☒Do not need encryption
☐Not applicable

Animal Control reports no need for encryption. Reason reported is the ability for RF channels can be scanned. Therefore, the use of cellular telephones in some instances. This is an example of a need for additional training and education on encryption, including its features and benefits.

7.2.10 Interoperability/Emergency Response

The reported interoperability requirements include:

☒Need to interoperate ☐Do not need to interoperate
☐Not applicable

Animal Control reports a need to interoperate with various agencies. These include LCSO, COT Animal Shelter (County does not have an animal shelter), Public Works, Stormwater, Emergency Management and TPD.

During emergencies, Animal Control maintains a chair at the EOC.

7.2.11 Mobile Data

The reported mobile data requirements include:

☐Have mobile data ☒Need mobile data
☐Do not need mobile data ☐Not applicable

Animal Control reports they will be receiving laptops prior to end of 2006. The mobile data environment includes a need for GIS and AVL.

Animal Control covers three "check areas" or zones with dedicated personnel including two additional "floaters".

7.2.12 Accessories/Inventory

The reported agency accessory/inventory includes:

- ☒ Spare batteries
- ☐ Rack Chargers
- ☒ Speaker/microphones
- ☒ Belt Clips
- ☐ Private Call
- ☐ Surveillance/Hidden Mics
- ☐ Other
- ☒ Desk Chargers
- ☒ Vehicular Chargers (for portables)
- ☒ Leather Carry Cases
- ☐ Mobile Radios
- ☐ Emergency Button
- ☒ Control/Base Stations
- ☐ Not applicable

7.2.13 Maintenance/Service

The reported maintenance/service use and awareness includes:

- ☒ Aware of and uses First Communications[38] maintenance service
- ☐ Not aware of First Communications maintenance service
- ☐ Do not use First Communications maintenance service
- ☐ Aware of and uses COT/RCD maintenance service
- ☐ Not aware of COT/RCD maintenance service
- ☐ Do not use COT/RCD maintenance service
- ☐ Not applicable

7.2.14 Other Discussion Items

There were no other discussion items.

[38] First Communications is the only Tallahassee based Motorola Authorized Service Center.

7.3 Public Works, Fleet Management

7.3.1 URL - http://www.leoncountyfl.gov/PUBWORKS/Fleet/index.asp

7.3.2 Description

Fleet Management provides repair and maintenance services for 628 vehicles and equipment owned and operated by Leon County. Additionally, vehicles owned by three Constitutional Officers receive the majority of their repairs and maintenance services from this division as well. The replacement of vehicles and equipment, development of specifications before purchase, and the submission of requisitions for procurement represent other functions.

The responsibility for procurement and dispensing of gasoline, diesel fuel, and oil products is a very integral role of this division. In addition to the Board of County Commissioners' (BCC) vehicles and equipment, the Fleet Management refueling site serves as a remote refueling station for the Leon County Sheriff's Department and the Florida Department of Law Enforcement. The Fleet Division is currently pilot testing a bio-diesel fuel mixture of 80% petroleum and 20% biomass in three of the heavy-duty trucks. Bio-diesel is a clean burning fuel, produced from domestic, renewable sources (vegetable oil, soybeans, corn and other crops).

An item particularly noteworthy is the fact that all fleet maintenance related services are performed with only ten staff members. Since 1981 when the Fleet Management Division was created, staffing has been reduced approximately 39.4 percent. During the same time period, the County's fleet has increased approximately 70.6 percent.

Functional responsibilities include:

- Repair and maintenance on 628 BCC vehicles/equipment.
- Procurement, storage and distribution of 348,684 gallons of gasoline and diesel fuel.
- Procurement of parts needed for repairs.
- Assist the Risk Manager on insurance coverage.
- Develop annual vehicle/equipment Capital Improvements Program (CIP).
- Implement and maintain total cost concept buying on heavy equipment.
- Provide road and field service repairs on disabled or non-movable equipment.

- Manage and coordinate repairs on vehicles involved in traffic accidents, vandalism, and theft.
- Maintain and repair seven computerized mosquito control fogging units.
- Coordinate wrecker service for disabled vehicles.
- Coordinate tire repair for field service vehicles and normal replacement because of wear, damage, etc.

7.3.3 Personnel Interviewed

On October 19, 2006, TCS/Hayes representatives met with John Pompey and Linda Dix. Additionally, RCD representatives were present for the duration of the interview.

7.3.4 Methods of Communication

The reported methods of communication used by the agency include:

☒ Mobile Radios	☒ Portable Radios	☒ Cellular Telephones
☐ Pagers	☐ PDA's	☐ Laptops
☐ Other	☐ Not applicable	

Fleet Management does not deploy portable radios in the field due to cost considerations. If Fleet Management could afford more portable radios, they would deploy more portable radios.

7.3.5 Use/Understanding of Radio System

The reported use of the 800MHz radio system includes:

☐ Use regularly ☒ Use occasionally ☐ Use rarely or not at all
☐ Use other form of communication (e.g. cellular phone, portable walkie-talkie, etc.) in addition to the 800 MHz radio system
☐ Not applicable

Fleet Management uses the 800MHz radio system for staff members. Fleet reports having issues with simplicity and use of mobile radios in the field. Fleet Management has audio issues with mobiles in the field. This is due to staff leaving work vehicles to work on disabled vehicles.

The reported understanding of the 800MHz radio system includes:

☒Understand benefits ☐Do not understand benefits
☒Know how to use system ☐Do not know how to use system
☒Know how to communicate with other agencies via the system
☐Do not know how to communicate with other agencies via the system
☐Not applicable

7.3.6 Use of Talk Groups[39]

The reported use of Talk-Groups includes:

☒Understand Talk-Groups ☐Do not understand Talk-Groups
☒Aware of Talk-Group Templates ☐Not Aware of Talk-Group Templates
☐Not applicable

Fleet Management primarily uses two talk-groups.

7.3.7 Use of Dispatcher(s) and/or Base/Control Station(s)

The reported use of a Dispatcher(s) and/or Base/Control Station(s) includes:

☐Use Dedicated Dispatcher
☒Use Administrative Staff (e.g. Receptionist, Office Staff, etc.) to dispatch
☐Use Other Agency/Department as dispatch
☒Use Base/Control Station to dispatch
☐Use Portable to dispatch
☐Use other methods (e.g. cellular telephone) to dispatch
☐Do not use dispatch
☐Not applicable

Fleet Management relies on Administrative staff and a Shop Foreman to aid in dispatching. There are two base/control stations from which dispatching occurs. The Shop Foreman acts as the primary dispatcher backed up by Administrative staff.

[39] See Leon County, Talk Group Templates

7.3.8 Coverage/Capacity

The reported coverage of the 800MHz radio system includes:

☐No coverage issues ☒Known coverage issues ☐Not applicable

Fleet Management reports known coverage issues within the county. However, Fleet Management representatives need to obtain specific information from field personnel.

The reported capacity of the 800MHz radio system includes:

☒No call waiting ☐Some call waiting ☐Not applicable

7.3.9 Voice Functionality (Encryption)

The reported voice functionality (encryption) needs include:

☒Understand encryption ☐Do not understand encryption
☒Need encryption ☐Do not need encryption
☐Not applicable

Fleet Management expressed a desire to have encryption. One example includes dispatching a mechanic to repair a vehicle and finding it abused and/or neglected. This requires transmitting this information over-the-air. Another example would be an instance of employee confidentiality (i.e. employee family issues).

7.3.10 Interoperability/Emergency Response

The reported interoperability requirements include:

☒Need to interoperate ☐Do not need to interoperate
☐Not applicable

Fleet Management has a need to interoperate with all county agencies. Fleet Management expressed a need to be better trained in understanding Mutual Aid. This request can apply across all non-public safety agencies.

One role Fleet Management plays during emergencies would be prisoner transport via school bus.

7.3.11 Mobile Data

The reported mobile data requirements include:

☐ Have mobile data	☒ Need mobile data
☐ Do not need mobile data	☐ Not applicable

Fleet Management expressed a desire to obtain mobile data capabilities. Specific applications range from issuing work orders to GPS on mosquito trucks.

7.3.12 Accessories/Inventory

The reported agency accessory/inventory includes:

☐ Spare batteries	☐ Desk Chargers
☐ Rack Chargers	☐ Vehicular Chargers (for portables)
☐ Speaker/microphones	☐ Leather Carry Cases
☐ Belt Clips	☒ Mobile Radios
☐ Private Call	☐ Emergency Button
☐ Surveillance/Hidden Mics	☒ Control/Base Stations
☐ Other	☐ Not applicable

Fleet Management requests additional portable radios and cellular telephones. Fleet Management also requested, in addition to the portable radios, applicable accessories such as spare batteries, desk chargers, belt clips, etc.

7.3.13 Maintenance/Service

The reported maintenance/service use and awareness includes:

☒ Aware of and uses First Communications[40] maintenance service
☐ Not aware of First Communications maintenance service
☐ Do not use First Communications maintenance service
☐ Aware of and uses COT/RCD maintenance service
☐ Not aware of COT/RCD maintenance service
☐ Do not use COT/RCD maintenance service
☐ Not applicable

[40] First Communications is the only Tallahassee based Motorola Authorized Service Center.

7.3.14 Other Discussion Items

There were no other discussion items.

7.4 Public Works, Mosquito Control/Stormwater Maintenance

7.4.1 URL - http://www.leoncountyfl.gov/mosquito/
http://www.leoncountyfl.gov/lcswm/index.asp

7.4.2 Description

Mosquito Control and Stormwater Maintenance provides Leon County residents and visitors with effective and environmentally sound mosquito control and Stormwater Maintenance services. Services and educational programs are rendered to protect public health, the environment and provide for public safety and human comfort as well as to enhance the economy and promote a higher quality of life.

Mosquito Control has responsibility for the entire county. There are 13 mobile equipped vehicles. In addition, Mosquito Control contracts with LCSO to do aerial spraying. In fact, some mobile radios have the aerial band programmed within them.

Stormwater Maintenance also has responsibility for the entire county. Stormwater primarily uses portable radios to communicate. However, Stormwater would like to have mobiles equipped within each vehicle it owns. Currently, this is not the case. One applicable reason is that Stormwater oversees LCSO and SOF inmates during clean-up/maintenance operations (i.e. workcamps).

7.4.3 Personnel Interviewed

On October 19, 2006, TCS/Hayes representatives met with Glen Pourciau. Additionally, RCD representatives were present for the duration of the interview.

7.4.4 Methods of Communication

The reported methods of communication used by the agency include:

☒Mobile Radios	☒Portable Radios	☒Cellular Telephones
☐Pagers	☐PDA's	☐Laptops
☐Other	☐Not applicable	

7.4.5 Use/Understanding of Radio System

The reported use of the 800MHz radio system includes:

☒Use regularly ☐Use occasionally ☐Use rarely or not at all
☐Use other form of communication (e.g. cellular phone, portable walkie-talkie, etc.) in addition to the 800 MHz radio system
☐Not applicable

Mosquito Control and Stormwater Maintenance use the 800MHz radio system on a regular basis.

The reported understanding of the 800MHz radio system includes:

☒Understand benefits ☐Do not understand benefits
☒Know how to use system ☐Do not know how to use system
☒Know how to communicate with other agencies via the system
☐Do not know how to communicate with other agencies via the system
☐Not applicable

7.4.6 Use of Talk Groups[41]

The reported use of Talk-Groups includes:

☒Understand Talk-Groups ☐Do not understand Talk-Groups
☒Aware of Talk-Group Templates ☐Not Aware of Talk-Group Templates
☐Not applicable

[41] See Leon County, Talk Group Templates

7.4.7 Use of Dispatcher(s) and/or Base/Control Station(s)

The reported use of a Dispatcher(s) and/or Base/Control Station(s) includes:

☐ Use Dedicated Dispatcher
☒ Use Administrative Staff (e.g. Receptionist, Office Staff, etc.) to dispatch
☐ Use Other Agency/Department as dispatch
☐ Use Base/Control Station to dispatch
☐ Use Portable to dispatch
☐ Use other methods (e.g. cellular telephone) to dispatch
☐ Do not use dispatch
☐ Not applicable

Mosquito Control and Stormwater Maintenance report using Administrative staff to conduct dispatch functions. This is accomplished via portable radio.

7.4.8 Coverage/Capacity

The reported coverage of the 800MHz radio system includes:

☐ No coverage issues ☒ Known coverage issues ☐ Not applicable

Mosquito Control and Stormwater Maintenance report coverage issues north of Miccosukee Road and along Highway 20 remote areas. Specific locations were not provided during the interview.

The reported capacity of the 800MHz radio system includes:

☒ No call waiting ☐ Some call waiting ☐ Not applicable

7.4.9 Voice Functionality (Encryption)

The reported voice functionality (encryption) needs include:

☒ Understand encryption ☐ Do not understand encryption
☒ Need encryption ☐ Do not need encryption
☐ Not applicable

A need for encryption was expressed.

7.4.10 Interoperability/Emergency Response

The reported interoperability requirements include:

☒ Need to interoperate
☐ Do not need to interoperate
☐ Not applicable

Mosquito Control and Stormwater Maintenance have a need to interoperate with other agencies. These include Public Works agencies and the LCSO. The need to interoperate with LCSO occurs during instances of inmate use during clean-up/maintenance operations.

7.4.11 Mobile Data

The reported mobile data requirements include:

☐ Have mobile data
☒ Need mobile data
☐ Do not need mobile data
☐ Not applicable

A need for mobile data was expressed. Mobile data would be applicable for GPS/AVL functionality as well as GIS.

7.4.12 Accessories/Inventory

The reported agency accessory/inventory includes:

☒ Spare batteries
☒ Desk Chargers
☐ Rack Chargers
☐ Vehicular Chargers (for portables)
☒ Speaker/microphones
☐ Leather Carry Cases
☒ Belt Clips
☐ Mobile Radios
☐ Private Call
☐ Emergency Button
☐ Surveillance/Hidden Mics
☐ Control/Base Stations
☐ Other
☐ Not applicable

Mosquito Control and Stormwater Maintenance expressed a desire for additional knowledge/training regarding the Emergency button.

7.4.13 Maintenance/Service

The reported maintenance/service use and awareness includes:

☒ Aware of and uses First Communications[42] maintenance service
☐ Not aware of First Communications maintenance service
☐ Do not use First Communications maintenance service
☐ Aware of and uses COT/RCD maintenance service
☐ Not aware of COT/RCD maintenance service
☐ Do not use COT/RCD maintenance service
☐ Not applicable

7.4.14 Other Discussion Items

There were no other discussion items.

7.5 Public Works, Operations

7.5.1 URL - http://www.leoncountyfl.gov/PUBWORKS/Oper/index.asp

7.5.2 Description

Operations provides for the safety, comfort and convenience of the public by creating, maintaining and managing infrastructure and programs supporting transportation, roadside beautification and stormwater maintenance.

Operations works 24x7x365. There are 106 staff members. Staff utilizes crew trucks and supervisory vehicles to perform duties.

7.5.3 Personnel Interviewed

On October 19, 2006, TCS/Hayes representatives met with Dale Walker and Jim Hazelip. Additionally, RCD representatives were present for the duration of the interview.

[42] First Communications is the only Tallahassee based Motorola Authorized Service Center.

7.5.4 Methods of Communication

The reported methods of communication used by the agency include:

☒Mobile Radios	☒Portable Radios	☒Cellular Telephones
☒Pagers	☐PDA's	☒Laptops
☐Other	☐Not applicable	

Operations has been using laptops with Sprint aircards for approximately one year.

7.5.5 Use/Understanding of Radio System

The reported use of the 800MHz radio system includes:

☒Use regularly ☐Use occasionally ☐Use rarely or not at all
☒Use other form of communication (e.g. cellular phone, portable walkie-talkie, etc.) in addition to the 800 MHz radio system
☐Not applicable

Operations uses the 800MHz radio system daily. The radio system is the primary method of communication. After hours and on weekends, on-call staff utilizes portable and mobile communications.

The reported understanding of the 800MHz radio system includes:

☒Understand benefits ☐Do not understand benefits
☒Know how to use system ☐Do not know how to use system
☒Know how to communicate with other agencies via the system
☐Do not know how to communicate with other agencies via the system
☐Not applicable

7.5.6 Use of Talk Groups[43]

The reported use of Talk-Groups includes:

☒ Understand Talk-Groups ☐ Do not understand Talk-Groups
☒ Aware of Talk-Group Templates ☐ Not Aware of Talk-Group Templates
☐ Not applicable

Operations primarily uses two talk-groups.

7.5.7 Use of Dispatcher(s) and/or Base/Control Station(s)

The reported use of a Dispatcher(s) and/or Base/Control Station(s) includes:

☐ Use Dedicated Dispatcher
☒ Use Administrative Staff (e.g. Receptionist, Office Staff, etc.) to dispatch
☐ Use Other Agency/Department as dispatch
☐ Use Base/Control Station to dispatch
☒ Use Portable to dispatch
☐ Use other methods (e.g. cellular telephone) to dispatch
☐ Do not use dispatch
☐ Not applicable

Administrative staff monitors traffic via portable radio.

7.5.8 Coverage/Capacity

The reported coverage of the 800MHz radio system includes:

☐ No coverage issues ☒ Known coverage issues ☐ Not applicable

Operations reports coverage issues along Miccosukee Road, but is not able to provide specifics at the time of the interview. This issue is consistent with other agencies.

The reported capacity of the 800MHz radio system includes:

☒ No call waiting ☐ Some call waiting ☐ Not applicable

[43] See Leon County, Talk Group Templates

7.5.9 Voice Functionality (Encryption)

The reported voice functionality (encryption) needs include:

☒ Understand encryption	☐ Do not understand encryption
☐ Need encryption	☒ Do not need encryption
☐ Not applicable	

While Operations reports no real need for encryption, an opportunity for encryption may be available during times when Operations must communicate with LCSO.

7.5.10 Interoperability/Emergency Response

The reported interoperability requirements include:

☒ Need to interoperate	☐ Do not need to interoperate
☐ Not applicable	

Operations reports a need to interoperate with LCSO. Particularly when inmate crews are deployed in the field.

Operations also acts as a 1st responder for roadways, stormwater, etc. Operations also works with FEMA and LC EOC, especially during after storm assessments.

7.5.11 Mobile Data

The reported mobile data requirements include:

☒ Have mobile data	☐ Need mobile data
☐ Do not need mobile data	☐ Not applicable

Operations currently deploys mobile data. Operations uses Sprint aircards for communication connectivity. Operations reports that coverage with the aircards is a concern.

Operations currently has GIS applications.

7.5.12 Accessories/Inventory

The reported agency accessory/inventory includes:

- ☒ Spare batteries
- ☐ Rack Chargers
- ☒ Speaker/microphones
- ☒ Belt Clips
- ☐ Private Call
- ☐ Surveillance/Hidden Mics
- ☐ Other
- ☒ Desk Chargers
- ☒ Vehicular Chargers (for portables)
- ☒ Leather Carry Cases
- ☒ Mobile Radios
- ☒ Emergency Button
- ☐ Control/Base Stations
- ☐ Not applicable

7.5.13 Maintenance/Service

The reported maintenance/service use and awareness includes:

- ☒ Aware of and uses First Communications[44] maintenance service
- ☐ Not aware of First Communications maintenance service
- ☐ Do not use First Communications maintenance service
- ☐ Aware of and uses COT/RCD maintenance service
- ☐ Not aware of COT/RCD maintenance service
- ☐ Do not use COT/RCD maintenance service
- ☐ Not applicable

7.5.14 Other Discussion Items

Operations reports that formal training is non-existent. Personnel learn on-the-job. This is not Operations' desired method of training.

7.6 Public Works, Solid Waste Management

7.6.1 URL - http://www.leoncountyfl.gov/solidwaste/index.asp

7.6.2 Description

Solid Waste has responsibility for the following: Landfill, Rural Waste Service Centers, Curbside Services, Neighborhood Roundups, Recycling and Hazardous Waste.

[44] First Communications is the only Tallahassee based Motorola Authorized Service Center.

7.6.3 Personnel Interviewed

On October 19, 2006, TCS/Hayes representatives were scheduled to meet with Norm Thomas. Mr. Thomas did not show for the interview.

7.6.4 Methods of Communication

The reported methods of communication used by the agency include:

☐ Mobile Radios	☐ Portable Radios	☐ Cellular Telephones
☐ Pagers	☐ PDA's	☐ Laptops
☐ Other	☒ Not applicable	

7.6.5 Use/Understanding of Radio System

The reported use of the 800MHz radio system includes:

☐ Use regularly ☐ Use occasionally ☐ Use rarely or not at all
☐ Use other form of communication (e.g. cellular phone, portable walkie-talkie, etc.) in addition to the 800 MHz radio system
☒ Not applicable

The reported understanding of the 800MHz radio system includes:

☐ Understand benefits	☐ Do not understand benefits
☐ Know how to use system	☐ Do not know how to use system

☐ Know how to communicate with other agencies via the system
☐ Do not know how to communicate with other agencies via the system
☒ Not applicable

7.6.6 Use of Talk Groups[45]

The reported use of Talk-Groups includes:

☐ Understand Talk-Groups	☐ Do not understand Talk-Groups
☐ Aware of Talk-Group Templates	☐ Not Aware of Talk-Group Templates

☒ Not applicable

[45] See Leon County, Talk Group Templates

7.6.7 Use of Dispatcher(s) and/or Base/Control Station(s)

The reported use of a Dispatcher(s) and/or Base/Control Station(s) includes:

☐ Use Dedicated Dispatcher
☐ Use Administrative Staff (e.g. Receptionist, Office Staff, etc.) to dispatch
☐ Use Other Agency/Department as dispatch
☐ Use Base/Control Station to dispatch
☐ Use Portable to dispatch
☐ Use other methods (e.g. cellular telephone) to dispatch
☐ Do not use dispatch
☒ Not applicable

7.6.8 Coverage/Capacity

The reported coverage of the 800MHz radio system includes:

☐ No coverage issues ☐ Known coverage issues ☒ Not applicable

The reported capacity of the 800MHz radio system includes:

☐ No call waiting ☐ Some call waiting ☒ Not applicable

7.6.9 Voice Functionality (Encryption)

The reported voice functionality (encryption) needs include:

☐ Understand encryption ☐ Do not understand encryption
☐ Need encryption ☐ Do not need encryption
☒ Not applicable

7.6.10 Interoperability/Emergency Response

The reported interoperability requirements include:

☐ Need to interoperate ☐ Do not need to interoperate
☒ Not applicable

7.6.11 Mobile Data

The reported mobile data requirements include:

- ☐ Have mobile data
- ☐ Do not need mobile data
- ☐ Need mobile data
- ☒ Not applicable

7.6.12 Accessories/Inventory

The reported agency accessory/inventory includes:

- ☐ Spare batteries
- ☐ Rack Chargers
- ☐ Speaker/microphones
- ☐ Belt Clips
- ☐ Private Call
- ☐ Surveillance/Hidden Mics
- ☐ Other
- ☐ Desk Chargers
- ☐ Vehicular Chargers (for portables)
- ☐ Leather Carry Cases
- ☐ Mobile Radios
- ☐ Emergency Button
- ☐ Control/Base Stations
- ☒ Not applicable

7.6.13 Maintenance/Service

The reported maintenance/service use and awareness includes:

- ☐ Aware of and uses First Communications[46] maintenance service
- ☐ Not aware of First Communications maintenance service
- ☐ Do not use First Communications maintenance service
- ☐ Aware of and uses COT/RCD maintenance service
- ☐ Not aware of COT/RCD maintenance service
- ☐ Do not use COT/RCD maintenance service
- ☒ Not applicable

7.6.14 Other Discussion Items

Not applicable.

[46] First Communications is the only Tallahassee based Motorola Authorized Service Center.

7.7 Public Works, Division of Parks and Recreation

7.7.1 URL - http://www.leoncountyfl.gov/parks/

7.7.2 Description

Parks and Recreation is dedicated to developing and maintaining pristine parks in unincorporated Leon County. Parks and Recreation has responsibility for over 2,800 acres of community parks, boat landings, campgrounds and greenways.

Parks and Recreation employs 35 persons, each assigned a portable radio. 15 vehicles are in its fleet including trucks, pickups and SUV's.

7.7.3 Personnel Interviewed

On October 19, 2006, TCS/Hayes representatives met with Pat Plocek. Additionally, RCD representatives were present for the duration of the interview.

7.7.4 Methods of Communication

The reported methods of communication used by the agency include:

☐ Mobile Radios	☒ Portable Radios	☒ Cellular Telephones
☐ Pagers	☐ PDA's	☐ Laptops
☐ Other	☐ Not applicable	

7.7.5 Use/Understanding of Radio System

The reported use of the 800MHz radio system includes:

☒ Use regularly ☐ Use occasionally ☐ Use rarely or not at all
☒ Use other form of communication (e.g. cellular phone, portable walkie-talkie, etc.) in addition to the 800 MHz radio system
☐ Not applicable

While Parks and Recreation uses the 800MHz radio system when it can, there is a reported need to improve training and understanding of the system. For example, Parks and Recreation is not readily familiar with talk-groups are available to it and for what purposes.

The reported understanding of the 800MHz radio system includes:

☒ Understand benefits
☐ Do not understand benefits
☒ Know how to use system
☐ Do not know how to use system
☒ Know how to communicate with other agencies via the system
☐ Do not know how to communicate with other agencies via the system
☐ Not applicable

Parks and Recreation reports a need for improved training and overall understanding of the 800MHz radio system.

7.7.6 Use of Talk Groups[47]

The reported use of Talk-Groups includes:

☒ Understand Talk-Groups
☐ Do not understand Talk-Groups
☒ Aware of Talk-Group Templates
☐ Not Aware of Talk-Group Templates
☐ Not applicable

Parks and Recreation reports a need for improved training and overall understanding of the 800MHz radio system, including talk-groups.

7.7.7 Use of Dispatcher(s) and/or Base/Control Station(s)

The reported use of a Dispatcher(s) and/or Base/Control Station(s) includes:

☐ Use Dedicated Dispatcher
☒ Use Administrative Staff (e.g. Receptionist, Office Staff, etc.) to dispatch
☐ Use Other Agency/Department as dispatch
☐ Use Base/Control Station to dispatch
☐ Use Portable to dispatch
☐ Use other methods (e.g. cellular telephone) to dispatch
☐ Do not use dispatch
☐ Not applicable

Dispatch is conducted by supervisors.

[47] See Leon County, Talk Group Templates

7.7.8 Coverage/Capacity

The reported coverage of the 800MHz radio system includes:

☐No coverage issues ☒Known coverage issues ☐Not applicable

Parks and Recreation reports known coverage issues near Miccosukee Road close to the county border. This known coverage area is consistent with other agency reports.

The reported capacity of the 800MHz radio system includes:

☒No call waiting ☐Some call waiting ☐Not applicable

7.7.9 Voice Functionality (Encryption)

The reported voice functionality (encryption) needs include:

☒Understand encryption ☐Do not understand encryption
☒Need encryption ☐Do not need encryption
☐Not applicable

Parks and Recreation reports a need for encryption as it relates to the performance of supervisory duties, including personnel related communications.

7.7.10 Interoperability/Emergency Response

The reported interoperability requirements include:

☒Need to interoperate ☐Do not need to interoperate
☐Not applicable

Parks and Recreation reports a need to interoperate with Public Services during and after emergencies for preparation and clean up.

Also, campground attendants need to communicate with law enforcement in cases of escalated incidents or criminal activity on the campgrounds. Currently, this is done via cellular telephone.

7.7.11 Mobile Data

The reported mobile data requirements include:

☐ Have mobile data	☒ Need mobile data
☐ Do not need mobile data	☐ Not applicable

Parks and Recreation reports a need for mobile data applications on the campgrounds.

7.7.12 Accessories/Inventory

The reported agency accessory/inventory includes:

☒ Spare batteries	☒ Desk Chargers
☐ Rack Chargers	☐ Vehicular Chargers (for portables)
☒ Speaker/microphones	☐ Leather Carry Cases
☒ Belt Clips	☐ Mobile Radios
☐ Private Call	☐ Emergency Button
☐ Surveillance/Hidden Mics	☐ Control/Base Stations
☐ Other	☐ Not applicable

7.7.13 Maintenance/Service

The reported maintenance/service use and awareness includes:

☒ Aware of and uses First Communications[48] maintenance service
☐ Not aware of First Communications maintenance service
☐ Do not use First Communications maintenance service
☐ Aware of and uses COT/RCD maintenance service
☐ Not aware of COT/RCD maintenance service
☐ Do not use COT/RCD maintenance service
☐ Not applicable

7.7.14 Other Discussion Items

Parks and Recreation reports their current inventory is in need of replacement.

[48] First Communications is the only Tallahassee based Motorola Authorized Service Center.

7.8 Management Info Services, MIS/GIS

7.8.1 URL - http://www.leoncountyfl.gov/mis/

7.8.2 Description

MIS provides continually improved, efficient, cost effective technology and telecommunications products, services and information.

GIS is responsible for the planning, development, and implementation of the joint Tallahassee-Leon County GIS enterprise database. GIS maintains the base map with five year aerial photogram metric mapping projects as well as in-house updates from permitting data. GIS maintains a website to distribute digital and hard copy output for easy internal and public access to GIS data. GIS develops new data layers, writes programs to manipulate data, and analyzes spatial data. GIS also serves as a technical resource to City/County user departments.

MIS/GIS operates 24x7x365 with on-call staff during non-business hours.

7.8.3 Personnel Interviewed

On October 19, 2006, TCS/Hayes representatives met with Michelle Taylor and Rodney Spivey. Additionally, RCD representatives were present for the duration of the interview.

7.8.4 Methods of Communication

The reported methods of communication used by the agency include:

☐ Mobile Radios	☒ Portable Radios	☒ Cellular Telephones
☐ Pagers	☐ PDA's	☒ Laptops
☐ Other	☐ Not applicable	

MIS/GIS reports an inventory of three portable radios, but none are operational. This is a maintenance issue that may require additional training.

7.8.5 Use/Understanding of Radio System

The reported use of the 800MHz radio system includes:

☐Use regularly ☒Use occasionally ☐Use rarely or not at all
☒Use other form of communication (e.g. cellular phone, portable walkie-talkie, etc.) in addition to the 800 MHz radio system
☐Not applicable

MIS/GIS does not use the 800MHz radio system on a regular basis. MIS/GIS reports the radios are too big, bulky and heavy. Use is occasional.

Instead, MIS/GIS uses cellular aircards.

The reported understanding of the 800MHz radio system includes:

☒Understand benefits ☐Do not understand benefits
☒Know how to use system ☐Do not know how to use system
☒Know how to communicate with other agencies via the system
☐Do not know how to communicate with other agencies via the system
☐Not applicable

Even though MIS/GIS understands the use and benefits of the 800MHz radio system, it is not used regularly. Instead, cellular telephones are used.

7.8.6 Use of Talk Groups[49]

The reported use of Talk-Groups includes:

☒Understand Talk-Groups ☐Do not understand Talk-Groups
☒Aware of Talk-Group Templates ☐Not Aware of Talk-Group Templates
☐Not applicable

See Section 7.8.5.

[49] See Leon County, Talk Group Templates

7.8.7 Use of Dispatcher(s) and/or Base/Control Station(s)

The reported use of a Dispatcher(s) and/or Base/Control Station(s) includes:

☐ Use Dedicated Dispatcher
☐ Use Administrative Staff (e.g. Receptionist, Office Staff, etc.) to dispatch
☐ Use Other Agency/Department as dispatch
☐ Use Base/Control Station to dispatch
☐ Use Portable to dispatch
☐ Use other methods (e.g. cellular telephone) to dispatch
☒ Do not use dispatch
☐ Not applicable

See Section 7.8.5.

7.8.8 Coverage/Capacity

The reported coverage of the 800MHz radio system includes:

☐ No coverage issues ☐ Known coverage issues ☒ Not applicable

See Section 7.8.5.

The reported capacity of the 800MHz radio system includes:

☐ No call waiting ☐ Some call waiting ☒ Not applicable

See Section 7.8.5.

7.8.9 Voice Functionality (Encryption)

The reported voice functionality (encryption) needs include:

☐ Understand encryption
☐ Need encryption
☒ Not applicable
☐ Do not understand encryption
☐ Do not need encryption

See Section 7.8.5.

7.8.10 Interoperability/Emergency Response

The reported interoperability requirements include:

☒ Need to interoperate ☐ Do not need to interoperate
☐ Not applicable

MIS/GIS reports a need to interoperate with Facilities Management, Public Works and other agencies.

MIS/GIS participates in EOC activities during times of activation.

7.8.11 Mobile Data

The reported mobile data requirements include:

☒ Have mobile data ☐ Need mobile data
☐ Do not need mobile data ☐ Not applicable

MIS/GIS reports a need to improve its work order management processes. A need for ambulance service AVL is also present. As is a need for rapid damage assessments for growth management inspectors.

MIS/GIS believes the right mobile data system will provide cost effectiveness, higher speeds and enhanced security features.

7.8.12 Accessories/Inventory

The reported agency accessory/inventory includes:

☐ Spare batteries
☐ Rack Chargers
☐ Speaker/microphones
☐ Belt Clips
☐ Private Call
☐ Surveillance/Hidden Mics
☐ Other
☐ Desk Chargers
☐ Vehicular Chargers (for portables)
☐ Leather Carry Cases
☐ Mobile Radios
☐ Emergency Button
☐ Control/Base Stations
☒ Not applicable

7.8.13 Maintenance/Service

The reported maintenance/service use and awareness includes:

☐ Aware of and uses First Communications[50] maintenance service
☐ Not aware of First Communications maintenance service
☐ Do not use First Communications maintenance service
☐ Aware of and uses COT/RCD maintenance service
☐ Not aware of COT/RCD maintenance service
☐ Do not use COT/RCD maintenance service
☒ Not applicable

See Section 7.8.5.

7.8.14 Other Discussion Items

There were no other discussion items.

7.9 Health Department, Director

7.9.1 URL - http://www.leoncountyfl.gov/LCPHU/index.asp

7.9.2 Description

Health works to prevent disease and promote health.

Health is technically a SOF agency. Health employs 160 employees. There are thirteen units in the department.

7.9.3 Personnel Interviewed

On October 20, 2006, TCS/Hayes representatives met with Alex Mahon. Additionally, RCD representatives were present for the duration of the interview.

[50] First Communications is the only Tallahassee based Motorola Authorized Service Center.

7.9.4 Methods of Communication

The reported methods of communication used by the agency include:

☒Mobile Radios	☒Portable Radios	☐Cellular Telephones
☐Pagers	☐PDA's	☐Laptops
☐Other	☐Not applicable	

7.9.5 Use/Understanding of Radio System

The reported use of the 800MHz radio system includes:

☒Use regularly ☐Use occasionally ☐Use rarely or not at all
☒Use other form of communication (e.g. cellular phone, portable walkie-talkie, etc.) in addition to the 800 MHz radio system
☐Not applicable

Health mainly uses mobile radios for communications. Portable radios are not used regularly and have not been for some time.

On occasion, limited range portable radios (e.g. Walk-abouts) are used in Special Needs shelters.

The reported understanding of the 800MHz radio system includes:

☒Understand benefits ☐Do not understand benefits
☒Know how to use system ☐Do not know how to use system
☒Know how to communicate with other agencies via the system
☐Do not know how to communicate with other agencies via the system
☐Not applicable

7.9.6 Use of Talk Groups[51]

The reported use of Talk-Groups includes:

☒Understand Talk-Groups ☐Do not understand Talk-Groups
☒Aware of Talk-Group Templates ☐Not Aware of Talk-Group Templates
☐Not applicable

[51] See Leon County, Talk Group Templates

Health primarily uses a single talk-group.

7.9.7 Use of Dispatcher(s) and/or Base/Control Station(s)

The reported use of a Dispatcher(s) and/or Base/Control Station(s) includes:

☐ Use Dedicated Dispatcher
☒ Use Administrative Staff (e.g. Receptionist, Office Staff, etc.) to dispatch
☐ Use Other Agency/Department as dispatch
☒ Use Base/Control Station to dispatch
☐ Use Portable to dispatch
☐ Use other methods (e.g. cellular telephone) to dispatch
☐ Do not use dispatch
☐ Not applicable

Health utilizes one base/control station for dispatch purposes. This is normally done via secretarial staff.

7.9.8 Coverage/Capacity

The reported coverage of the 800MHz radio system includes:

☒ No coverage issues ☐ Known coverage issues ☐ Not applicable

Health reports there may be some coverage issues but was not able to provide specifics.

The reported capacity of the 800MHz radio system includes:

☒ No call waiting ☐ Some call waiting ☐ Not applicable

7.9.9 Voice Functionality (Encryption)

The reported voice functionality (encryption) needs include:

☒ Understand encryption
☐ Need encryption
☐ Not applicable
☐ Do not understand encryption
☒ Do not need encryption

7.9.10 Interoperability/Emergency Response

The reported interoperability requirements include:

☒ Need to interoperate ☐ Do not need to interoperate
☐ Not applicable

Health reports a need to interoperate with other agencies. Particularly during emergency and/or disaster situations. These include hazmat incidents and health related incidents that involve TPD, Fire and LCSO.

Health also works in the county EOC and is a participating member of the Incident Command Plan.

7.9.11 Mobile Data

The reported mobile data requirements include:

☐ Have mobile data ☒ Need mobile data
☐ Do not need mobile data ☐ Not applicable

Health reports a need for mobile data. Mobile data would satisfy GPS, GIS and mapping functions. Access to CDC web pages would also be of benefit.

7.9.12 Accessories/Inventory

The reported agency accessory/inventory includes:

☐ Spare batteries
☐ Rack Chargers
☐ Speaker/microphones
☐ Belt Clips
☐ Private Call
☐ Surveillance/Hidden Mics
☐ Other
☐ Desk Chargers
☐ Vehicular Chargers (for portables)
☐ Leather Carry Cases
☐ Mobile Radios
☐ Emergency Button
☒ Control/Base Stations
☐ Not applicable

7.9.13 Maintenance/Service

The reported maintenance/service use and awareness includes:

☒ Aware of and uses First Communications[52] maintenance service
☐ Not aware of First Communications maintenance service
☐ Do not use First Communications maintenance service
☐ Aware of and uses COT/RCD maintenance service
☐ Not aware of COT/RCD maintenance service
☐ Do not use COT/RCD maintenance service
☐ Not applicable

7.9.14 Other Discussion Items

Health reports a need to have access to portable radios. Relevant examples include communicating with Animal Control while in the field as well as communicating with law enforcement when children fall in septic tanks and risk drowning.

7.10 Leroy Collins Leon County Public Library System

7.10.1 URL - http://www.leoncountyfl.gov/LIBRARY/

7.10.2 Description

The LeRoy Collins Leon County Public Library System enriches the community by inspiring a love of reading, providing a dynamic resource for creative and intellectual pursuits and enabling residents to live a life of learning.

7.10.3 Personnel Interviewed

On October 20, 2006, TCS/Hayes representatives were scheduled to meet with Helen Moeller. Ms. Moeller did not show up for the interview.

[52] First Communications is the only Tallahassee based Motorola Authorized Service Center.

7.10.4 Methods of Communication

The reported methods of communication used by the agency include:

☐ Mobile Radios	☐ Portable Radios	☐ Cellular Telephones
☐ Pagers	☐ PDA's	☐ Laptops
☐ Other	☒ Not applicable	

7.10.5 Use/Understanding of Radio System

The reported use of the 800MHz radio system includes:

☐ Use regularly ☐ Use occasionally ☐ Use rarely or not at all
☐ Use other form of communication (e.g. cellular phone, portable walkie-talkie, etc.) in addition to the 800 MHz radio system
☒ Not applicable

The reported understanding of the 800MHz radio system includes:

☐ Understand benefits ☐ Do not understand benefits
☐ Know how to use system ☐ Do not know how to use system
☐ Know how to communicate with other agencies via the system
☐ Do not know how to communicate with other agencies via the system
☒ Not applicable

7.10.6 Use of Talk Groups[53]

The reported use of Talk-Groups includes:

☐ Understand Talk-Groups ☐ Do not understand Talk-Groups
☐ Aware of Talk-Group Templates ☐ Not Aware of Talk-Group Templates
☒ Not applicable

[53] See Leon County, Talk Group Templates

7.10.7 Use of Dispatcher(s) and/or Base/Control Station(s)

The reported use of a Dispatcher(s) and/or Base/Control Station(s) includes:

☐ Use Dedicated Dispatcher
☐ Use Administrative Staff (e.g. Receptionist, Office Staff, etc.) to dispatch
☐ Use Other Agency/Department as dispatch
☐ Use Base/Control Station to dispatch
☐ Use Portable to dispatch
☐ Use other methods (e.g. cellular telephone) to dispatch
☐ Do not use dispatch
☒ Not applicable

7.10.8 Coverage/Capacity

The reported coverage of the 800MHz radio system includes:

☐ No coverage issues ☐ Known coverage issues ☒ Not applicable

The reported capacity of the 800MHz radio system includes:

☐ No call waiting ☐ Some call waiting ☒ Not applicable

7.10.9 Voice Functionality (Encryption)

The reported voice functionality (encryption) needs include:

☐ Understand encryption ☐ Do not understand encryption
☐ Need encryption ☐ Do not need encryption
☒ Not applicable

7.10.10Interoperability/Emergency Response

The reported interoperability requirements include:

☐ Need to interoperate ☐ Do not need to interoperate
☒ Not applicable

7.10.11Mobile Data

The reported mobile data requirements include:

☐ Have mobile data	☐ Need mobile data
☐ Do not need mobile data	☒ Not applicable

7.10.12Accessories/Inventory

The reported agency accessory/inventory includes:

☐ Spare batteries	☐ Desk Chargers
☐ Rack Chargers	☐ Vehicular Chargers (for portables)
☐ Speaker/microphones	☐ Leather Carry Cases
☐ Belt Clips	☐ Mobile Radios
☐ Private Call	☐ Emergency Button
☐ Surveillance/Hidden Mics	☐ Control/Base Stations
☐ Other	☒ Not applicable

7.10.13Maintenance/Service

The reported maintenance/service use and awareness includes:

☐ Aware of and uses First Communications[54] maintenance service
☐ Not aware of First Communications maintenance service
☐ Do not use First Communications maintenance service
☐ Aware of and uses COT/RCD maintenance service
☐ Not aware of COT/RCD maintenance service
☐ Do not use COT/RCD maintenance service
☒ Not applicable

7.10.14Other Discussion Items

Not applicable.

[54] First Communications is the only Tallahassee based Motorola Authorized Service Center.

7.11 Management Services, Facilities Management and Construction

7.11.1 URL - http://www.leoncountyfl.gov/Facilities/index.asp

7.11.2 Description

Facilities Management serves the citizens of Leon County and occupants of County facilities; through the provision of professional construction, operation and maintenance services; in order to provide clean, safe and fully-functional County facilities.

Facilities Management is also responsible for providing physical maintenance, operations and construction management within a network of the County's 84 buildings (approximately over 1 million square feet) and over 90 acres of grounds. The Division consists of 38 employees, and is organized into a director and three functional programs.

Operational hours are primarily 8:00 AM – 5:00 PM with on-call after hours support.

7.11.3 Personnel Interviewed

On October 20, 2006, TCS/Hayes representatives met with Tom Brantley. Additionally, RCD representatives were present for the duration of the interview.

7.11.4 Methods of Communication

The reported methods of communication used by the agency include:

☐ Mobile Radios	☒ Portable Radios	☒ Cellular Telephones
☒ Pagers	☐ PDA's	☒ Laptops
☐ Other	☐ Not applicable	

Facilities reports having no mobile radios.

7.11.5 Use/Understanding of Radio System

The reported use of the 800MHz radio system includes:

☒Use regularly ☐Use occasionally ☐Use rarely or not at all
☐Use other form of communication (e.g. cellular phone, portable walkie-talkie, etc.) in addition to the 800 MHz radio system
☐Not applicable

The reported understanding of the 800MHz radio system includes:

☒Understand benefits ☐Do not understand benefits
☒Know how to use system ☐Do not know how to use system
☒Know how to communicate with other agencies via the system
☐Do not know how to communicate with other agencies via the system
☐Not applicable

7.11.6 Use of Talk Groups[55]

The reported use of Talk-Groups includes:

☒Understand Talk-Groups ☐Do not understand Talk-Groups
☒Aware of Talk-Group Templates ☐Not Aware of Talk-Group Templates
☐Not applicable

7.11.7 Use of Dispatcher(s) and/or Base/Control Station(s)

The reported use of a Dispatcher(s) and/or Base/Control Station(s) includes:

☐Use Dedicated Dispatcher
☒Use Administrative Staff (e.g. Receptionist, Office Staff, etc.) to dispatch
☐Use Other Agency/Department as dispatch
☐Use Base/Control Station to dispatch
☒Use Portable to dispatch
☐Use other methods (e.g. cellular telephone) to dispatch
☐Do not use dispatch
☐Not applicable

[55] See Leon County, Talk Group Templates

7.11.8 Coverage/Capacity

The reported coverage of the 800MHz radio system includes:

☐No coverage issues ☒Known coverage issues ☐Not applicable

Facilities reports known coverage issues within some buildings, including the Main Library.

The reported capacity of the 800MHz radio system includes:

☐No call waiting ☐Some call waiting ☐Not applicable

7.11.9 Voice Functionality (Encryption)

The reported voice functionality (encryption) needs include:

☒Understand encryption
☐Need encryption
☐Not applicable
☐Do not understand encryption
☒Do not need encryption

7.11.10Interoperability/Emergency Response

The reported interoperability requirements include:

☒Need to interoperate
☐Not applicable
☐Do not need to interoperate

Facilities provides assistance during evacuations, works with Bailiff's unit and is involved in some garage related incidents.

Facilities also expressed a need to communicate with Fire.

7.11.11Mobile Data

The reported mobile data requirements include:

☐Have mobile data
☐Do not need mobile data
☒Need mobile data
☐Not applicable

Facilities has needs for remote alarm and monitoring technology such as SCADA. An additional needs exists for AVL and digital camera technology (i.e. capture/transmit graphic files related to structures during emergency/disaster situations.

Facilities discussed the future of Electronic Document Management System (EDMS) and GIS for building as well as CAFM or Computer Aided Facilities Management.

7.11.12Accessories/Inventory

The reported agency accessory/inventory includes:

☒ Spare batteries	☐ Desk Chargers
☐ Rack Chargers	☐ Vehicular Chargers (for portables)
☐ Speaker/microphones	☐ Leather Carry Cases
☐ Belt Clips	☒ Mobile Radios
☐ Private Call	☐ Emergency Button
☐ Surveillance/Hidden Mics	☐ Control/Base Stations
☐ Other	☐ Not applicable

Facilities reports a need for spare batteries. Apparently, the batteries being purchased do not match performance specifications. This may be an educational issue in terms of better understanding which batteries to order, how to keep them properly charged, when to perform preventative maintenance on them, etc.

7.11.13Maintenance/Service

The reported maintenance/service use and awareness includes:

☐ Aware of and uses First Communications[56] maintenance service
☐ Not aware of First Communications maintenance service
☒ Do not use First Communications maintenance service
☐ Aware of and uses COT/RCD maintenance service
☐ Not aware of COT/RCD maintenance service
☒ Do not use COT/RCD maintenance service
☐ Not applicable

[56] First Communications is the only Tallahassee based Motorola Authorized Service Center.

7.11.14Other Discussion Items

Facilities reports environmental concerns with regards to portable radios. Work areas include concrete, heavy materials, etc. and dropping radios in this environment causes unnecessary damage.

7.12 Public Works, Engineering Services

7.12.1 URL - http://www.leoncountyfl.gov/pubworks/engineering/

7.12.2 Description

Engineering Services is responsible for providing professional support for Capital Improvement Projects and other programs, including assistance to the public on an as need basis. Professional support includes surveying, right-of-way acquisition, design, regulatory permit acquisition, document preparation, contract administration, and construction inspection. Other support services include water/sewer franchising, review and approval of publicly dedicated subdivisions, issuance of right-of-way placement permits and driveway permits, and inspection/administration of the 2/3-2/3 Program. The Division is also responsible for providing professional support for the S.A.F.E. Program paving the County maintained unpaved roads.

7.12.3 Personnel Interviewed

On October 19, 2006, TCS/Hayes representatives met with Joe Brown. Additionally, RCD representatives were present for the duration of the interview.

7.12.4 Methods of Communication

The reported methods of communication used by the agency include:

☐ Mobile Radios	☐ Portable Radios	☒ Cellular Telephones
☐ Pagers	☐ PDA's	☐ Laptops
☒ Other	☐ Not applicable	

Engineering primarily uses cellular telephones and consumer portables to communicate amongst and between crews and personnel.

7.12.5 Use/Understanding of Radio System

The reported use of the 800MHz radio system includes:

☐Use regularly ☐Use occasionally ☒Use rarely or not at all
☒Use other form of communication (e.g. cellular phone, portable walkie-talkie, etc.) in addition to the 800 MHz radio system
☐Not applicable

See Section 7.12.4.

The reported understanding of the 800MHz radio system includes:

☒Understand benefits ☐Do not understand benefits
☐Know how to use system ☐Do not know how to use system
☐Know how to communicate with other agencies via the system
☐Do not know how to communicate with other agencies via the system
☐Not applicable

See Section 7.12.4.

7.12.6 Use of Talk Groups[57]

The reported use of Talk-Groups includes:

☒Understand Talk-Groups ☐Do not understand Talk-Groups
☒Aware of Talk-Group Templates ☐Not Aware of Talk-Group Templates
☐Not applicable

See Section 7.12.4.

7.12.7 Use of Dispatcher(s) and/or Base/Control Station(s)

The reported use of a Dispatcher(s) and/or Base/Control Station(s) includes:

☐Use Dedicated Dispatcher
☐Use Administrative Staff (e.g. Receptionist, Office Staff, etc.) to dispatch
☐Use Other Agency/Department as dispatch

[57] See Leon County, Talk Group Templates

☐ Use Base/Control Station to dispatch
☐ Use Portable to dispatch
☐ Use other methods (e.g. cellular telephone) to dispatch
☒ Do not use dispatch
☐ Not applicable

7.12.8 Coverage/Capacity

The reported coverage of the 800MHz radio system includes:

☐ No coverage issues ☐ Known coverage issues ☒ Not applicable

The reported capacity of the 800MHz radio system includes:

☐ No call waiting ☐ Some call waiting ☒ Not applicable

7.12.9 Voice Functionality (Encryption)

The reported voice functionality (encryption) needs include:

☐ Understand encryption
☐ Need encryption
☐ Not applicable
☐ Do not understand encryption
☒ Do not need encryption

See Section 7.12.4.

7.12.10Interoperability/Emergency Response

The reported interoperability requirements include:

☒ Need to interoperate
☐ Not applicable
☐ Do not need to interoperate

Engineering may need to interoperate with other agencies during emergencies and/or disasters, but only in the aftermath and in a non-critical manner.

7.12.11Mobile Data

The reported mobile data requirements include:

☐ Have mobile data	☐ Need mobile data
☒ Do not need mobile data	☐ Not applicable

Should Engineering be given the benefit of mobile data, then it could use it for survey needs, construction management and GPS.

7.12.12Accessories/Inventory

The reported agency accessory/inventory includes:

☐ Spare batteries	☐ Desk Chargers
☐ Rack Chargers	☐ Vehicular Chargers (for portables)
☐ Speaker/microphones	☐ Leather Carry Cases
☐ Belt Clips	☐ Mobile Radios
☐ Private Call	☐ Emergency Button
☐ Surveillance/Hidden Mics	☐ Control/Base Stations
☐ Other	☒ Not applicable

7.12.13Maintenance/Service

The reported maintenance/service use and awareness includes:

☐ Aware of and uses First Communications[58] maintenance service
☐ Not aware of First Communications maintenance service
☐ Do not use First Communications maintenance service
☐ Aware of and uses COT/RCD maintenance service
☐ Not aware of COT/RCD maintenance service
☐ Do not use COT/RCD maintenance service
☒ Not applicable

7.12.14Other Discussion Items

See Section 7.2.4.

[58] First Communications is the only Tallahassee based Motorola Authorized Service Center.

8.0 SUMMARY

In late October of 2006, representatives for Tusa/Hayes complete a survey of non-public safety agencies operable on the City of Tallahassee/Leon County 800MHz shared radio network.

The purpose of the interviews was to gain a clear and documented understanding of the depth of use by non-public safety agencies, depth of understanding related to the current 800MHz radio system, as well as future enhancements potentially available from a next-generation 800MHz radio system.

Several key issues were consistently voiced throughout the interviews, including:

- **Methods of Communication**
  Several agencies use portable and/or mobile radios to communicate. Several others use cellular telephones to conduct normal business, sometimes in lieu of using the 800MHz radio system. Sometimes to complement the 800MHz radio system. A small majority of agencies are equipped with laptops or other means of data communication. Likewise, a small majority uses other means of communication such as consumer grade portable radios or loaned equipment. This range of communication methods varies in some part due to the business nature of the agency, in some part to lack of knowledge regarding communication options and in some cases due to lack of funding to purchase and/or maintain the necessary equipment to communicate on the 800MHz radio system.

- **Use of 800MHz Radio System vs. Other Methods of Communication**
  While some agencies depend solely on the 800MHz radio system for communications, others do not use it regularly or not at all. Reasons vary from portables too bulky, do not know how to use portables, do not have the right persons to dispatch, do not understand the overall use of talk-groups including Mutual Aid, cannot hear mobile radio speakers when away from vehicles, need to talk to consumers or contractors not on or have no access to the 800MHz radio system. This variance can likely be reduced in favor of the 800MHz radio system provided proper training, documentation, follow-up and consistent accountability is installed. Without this intervention, there will be agencies that do not realize the full benefit of the 800MHz radio system, whether it is through full or intermittent use.

- **Knowledge/Utilization of Talk-Groups**
  While most agencies are aware and use talk-groups, most if not all are not aware of the range of talk-groups available for their use. Nor are they aware of how to use them. This lack of awareness may reduce the effectiveness of agency operations in terms of interoperability and responsiveness to other agencies.

- **Dispatching**
  All agencies are aware of dispatching and its intended purpose. Most agencies do not have dedicated dispatch resources in terms of personnel or equipment. Some do. These few are conversant in all aspects of radio communications. The others realize limited benefit. If properly trained and/or equipped (i.e. base/control stations instead of portable radios, cellular telephones and/or pagers), these others can become more effective in their normal business operations and thus provide improved service delivery to their customer base. This can be accomplished through improved internal coordination, work process flow and interoperability with other agencies.

- **Encryption**
  While most agencies have heard of encryption, a majority of these do not understand the benefits associated with encryption nor how it applies to their normal business operations. An educational outreach would serve to benefit the entire non-public safety community.

- **Interoperability/Emergency Response**
  Whether or not it is realized, all non-public safety agencies will interoperate with necessary agencies and/or respond to emergency or disaster situations as required. This interoperability ranges from sister agencies, to non-jurisdictional agencies, to law enforcement agencies and so on. This response includes first response to aftermath response. From leading the way via debris clearing, to lowering power lines, to transporting evacuees, to providing staging areas for other states, to working with Federal agencies and so on. It is important to insure all agencies understand their roles and how to operate within those roles when it becomes necessary. Regular exercises can help insure interoperability and emergency response become seamless when needed most.

- **Maintenance**
  All agencies recognize the need for regular and preventative maintenance. Not all agencies know this is available. Should this lack of knowledge be overcome, the benefit would be measurable in terms of improved equipment performance, less cost in the long run, etc.

- **Mobile Data**
  Agencies realize the benefit of mobile data. Benefits that range from work process improvement, to automated functionality (GIS/GPS/AVL/SCADA), to enterprise database access, to connectivity to Federal repositories (e.g. CDC web page for Health, etc.). Agencies want the benefits of mobile data but are concerned about funding.

This information will be used to insure that non-public safety agencies are given due consideration in the planning, implementation, operation, maintenance and enhancements as a result of any next-generation 800 MHz radio system.

Tallahassee Police Department

2/6/2004	TPD	Combined Template		Primary				
Position	**Zone A**	**Description**	**Position**	**Zone B**	**Description**	**Position**	**Zone C**	**Description**
1	TPDDA	Dispatch Alpha	1	TPDDB	Dispatch Bravo	1	TPDDC	Dispatch Charlie
2	TELTYP	Teletype	2	TELTYP	Teletype	2	TELTYP	Teletype
3	ADM3A	Admin A	3	ADM3B	Admin B	3	ADM3C	Admin C
4	TLK4A	Talk A	4	TLK4B	Talk B	4	TLK4C	Talk C
5	COPA	COP A	5	COPB	COP B	5	COPC	COP C
6	CIDA	CID A	6	CIDB	CID B	6	AIRPD	Airport PD
7	VCA	Vice A	7	VCB	Vice B	7	TRAFIC	Changed from VCC
8	LCSO1	LCSO Dispatch 1	8	LCSO3	LCSO Dispatch 3	8	WRNTS	LCSO Warrants
9	EMS2	LCEMS2	9	EMS3	LCEMS3	9	VICE1	LCSO Vice 1
10	SPV10A	SpEv 10A	10	SPV10B	SpEv 10B	10	SPV10C	SpEv 10C
11	SPV11A	SpEv 11A	11	SPV11B	SpEv 11B	11	SPV11C	SpEv 11C
12	FSUPD	FSU PD	12	TFD1	Fire Disp1	12	FAMUPD	FAMU PD
13	CAPPD	Capitol Police	13	FHP1	FHP Dispatch 1	13	BLFCT	LCSO Balif-Court
14	FDLEM	FDLE Mansion	14	TLTN1	Taltran Disp 1	14	TLTN2	Taltran Disp 2
15	TAC15A	TAC 15A	15	TAC15B	TAC 15B	15	TAC15C	TAC 15C
16	TACCOM	TAC COM	16	TACCOM	TAC COM	16	TACCOM	TAC COM

Position	**Zone D**	**Description**	**Position**	**Zone E**	**Description**
1	CITYE	City E	1	MACALL	Mutual Aid Calling
2	FLEET	Fleet	2	MATAC1	Mutual Aid Tac 1
3	SAFETY	Safety	3	MATAC2	Mutual Aid Tac 2
4	LGCALL	Local Govt CALL	4	MATAC3	Mutual Aid Tac 3
5	LGTAC1	LG TAC1	5	MATAC4	Mutual Aid Tac 4
6	LGTAC2	LG TAC2	6	MAFLA	Mutual Aid Florida
7	LGTAC3	LG TAC3	7	COTEM	TLH Em Mgt.
8	PSCALL	Public Safety CALL	8	LCSOEM	LCSO Emer Mngt
9	PSTAC1	PS TAC1	9	VCCOM	Vice Common
10	PSTAC2	PS TAC2	10	LIFNET	Life NET
11	PSTAC3	PS TAC3	11	FDLED	FDLE Dispatch
12	LECALL	Law Enfc CALL	12	LESRES	eon School Resource
13	LETAC1	LE TAC1	13	LSOVHF	LCSO VHF 155.
14	LETAC2	LE TAC2	14	LSOUHF	LCSO UHF 455.
15	LETAC3	LE TAC3	15	TPDUHF	HF City Cross Patch
16	DYNGRP	DYNGRP	16	FLAE	Florida E

DRAFT

AIRPORT POLICE

Position	ZONE A	Full Description	Position	ZONE B	Full Description	Position	ZONE C	Full Description
1	TPDDA	Dispatch Alpha	1	TPDDB	Dispatch Bravo	1	TPDDC	Dispatch Charlie
2	TELTYP	Teletype	2	TELTYP	Teletype	2	TELTYP	Teletype
3	ADM3A	Admin A	3	ADM3B	Talk B	3	ADM3C	Admin C
4	TALK4A	Talk A	4	TALK4B	COP B	4	TLK4C	Talk C
5	AIRTAC	Air Tac	5	AIRPRT	Airport Repeater	5	COPC	Cop C
6	AIROPS	Air Operations	6	AIR	Cot Airport	6	AIRPD	Airport PD
7	LCSOHE	LCSO HELICOPTOR	7	AIRMAT	COT Airport Maintenance	7	VCC	TPD TRAFFIC
8	EMS2	LCEMS2	8	EMS3	LCEMS3	8	VICE1	LCSO Vice 1
9	LCSO1	LCSO Dispatch 1	9	LCSO3	LCSO Dispatch 3	9	TFD2	Fire Disp2
10	SPEV10A	Special Events 10A	10	SPV10B	Special Events 10B	10	SPV10C	Special Events 10C
11	SPEV11A	Special Events 11A	11	SPV11B	Special Events 11B	11	SPV11C	Special Events 11C
12	FSUPD	FSU PD	12	TFD1	Fire Disp1	12	FAMUPD	FAMU PD
13	CAPPD	Capitol Police	13	FHP1	FHP Dispatch 1	13	BLFCT	LCSO Balif-Court
14	FDLEM	FDLE Mansion	14	TLTN1	Taltran Disp 1	14	TLTN2	Taltran Disp 2
15	TAC15A	TAC 15A	15	TAC15B	TAC 15B	15	TAC15C	TAC 15C
16	TACCOM	TAC COM	16	TACCOM	TAC COM	16	TACCOM	TAC COM
Position	**ZONE D**	**Full Description**	**Position**	**ZONE E**	**Full Description**			
1	CITYE	City E	1	MACALL	Mutual Air Calling			
2	FLEET	Fleet Disp	2	MATAC1	Mutual Air Tac 1			
3	SAFETY	Safety	3	MATAC2	Mutual Air Tac 2			
4	LGCALL	Local Govt Calling	4	MATAC3	Mutual Air Tac 3			
5	LGTAC1	LG Tac 1	5	MATAC4	Mutual Air Tac 4			
6	LGTAC2	LG Tac 2	6	MAFL	Mutual Air Florida			
7	LGTAC3	LG Tac 3	7	COTEM	TFD COT Emer Mngt			
8	PSCALL	Public Safwty Calling	8	LCSOEM	LCSO Emergency			
9	PSTAC1	PS Tac 1	9	VCCOM	TPD-LCSO Vice Com			
10	PSTAC2	PS Tac 2	10	LIFFL	Helicopter			
11	PSTAC3	PS Tac 3	11	FDLED	FDLE Dispatch			
12	LECALL	LE Calling	12	LESRES	Leon School Resource			
13	LETAC1	LE Tac 1	13	LSOVHF	LCSO VHF 155.			
14	LETAC2	LE Tac 2	14	LSOUHF	LCSO UHF455.			
15	LETAC3	LE Tac 3	15	TPDUHF	TPDUHF			
16	DYNGRP	DynGrp	16	FLAE	Florida E			

TFD Template

Revised	9/21/2006	T F D
Position	**ZONE A**	Full Description
1	TFD1	TFD Dispatch 1
2	TFD2	TFD Dispatch 2
3	FDTAC1	FD TAC1
4	FDTAC2	FD TAC2
5	FDTAC3	FD TAC3
6	FDTAC4	FD TAC4
7	FDTAC5	FD TAC5
8	LCEMS8	LCEMS Ambulance
9	LCEMS2	LCEMS Dispatch 2
10	SPV10A	TPD Special Event 10 A
11	SPV11A	TPD Special Event 11 A
12	EMSTC1	moved from 14
13	EMSTC2	moved from 15
14	LIFNET	Helicopter
15	CRMCER	CRMC ER
16	TMHER	TMH ER

Public	Safety	
Position	**ZONE B**	Full Description
1	TFD1	TFD Dispatch 1
2	TFD2	TFD Dispatch 2
3	AIRADM	Air Administrative
4	AIROPS	Aiir Operations
5	AIRTAC	Air TAC
6	AIRMAT	Air Maintenance
7	AIRPD	Air PD
8	AIRPRT	Airport Repeater (coventional)
9	FDADMB	TFD Administrative 9 B
10	SPV10B	TPD Special Event 10 B
11	SPV11B	TPD Special Event 11 B
12	SPVCMB	TFD Special Event Com B
13	FDTR1	TFD Training 1
14	TPDDA	TPD Dispatch A
15	TPDDB	TPD Dispatch B
16	TPDDC	TPD Dispatch C

Template	FIRE
Position	**ZONE C**	Full Description
1	TFD1	TFD Dispatch 1
2	TFD2	TFD Dispatch 2
3	TALKA	TPD Talk A
4	TALKB	TPD Talk B
5	FSUPD	FSU PD
6	FAMUPD	FAMU PD
7	CAPPD	CAP Police
8	FHP1	FHP Dispatch 1
9	COTEM	TFD COT Emer Mngt
10	SPV10C	TPD Special Event 10 C
11	SPV11C	TPD Special Event 11 C
12	SPVCMC	TFD Special Event Com C
13	FDTR2	TFD Training 2
14	LCSO1	LCSO Dispatch 1
15	LCSO3	LCSO Dispatch 3
16	LCSOEM	LCSO Emergency Mngt

	Primary	
Position	**ZONE D**	Full Description
1	CITYE	COT City Emergency
2	FLEET	COT City Fleet
3	SFTY	COT City Safety
4	LGCALL	COT Locl Govt Calling
5	LGTAC1	COT Local Govt TAC 1
6	LGTAC2	COT Local Govt TAC 2
7	LGTAC3	COT Local Govt TAC 3
8	PSCALL	COT Public Safety Calling
9	PSTAC1	COT Public Safety TAC 1
10	PSTAC2	COT Public Safety TAC 2
11	PSTAC3	COT Public Safety TAC 3
12	LECALL	COT Law Enfc. Calling
13	LETAC1	COT Law Enfc TAC 1
14	LETAC2	COT Law Enfc TAC 2
15	LETAC3	COT Law Enfc TAC 3
16	DYNGRP	Dynamic Regroup

Position	**ZONE E**	Full Description
1	MACALL	Mutual Aid calling
2	MATAC1	Mutual Aid TAC 1
3	MATAC2	Mutual Aid TAC 2
4	MATAC3	Mutual Aid TAC 3
5	MATAC4	Mutual Aid TAC 4
6	MAFLA	Mutual Aid Florida
7		
8		
9		
10		
11		
12		
13		
14		
15		
16		

LCSO

	LCSO	Administrative template				
Position	Zone A	Full Description	Zone B	Full Description	Zone C	Full Description
1	LCSO1	LCSO Dispatch 1	CMSV	Community Service Division	CORMNT	Corrections Maintenance
2	LCSOTY	LCSO Teletype	WRNTS	LCSO Warrants	BLFCT	LCSO Bailiff- Court
3	LCSO3	LCSO Dispatch 3	PRERES	Prevention & Resource Officers	LCOR1	LCSO Corrections 1
4	C I 1	LCSO Criminal Investigations 1	VICE1	LCSO Vice 1	CORBC	LCSO Corrections Boot Camp 1
5	C I 2	LCSO Criminal Investigations 2	VICE2	LCSO Vice 2	FHP1	FHP Dispatch 1
6	SPOP1	LCSO Special Operations 1	SPOP2	LCSO Special Operations 2	TFD1	TFD Dispatch 1
7	TPDDA	TPD Dispatch A	TPDDB	TPD Dispatch B	TPDDC	TPD Dispatch C
8	TPDCIA	TPD CID A	FSUPD1	FSU PD Dispatch 1	CAPPD	Capital PD
9	LCSOEM	LCSO Emergency Management	FSUOPS	FSU Operations	FAMUPD	FAMU PD
10	SPV10A	Special Events 10 A	SPV10B	Special Events 10 B	SPV10C	Special Events 10 C
11	SPV11A	Special Events 11 A	SPV11B	Special Events 11 B	SPV11C	Special Events 11 C
12	UHF	UHF Cross Patch	**ADMN**	**Administrative**	AIRPRT	Airport Repeater
13	TPDVCA	TPD Vice A	COTEM	City of Tall Emergency Management	LCOR2	LCSO Corrections 2
14	DYNGRP	Dynamic Regroup	AIRPD	Airport PD	VCCOM	Vice Common
15	LSOTCA	LCSO TAC A	LSOTCB	LCSO TAC B	LSOTCC	LCSO TAC C
16	LSOSWT	LCSO SWAT	LSOSWT	LCSO SWAT	LSOSWT	LCSO SWAT
Position	Zone D	Full Description	Zone E	Full Description		
1	MACALL	Mutual Aid Calling	LGCALL	Local Govt. Call		
2	MATC1	Mutual Aid TAC 1	LGTAC1	Local Govt Tac 1		
3	MATC2	Mutual Aid TAC 2	LGTAC2	Local Govt Tac 2		
4	MATC3	Mutual Aid TAC 3	LGTAC3	Local Govt Tac 3		
5	MATC4	Mutual Aid TAC 4	PSCALL	Public Safety Call		
6	MA FL	Mutual Aid Florida	PSTAC1	Public Safety Tac 1		
7	LEOANC	Leon Announcement Group	PSTAC2	Public Safety Tac 2		
8	LEOADM	Leon Administration	PSTAC3	Public Safety Tac 3		
9	LANCRT	Leon Animal Control	LECALL	Law Enfc. call		
10	LEOUTY	Leon Utility	LETAC1	Law Enfc. Tac 1		
11	LEOMNT	Leon Maintenance	LETAC2	Law Enfc. Tac 2		
12	LEORDS	Leon Roads	LETAC3	Law Enfc. Tac 3		
13	LEPWKS	Leon Public Works	LSOVHF	LCSO VHF 155.		
14	LESRES	Leon School Resource	LSOUHF	LCSO UHF 455.		
15	LIFFL	Life Flight	FLAE	Fla. E		
16	TLTN1	Taltran Disp 1				

AIR MAINTENANCE TEMPLATE

9/21/2006 Airport Maintenance

Position	ZONE A	Full Description	Position	ZONE A	Full Description	Position	ZONE A	Full Description
1	AIR	Airport	1	CITYE	City E	1	MACALL	Mutual Aid Calling
2	AIRMAT	Air Maintenance	2	FLEET	Fleet	2	MATAC1	Mutual Aid Tac1
3	AIROPS	Air Operations	3	SAFETY	Safety	3	MATAC2	Mutual Aid Tac 2
4	AIRTAC	Air Tac	4	LGCALL	Local Govt Calling	4	MATAC3	Mutual Aid Tac 3
5	AIRPRT	Airport Repeater	5	LGTAC1	Local Govt Tac 1	5	MATAC4	Mutual Aid Tac 4
6	AIRPD	Airport PD	6	LGTAC2	Local Govt Tac 2	6	MLFL	Mutual Aid Florida
7			7	LGTAC3	Local Govt Tac 3			
8			8	PSCALL	Public Safety Calling			
9			9	PSTAC1	Public Safety Tac 1			
10			10	PSTAC2	Public Safety Tac 2			
11			11	PSTAC3	Public Safety Tac 3			
12			12	DYNGRP	Dynamic Regroup			
13			13					
14			14					
15			15					
16			16					

DRAFT

AIR MAINTENANCE SUPERVISOR

9/21/2006 Airport Maintenance Supervisor

Position	ZONE A	Full Description	Position	ZONE B	Full Description	Position	ZONE C	Full Description
1	AIR	Airport	1	CITYE	City E	1	MACALL	Mutual Aid Calling
2	AIRMAT	Air Maintenance	2	FLEET	Fleet	2	MATAC1	Mutual Aid Tac1
3	AIROPS	Air Operations	3	SAFETY	Safety	3	MATAC2	Mutual Aid Tac 2
4	AIRTAC	Air Tac	4	LGCALL	Local Govt Calling	4	MATAC3	Mutual Aid Tac 3
5	AIRPRT	Airport Repeater	5	LGTAC1	Local Govt Tac 1	5	MATAC4	Mutual Aid Tac 4
6	AIRPD	Airport PD	6	LGTAC2	Local Govt Tac 2	6	MLFL	Mutual Aid Florida
7	TFD1	TFD Dispatch 1	7	LGTAC3	Local Govt Tac 3			
8	TFD2	TFD Dispatch 2	8	PSCALL	Public Safety Calling			
9	FDTAC4	FD TAC4	9	PSTAC1	Public Safety Tac 1			
10	FDTAC5	FD TAC5	10	PSTAC2	Public Safety Tac 2			
11	COTEM	TFD COT Emer Mngt	11	PSTAC3	Public Safety Tac 3			
12	LCSO1	LCSO Dispatch 1	12	DYNGRP	Dynamic Regroup			
13	LCSO3	LCSO Dispatch 3	13					
14	LIFL	Helicopter	14					
15			15					
16			16					

Total	Alias	TG Name	TGID	CCP	CCM
1	MATAC2	Mutual Aid Tac 2		2	5
2	MATAC3	Mutual Aid Tac 3		2	6
3	AIRPRT	Conventional		3	2
4	FireVHF1	Conventional		3	4
5	AIRPD	TPD Airport PD	800041	4	6
6	AIR	Cot Airport	800181	4	7
7	AIRANC	COT Airport Anc Grp	800185	4	8
8	AIRMAT	COT Airport Maint	800183	5	1
9	AIROPS	COT Airport Operations	800233	5	2
10	AIRTAC	TPD Airport PD	800231	5	3
11	CITY E	COT City Emergency	800119	5	6
12	TFD1	TFD Dispatch 1	800075	6	4
13	TFD2	TFD Dispatch 2	800077	6	5
14	COTEM	TFD COT Emer Mngt	800099	7	1
15	Fleet	COT Fleet Dispatch	800165	7	6
16	LG Call	Local Govt Calling	800215	8	8
17	LG Tac1	Local Govt TAC 1	800217	9	1
18	LG Tac2	Local Govt TAC 2	800219	9	2
19	LG Tac3	Local Govt TAC 3	800225	9	3
20	PrivCall			9	5
21	PS Call	Public Safety Calling	800209	9	6
22	PS Tac1	Public Safety Tac 1	800211	9	7
23	PS Tac2	Public Safety Tac 2	800213	9	8
24	PS Tac3	Public Safety Tac 3	800223	10	1
25	Safety	COT City Safety	800129	10	2
26	FDTAC4	Fire Dept TAC 4	800085	11	3
27	FDTAC5	Fire Dept TAC 5	800087	11	8

4/14/2000	LEON	County		Animal Control	7 MTS	
Position #	Zone A	Full Description	Zone B	Full Description	Zone C	Full Description
1	LANCT1	Leon Animal Control Group 1	LEMNTD	Leon Facilities Management Disp	MACALL	Mutual Aid Calling
2	LANCT2	Leon Animal Control Group 2	LESWD	Leon Solid Waste Disp	MATAC1	Mutual Aid TAC 1
3	ANML1	COT Animal Shelter Disp.	LEOWKS	Leon Public Works Disp	MATAC2	Mutual Aid TAC 2
4			LEMOSC	Leon Mosquito Control Disp	MATAC3	Mutual Aid Tac 3
5			LEFLT	Leon Fleet Disp	MATAC4	Mutual Aid Tac 4
6			LEOLIB	Leon Library Disp	MAFLA	Mutual Aid Florida
7			LEWKEN	Leon Public Works Engineering Disp	LGCALL	Local Govt. Call
8			LEPKD	Leon Parks Disp	LGTAC1	Local Govt. Tac 1
9			LANCRT	Leon Animal Control Disp	LGTAC2	Local Govt. Tac 2
10			LEMIS	Leon MIS Disp	LGTAC3	Local Govt. Tac 3
11			LCSO1	LCSO Dispatch 1	PSCALL	Public Safety Call
12			LCOR1	LCSO Jail	PSTAC1	Public Safety Tac 1
13			CITYE	TPD Disp [CITY E]	PSTAC2	Public Safety Tac 2
14			LCSOEM	LCSO Emergency Management	PSTAC3	Public Safety Tac 3
15			COTEM	City of Tall Emergency Management	DYNGRP	Dynamic Regroup
16						

Electric Template

9/26/2006

Position	Zone A	Full Description	Position	Zone B	Full Description		Position	Zone C	Full Description
1	ELEADM	Elec Admin	1	1	CITYE	City E[Police Disp]	1	MACALL	Mutual Aid Calling
2	ELOPS1	Elec Operations Disp	2	2	SAFT	Safety	2	MATAC1	Mutual Aid Tac 1
3	ELTRB 1	Elec Trouble Disp	3	3	FLTD	Fleet Disp	3	MATAC2	Mutual Aid Tac 2
4	PRENG1	Power Engineering 1	4	4	LGCALL	Local Govt Calling	4	MATAC3	Mutual Aid Tac 3
5	PRENG2	Power Engineering 2	5	5	LGTAC1	Local Govt Tac !	5	MATAC4	Mutual Aid Tac 4
6	ELCON1	Elec Control 1	6	6	LGTAC2	Local Govt Tac 2	6	MAFL	Mutual Aid FLA
7	ELCON2	Elec Control 2	7	7	LGTAC3	Local Govt Tac 3	7	CRN1	C. H. Corn Hydro Plant
8	ELCON3	Elec Control 3	8	8	PSCALL	Public Safety Calling	8	PUR1	Purdom Plant 1
9	ELT&D1	Elec Trans & Distribution 1	9	9	PSTAC1L	Public Safety Tac 1	9	PUR2	Purdom Plant 2
10	ELT&D2	Elec Trans & Distribution 2	10	10	PSTAC2	Public Safety Tac 2	10	HOP1	Hopkins Plant 1
11	ELT&D3	Elec Trans & Distribution 3	11	11	PSTAC3	Public Safety Tac 3	11	HOP2	Hopkins Plant 2
12	ELTREE	Elec Tree Trimming	12	12	DYNGRP	Dynamic Regroup	12	ELTRB2	Elec Trouble 2
13	ELSUB1	Elec Sub Station	13	13	CRN1	C. H. Corn Hydro Plan	13	TRAFF1	Traffic Disp
14	ELRLY	Elec Relay & Comm	14	14	PUR1	Prdom Plant 1	14	STRT1	Street Disp
15	ELMTR1	Elec Meter 1	15	15	PUR2	Prdom Plant 2	15	DRANG1	Drainage Disp
16	ELMTR2	Elec Meter 2	16	16	HOP1	Hopkins Plant 1	16		

	LEON	County			Facilities Management Emp.			
Position	Zone A	Full Description	Position	Zone B	Full Description	Position	Zone C	Full Description
1	LEMNT1	Maintenance-Group 1	1	LEMNTD	Leon Facilities Management Disp	1	MACALL	Mutual Aid Calling
2	LEMNT2	Maintenance-Group 2	2	LESWD	Leon Solid Waste Disp	2	MATAC1	Mutual Aid TAC 1
3	LECON1	Construction-Group 1	3	LEOWKS	Leon Public Works Disp	3	MATAC2	Mutual Aid TAC 2
4	LECON2	Construction-Group 2	4	LEMOSC	Leon Mosquito Control Disp	4	MATAC3	Mutual Aid Tac 3
5	PRKOP	Parking Operations	5	LEFLT	Leon Fleet Disp	5	MATAC4	Mutual Aid Tac 4
6	BLFCT	LCSO Bailiff's Security	6	LEOLIB	Leon Library Disp	6	MAFLA	Mutual Aid Florida
7	INSUP	Inmate Supervisors	7	LEWKEN	Leon Public Works Engineering Disp	7	LGCALL	Local Govt. Call
8	SPS1	Special Situations 1	8	LEPKD	Leon Parks Disp	8	LGTAC1	Local Govt. Tac 1
9	LEMIS1	Leon MIS Group	9	LANCRT	Leon Animal Control Disp	9	LGTAC2	Local Govt. Tac 2
10			10	LEMIS	Leon MIS Disp	10	LGTAC3	Local Govt. Tac 3
11			11	LCSO1	LCSO Dispatch 1	11	PSCALL	Public Safety Call
12			12	LCOR1	LCSO Jail	12	PSTAC1	Public Safety Tac 1
13			13	CITYE	TPD Disp [CITY E]	13	PSTAC2	Public Safety Tac 2
14			14	LCSOEM	LCSO Emergency Management	14	PSTAC3	Public Safety Tac 3
15			15	COTEM	City of Tall Emergency Management	15	DYNGRP	Dynamic Regroup
16			16			16		

LeonMosqCntrlSupMTS4-14-00

4/14/2000	LEON	County	MTS	Mosquito Control Supv.		
Position #	Zone A	Full Description	Zone B	Full Description	Zone C	Full Description
1	LEMOG	Leon Mosquito Control General	LEMNTD	Leon Facilities Management Disp	MACALL	Mutual Aid Calling
2	LSOA3	LCSO Aviation Bureau 3	LESWD	Leon Solid Waste Disp	MATAC1	Mutual Aid TAC 1
3	LEMOSP	Leon Mosquito Control Supervisor	LEOWKS	Leon Public Works Disp	MATAC2	Mutual Aid TAC 2
4			LEMOSC	Leon Mosquito Control Disp	MATAC3	Mutual Aid Tac 3
5			LEFLT	Leon Fleet Disp	MATAC4	Mutual Aid Tac 4
6			LEOLIB	Leon Library Disp	MAFLA	Mutual Aid Florida
7			LEWKEN	Leon Public Works Engineering Disp	LGCALL	Local Govt. Call
8			LEPKD	Leon Parks Disp	LGTAC1	Local Govt. Tac 1
9			LANCRT	Leon Animal Control Disp	LGTAC2	Local Govt. Tac 2
10			LEMIS	Leon MIS Disp	LGTAC3	Local Govt. Tac 3
11			LCSO1	LCSO Dispatch 1	PSCALL	Public Safety Call
12			LCOR1	LCSO Jail	PSTAC1	Public Safety Tac 1
13			CITYE	TPD Disp [CITY E]	PSTAC2	Public Safety Tac 2
14			LCSOEM	LCSO Emergency Management	PSTAC3	Public Safety Tac 3
15			COTEM	City of Tall Emergency Managemen	DYNGRP	Dynamic Regroup
16						

	LEON	County		MCS	Mosquito Control Emp.			
Position	Zone A	Full Description	Position	Zone B	Full Description	Position	Zone C	Full Description
1	LEMOG	Leon Mosquito Control General	1	LEMNTD	Leon Facilities Management Disp	1	MACALL	Mutual Aid Calling
2	LSOA3	LCSO Aviation Bureau 3	2	LESWD	Leon Solid Waste Disp	2	MATAC1	Mutual Aid TAC 1
3			3	LEOWKS	Leon Public Works Disp	3	MATAC2	Mutual Aid TAC 2
4			4	LEMOSC	Leon Mosquito Control Disp	4	MATAC3	Mutual Aid Tac 3
5			5	LEFLT	Leon Fleet Disp	5	MATAC4	Mutual Aid Tac 4
6			6	LEOLIB	Leon Library Disp	6	MAFLA	Mutual Aid Florida
7			7	LEWKEN	Leon Public Works Engineering Disp	7	LGCALL	Local Govt. Call
8			8	LEPKD	Leon Parks Disp	8	LGTAC1	Local Govt. Tac 1
9			9	LANCRT	Leon Animal Control Disp	9	LGTAC2	Local Govt. Tac 2
10			10	LEMIS	Leon MIS Disp	10	LGTAC3	Local Govt. Tac 3
11			11	LCSO1	LCSO Dispatch 1	11	PSCALL	Public Safety Call
12			12	LCOR1	LCSO Jail	12	PSTAC1	Public Safety Tac 1
13			13	CITYE	TPD Disp [CITY E]	13	PSTAC2	Public Safety Tac 2
14			14	LCSOEM	LCSO Emergency Management	14	PSTAC3	Public Safety Tac 3
15			15	COTEM	City of Tall Emergency Management	15	DYNGRP	Dynamic Regroup
16			16			16		

LeonParks&MiscMTSFleet4-14-00(2)

4/14/2000	LEON	County	MTS	Parks & Misc.		
Position #	Zone A	Full Description	Zone B	Full Description	Zone C	Full Description
1	LEPKS1	Leon Parks Work Group 1	LEMNTD	Leon Facilities Management Disp	MACALL	Mutual Aid Calling
2	LEPKS2	Leon Parks Work Group 2	LESWD	Leon Solid Waste Disp	MATAC1	Mutual Aid TAC 1
3	LEFLT2	Leon Fleet 2	LEOWKS	Leon Public Works Disp	MATAC2	Mutual Aid TAC 2
4	LELIB1	Leon Library Group	LEMOSC	Leon Mosquito Control Disp	MATAC3	Mutual Aid Tac 3
5	LELIB2	Leon Library Sheriff	LEFLT	Leon Fleet Disp	MATAC4	Mutual Aid Tac 4
6	LEMIS1	Leon MIS Group	LEOLIB	Leon Library Disp	MAFLA	Mutual Aid Florida
7			LEWKEN	Leon Public Works Engineering Disp	LGCALL	Local Govt. Call
8			LEPKD	Leon Parks Disp	LGTAC1	Local Govt. Tac 1
9			LANCRT	Leon Animal Control Disp	LGTAC2	Local Govt. Tac 2
10			LEMIS	Leon MIS Disp	LGTAC3	Local Govt. Tac 3
11			LCSO1	LCSO Dispatch 1	PSCALL	Public Safety Call
12			LCOR1	LCSO Jail	PSTAC1	Public Safety Tac 1
13			CITYE	TPD Disp [CITY E]	PSTAC2	Public Safety Tac 2
14			LCSOEM	LCSO Emergency Management	PSTAC3	Public Safety Tac 3
15			COTEM	City of Tall Emergency Management	DYNGRP	Dynamic Regroup
16						

	LEON	County		MTS	Public Works Supv.			
Position	Zone A	Full Description	Position	Zone B	Full Description	Position	Zone C	Full Description
1	LPWEMP	Leon Public Works Employee Group	1	LEMNTD	Leon Facilities Management Disp	1	MACALL	Mutual Aid Calling
2	LPWTAC	Leon Public Works TAC Group	2	LESWD	Leon Solid Waste Disp	2	MATAC1	Mutual Aid TAC 1
3	S&DD	COT Streets & Drainage Disp	3	LEOWKS	Leon Public Works Disp	3	MATAC2	Mutual Aid TAC 2
4	LPWSPN	Leon Public Works Superintendent Group	4	LEMOSC	Leon Mosquito Control Disp	4	MATAC3	Mutual Aid Tac 3
5	LPWSUP	Leon Public Works Supervisor Group	5	LEFLT	Leon Fleet Disp	5	MATAC4	Mutual Aid Tac 4
6			6	LEOLIB	Leon Library Disp	6	MAFLA	Mutual Aid Florida
7			7	LEWKEN	Leon Public Works Engineering Disp	7	LGCALL	Local Govt. Call
8			8	LEPKD	Leon Parks Disp	8	LGTAC1	Local Govt. Tac 1
9			9	LANCRT	Leon Animal Control Disp	9	LGTAC2	Local Govt. Tac 2
10			10	LEMIS	Leon MIS Disp	10	LGTAC3	Local Govt. Tac 3
11			11	LCSO1	LCSO Dispatch 1	11	PSCALL	Public Safety Call
12			12	LCOR1	Leon County Jail	12	PSTAC1	Public Safety Tac 1
13			13	CITYE	TPD Disp [CITY E]	13	PSTAC2	Public Safety Tac 2
14			14	LCSOEM	LCSO Emergency Management	14	PSTAC3	Public Safety Tac 3
15			15	COTEM	City of Tall Emergency Management	15	DYNGRP	Dynamic Regroup
16			16			16		

4/14/2000	LEON	County	MTS	SOLID WASTE Emp.	10 MTS	
Position #	**Zone A**	**Full Description**	**Zone B**	**Full Description**	**Zone C**	**Full Description**
1	LESW1	Leon Solid Group 1	LEMNTD	Leon Facilities Management Disp	MACALL	Mutual Aid Calling
2	LESW2	Leon Solid Waste Group 2	LESWD	Leon Solid Waste Disp	MATAC1	Mutual Aid TAC 1
3	SLDDSP	COT Solid Waste	LEOWKS	Leon Public Works Disp	MATAC2	Mutual Aid TAC 2
4			LEMOSC	Leon Mosquito Control Disp.	MATAC3	Mutual Aid Tac 3
5			LEFLT	Leon Fleet Disp	MATAC4	Mutual Aid Tac 4
6			LEOLIB	Leon Library Disp.	MAFLA	Mutual Aid Florida
7			LEWKEN	Leon Public Works Engineering Disp	LGCALL	Local Govt. Call
8			LEPKD	Leon Parks Disp	LGTAC1	Local Govt. Tac 1
9			LANCRT	Leon Animal Control Disp.	LGTAC2	Local Govt. Tac 2
10			LEMIS	Leon MIS Disp.	LGTAC3	Local Govt. Tac 3
11			LCSO1	LCSO Dispatch 1	PSCALL	Public Safety Call
12			LCOR1	LCSO Jail	PSTAC1	Public Safety Tac 1
13			CITYE	TPD Disp [CITY E]	PSTAC2	Public Safety Tac 2
14			LCSOEM	LCSO Emergency Management	PSTAC3	Public Safety Tac 3
15			COTEM	City of Tall Emergency Management	DYNGRP	Dynamic Regroup
16						

NCS Template

9/26/2006

Position	Zone A	Full Description	Position	Zone B	Full Description	Position	Zone C	Full Description
1	CODED	NCS Code Enf Dispatch	1	CITYE	City E [Police Disp]	1	MACALL	Mutual Aid Calling
2	CODE2	NCS Code 2	2	SAFETY	Safety	2	MATAC1	Mutual Aid Tac 1
3	ANML1	COT Animal Control	3	FLEET	Fleet Disp	3	MATAC2	Mutual Aid Tac 2
4	ANML2	NCS Animal Control 2	4	LGCALL	Local Govet Calling	4	MATAC3	Mutual Aid Tac 3
5	BLDIN1	Building Inspection Dispatch	5	LGTAC1	Local Govt Tac1	5	MATAC4	Mutual Aid Tac 4
6	ENVSV1	Environmental Services	6	LGTAC2	Local Govt Tac2	6	MAFLA	Mutual Aid FLA
7	PKSD	Parks Maint Disp	7	LGTAC3	Local Govt Tac3	7	S&DD	Street & Drainage Disp
8	PARK2	Parks Maint 2	8	PSCALL	Public Safwrty Calling	8	TRFD	Traffic Disp
9	PARK3	Parks Maint 3	9	PSTAC1	Public Safety Tac 1	9	PWENGD	PW Eng Disp
10	GNSV1	General Services Disp	10	PSTAC2	Public Safety Tac 2	10	GMD	PW Growth Mngt Disp
11	UTLACD	Finance Utility Acc. Dipatch	11	PSTAC3	Public Safety Tac 3	11	PKSD	Parks Maint Disp
12	UTLSP1	Utility Support Cost Coordinator	12	DYNGRP	Dynamic Regroup	12	WTRD	Water Oper Disp
13	UTLSP2	Utility Suppot Safety & Training	13	TLTN1	Taltran Disp	13	GASD	Gas Oper Disp
14	SLDWS1	Solid Waste 1	14	NCSD	Neighborhood Disp	14	SWRD	Sewer Oper Disp
15	SLDWS2	Solid Waste 2	15	STRMWD	Storm Water Disp	15	ELEOPD	Elec Oper Disp
16	NCST1	NCS Tac 1	16	ISSD	ISS Disp	16	ELETRD	Elec Trouble Disp

Public Work[illegible] Template

9/26/2006

Position	Zone A	Full Description
1	PWD	Public Works Adm Disp
2	PWENGD	PW Engineering Dispatch
3	PWENG2	PW Engineering 2
4	S&DD	Streets & Drainage Dispatch
5	S&D2	Streets & Drainage 2
6	S&D3	Streets & Drainage 3
7	STRMWD	Storm Water Dispatch
8	STRMW2	Storm Water 2
9	TRFD	Traffic Dispatch
10	TRF2	Traffic 2
11	TRF3	Traffic 3
12	FLT2	Fleet Maintenance 2
13	FLT3	Fleet Maintenance 3
14	FLT4	Fleet Maintenance 4
15	PWTC1	PW TAC 1
16	PWTC2	PW TAC 2

9/26/2006

Position	Zone B	Full Description
1	CITYE	City E[Police Disp]
2	SAFT	Safety
3	FLTD	Fleet Disp
4	LGCALL	Local Govt Calling
5	LGTAC1	Local Govt Tac !
6	LGTAC2	Local Govt Tac 2
7	LGTAC3	Local Govt Tac 3
8	PSCALL	Public Safety Calling
9	PSTAC1	Public Safety Tac 1
10	PSTAC2	Public Safety Tac 2
11	PSTAC3	Public Safety Tac 3
12	DYNGRP	Dynamic Regroup
13	TLTTN1	Taltran Dispatch
14	NCSD	NCS Dispatch
15	STRMWD	Storm Water Dispatch
16	ISSD	ISS dispatch

Position	Zone C	Full Description
1	MACALL	Mutual Aid Calling
2	MATAC1	Mutual Aid Tac 1
3	MATAC2	Mutual Aid Tac 2
4	MATAC3	Mutual Aid Tac 3
5	MATAC4	Mutual Aid Tac 4
6	MAFL	Mutual Aid FLA
7	S&DD	Streets & Drainage Dispatch
8	TRFD	Traffic Dispatch
9	PWENGD	PW Engineering Dispatch
10	GRD	Growth Management Dispatch
11	PKSD	Parks and Rec Dispatch
12	WTRD	Water Dispatch
13	GASD	Gas Dispatch
14	SWRD	Sewer Dispatch
15	ELEOPD	Elec Operations Dispatch
16	ELETRD	Electric Trouble Dispatch

Solid Waste Template

9/26/2006

Position	Zone A	Full Description	Position	Zone B	Full Description	Position	Zone C	Full Description
1	SLDDSP	Solid Waste Dispatch	1	CITYE	City E [Police Disp]	1	MACALL	Mutual Aid Calling
2	SLDWS1	Solid Waste 1	2	SAFETY	Safety	2	MATAC1	Mutual Aid Tac 1
3	SLDWS2	Solid Waste 2	3	FLEET	Fleet Disp	3	MATAC2	Mutual Aid Tac 2
4	ELEOPD	Elec Operations Disp	4	LGCALL	Local Govet Calling	4	MATAC3	Mutual Aid Tac 3
5	ELETRD	Elec Trouble Disp	5	LGTAC1	Local Govt Tac1	5	MATAC4	Mutual Aid Tac 4
6	PWD	Public Works Disp	6	LGTAC2	Local Govt Tac2	6	MAFLA	Mutual Aid FLA
7	TRAFD	P W Traffic Disp	7	LGTAC3	Local Govt Tac3	7	S&DD	Street & Drainage Disp
8	WTRD	Water Disp	8	PSCALL	Public Safwrty Calling	8	TRFD	Traffic Disp
9	GASD	Gas Disp	9	PSTAC1	Public Safety Tac 1	9	PWENGD	PW Eng Disp
10	SWRD	Sewer Disp	10	PSTAC2	Public Safety Tac 2	10	GMD	PW Growth Mngt Disp
11	S&DD	Streets & Drainage Disp	11	PSTAC3	Public Safety Tac 3	11	PKSD	Parks Maint Disp
12	STRMWD	Storm Water Disp	12	DYNGRP	Dynamic Regroup	12	WTRD	Water Oper Disp
13	PKSMD	Parks Maint Disp	13	TLTN1	Taltran Disp	13	GASD	Gas Oper Disp
14	CODED	NCS Code Disp	14	NCSD	Neighborhood Disp	14	SWRD	Sewer Oper Disp
15	ANML1	COT Animal Control	15	STRMWD	Storm Water Disp	15	ELEOPD	Elec Oper Disp
16	LESW1	LEON SOLID GROUP 1	16	ISSD	ISS Disp	16	ELETRD	Elec Trouble Disp

StarMetro Template

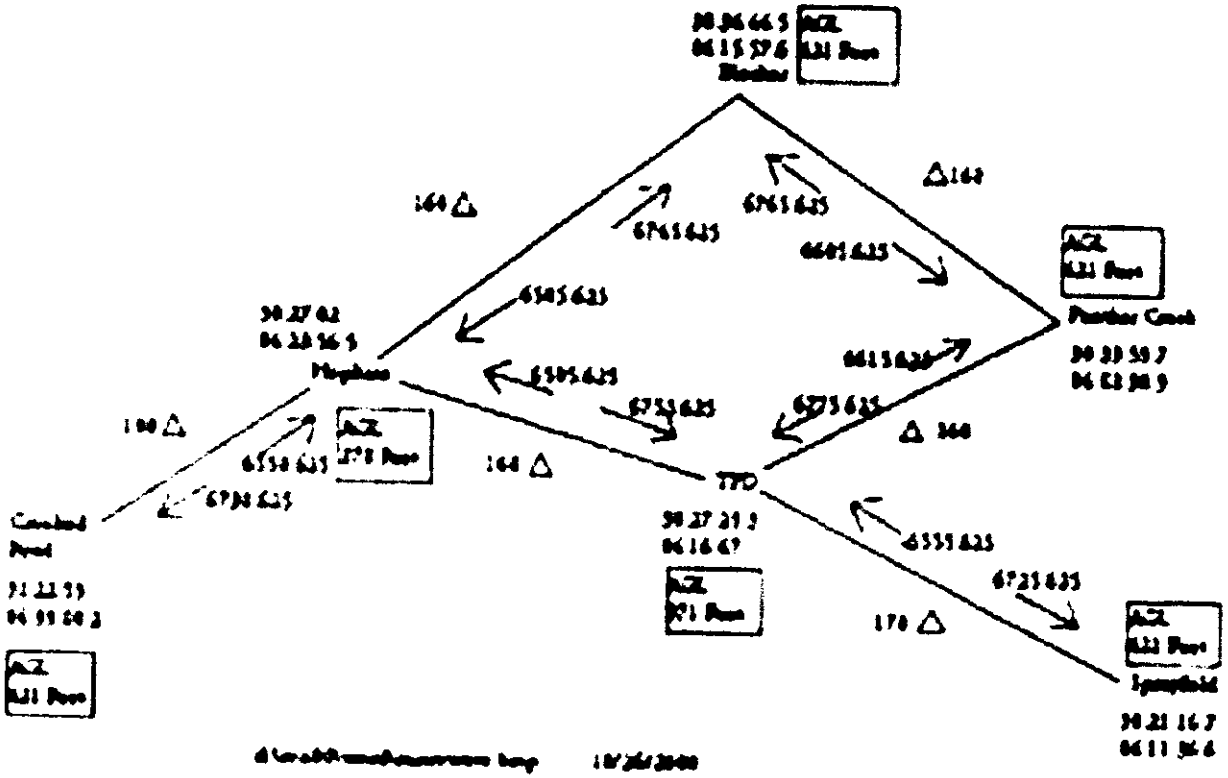
9/27/2006

Position	Zone A	Full Description	Position	Zone B	Full Description	Position	Zone C	Full Description
1	TLTN1	Taltran Bus Disp	1	CITYE	City E[Police Disp]	1	MACALL	Mutual Aid Calling
2	TLTN2	Taltran Van Disp	2	SAFT	Safety	2	MATAC1	Mutual Aid Tac 1
3	TLTN3	Mngr to Bus	3	FLTD	Fleet Disp	3	MATAC2	Mutual Aid Tac 2
4	TLTN4	Mngr to Van	4	LGCALL	Local Govt Calling	4	MATAC3	Mutual Aid Tac 3
5	TLTN5	Manager	5	LGTAC1	Local Govt Tac !	5	MATAC4	Mutual Aid Tac 4
6	TLTN6	Maintenance 1	6	LGTAC2	Local Govt Tac 2	6	MAFL	Mutual Aid FLA
7	TLTN7	Maintenance 2	7	LGTAC3	Local Govt Tac 3	7	S&DD	Street & Drainage Disp
8	TLTNAD	Taltran Administrative	8	PSCALL	Public Safety Calling	8	TRFD	Traffic Disp
9	TLTSUP	Taltran Supervisor	9	PSTAC1L	Public Safety Tac 1	9	ENGD	PW Eng Disp
10			10	PSTAC2	Public Safety Tac 2	10	GMD	PW Growth Mngt Disp
11			11	PSTAC3	Public Safety Tac 3	11	PKSD	Parks Maint Disp
12			12	DYNGRP	Dynamic Regroup	12	WTRD	Water Oper Disp
13			13	TLTRND	Taltran Disp	13	GASD	Gas Oper Disp
14			14	NCSD	Neighborhood Disp	14	SWRD	Sewer Oper Disp
15			15	STRMWD	Storm Water Disp	15	ELEOPD	Elec Oper Disp
16			16	ISSD	ISS Disp	16	ELETRD	Elec Trouble Disp

City of Tallahassee

Radio Communications, Microwave Sketch

Not to Scale



DRAFT