**PLANNING GUIDE FOR 9-1-1 INTERFACES TO ADMIN TELEPHONE SYSTEMS**

**PSAP 9-1-1 Checklist for new or changes to your PBX/IP Telephone System(s) that affect your 9-1-1 (VESTA/VIPER) system(s) for your 7/10 digit Administrative/Non-Emergency lines.**

***This document may be given to your CITY/COUNTY IT personnel when they are upgrading or making changes to the Telephone (PBX/IP) systems.***

**For Arizona’s 9-1-1 Systems**

**Planning**

Prior to your IT department purchasing an upgrade or installation of your new Telephone System, the following actions need to be completed.

1. Engage your 9-1-1 Equipment Maintenance Provider (CenturyLink/Frontier etc…) 9-1-1 Sales and engineer.
* Request a print out from your Telco 9-1-1 Equipment Maintenance Provider (CenturyLink/Frontier etc…) of your existing administrative lines names and numbers. The 911 technician supervisor or engineer can provide you this. (This is the VESTA or VIPER DB line file that includes the line name and numbers). This information is also included in the Preventative Maintenance (PM) reports that you normally get from your 9-1-1 Equipment Maintenance Provider such as CenturyLink, Frontier etc….
* Discuss the quantity and type of lines that exist today with your 911 equipment engineer. (Emergency Non-emergency etc…)
	+ What are the line types (1FB, B1, Intercom Only, PBX lines, such as (DID – Direct Inward Dialed) and or ring down circuits).
	+ Which lines terminate directly on the VESTA/VIPER system?
	+ Which lines are being provided by your PBX/IP vendor today?
	+ Are you making changes to any of these lines?
	+ Are you using auto attendant on any of these lines? (Menus press 1, press 2 etc)
	+ What features are programmed on the existing administrative lines (Hunting, Caller ID, 3 Way Call Transfer, Call Forwarding etc….)?
	+ Will the new IP/PBX require a 9+ dialing or no 9+ and just 10 digit dialing? **This is very important!!!** 911 PSAP speed dials and dialing plans may need to be changed in your VESTA/VIPER system. This would require the PSAP to make these changes. Some of these changes could be up to 10,000 entries.
1. Schedule a pre planning meetings to discuss the design and to engineer the administration line handoff(s) to your new PBX /IP telephone system from your VESTA/VIPER 911 system. Include the following personnel:

* PSAPs Supervisor/Managers
* 9-1-1 Equipment Maintenance Provider (CenturyLink/Frontier Sales, Engineer and Technician etc…)
* IT Data and Telephony personnel
* PBX/VoIP telephone provider(s)
* City/County decision makers
* 911 System Administrator (Optional)
* 9-1-1 equipment vendor (Optional)
* State 911 Office (Optional)

**Project Tasks**

**Formal Notification: Letter and Recipients**

1. The IP/PBX Sales and Engineer will work with the 911 Maintenance Equipment provider(s) (9-1-1 CenturyLink, Frontier 911 equipment engineer) to provide a scope of work and drawing of what is required.
2. Additional equipment may be required by both the IP/PBX provided and 911 equipment providers. The PSAP Manager/Supervisor and CITY/COUNTY IT will both need to ensure that these parts are included with the new IP/PBX telephone and 9-1-1 equipment designs.
3. 9-1-1 and IP/PBX Equipment Options:
	* + For any additions on the VESTA/VIPER equipment contacts the State 911 Office to determine if there are any funds available for parts/labor).
		+ T-1 Handoff = T-1 Gateway between the IP/PBX and 911 systems (One (1) on the PBX/IP system and one (1) on the 911 equipment).
		+ T-1 configuration: T-1=NI2-ISDN(Provides Q-SIG), B8ZS, T1 Framing=ESF
		+ FXO/FXS Handoff = FXO/FXS Gateways (These normally coming 2, 4, 8 or 16 port varieties)
		+ Router/Firewalls = For Security of the CITY/COUNTY IT network from the 9-1-1 Network or Domain. Decide who will provide the routers, firewalls and what the connectivity to the VESTA/VIPER system will look like.

Once the design is created, the equipment engineers for both the CPE 911 and IP/PBX system(s) will agree with the design and provide the PSAP and IT/Telephony personnel a documented design drawing and scope of work: (Refer to attached Power Point for examples).

**Administrative Network Lines by line type Explanations:**

1. 1FB/B1 – Flat Business Line (Example 602-xxx-xxxx)
	1. No 9+ dialing is normally required on this type of line. If you do have this type of line make sure call forwarding transfer, caller ID and call forwarding is programmed on these line. Also these lines are normally in some sort of hunting arrangement.
2. DID – Direct Inward Dialed number (Example 602-xxx-xxxx)
	1. These type of lines are provided to the PSAP from the IP/PBX provide and or CITY /COUNTY IT personnel.
	2. These lines would be provided by your IP/PBX system. They can be programmed as 9+ dialing or 10 digit dialing.
3. Intercom only or in house number (xxxx)
	1. These lines would be provided by your IP/PBX system. They would be programmed 3, 4, 5 digits, in house only dialing. (Normally used for Lobby type phones or intercom only dialing lines).
4. Ring Down Circuit – Direct line to another PSAP or Agency. This could be set up as a ring down circuit or hot line (10 digit number ring down).
5. Call Planner/ Business Continuation Routing™ (BCR)
	1. These are services that some Telco’s can provide for disaster recovery that will allow the PSAP to have the administrative line(s) forwarded during a disaster.

**Other Items to consider:**

1. How will the administrative lines from the PBX/IP system be used?
	1. What dialing plan will be used - 3, 4 or 5-Digit Dialing to other city/county agencies from the VESTA/VIPER system?
	2. Will the T-1 interface route inbound and outbound admin calls) utilizing the PBX/IP resources such as long distance rates etc…?
	3. In bound non emergency numbers. What number will be advertised numbers to the public to dial on the VESTA/VIPER 9-1-1 systems?
	4. Will the PBX/IP system provide caller ID in-bound to the 9-1-1 VESTA/VIPER systems?
	5. Will the PSAP want to view these lines on the VESTA/Viper system as multiple buttons or pool groups?