

# FLEET MAPPING

- Session Overview and Objectives
  - Definitions
  - Cover Planning Basics
  - Examples of Design
  - Implementation requirements

# FLEET MAPPING Planning

- Definitions:
  - Fleet map:

All resources, including talk groups an entity will have or utilize for communications.

    - » Must be in a participation plan
  - Frequency:

A Specific Radio Spectrum (band)
  - Channel:

a frequency or selection on a radio (each “Channel” is a change in frequency)

# FLEET MAPPING Planning

- Definitions:
  - Talk Group:  
a “Named Virtual Channel” (no permanent change in frequency within the radio occurs)
  - Code Plug:  
The Programming parameters or set of instructions within the radio

# FLEET MAPPING Planning

- Things to consider in planning a Fleet Map:
  - Who do you talk to now
  - Who do you need to talk to
  - Who do you wish you could talk to
  - Who will this effect, and how will it effect them
  - Who are the decision makers
  - Will we have to change the way we do things
  - How do we make it simple yet effective
  - How do we train
  - Etc.

# FLEET MAPPING Planning cont.

- Who do you talk to now?
  - Who, What, Where, When, Why and How?
  - Local, Regional, State (inter and Intra), National, International. (think Globally)
  - What system is currently used? VHF, UHF, ARMER, VOIP, Phone, Computer, Other

# FLEET MAPPING Planning cont.

- Who do you talk to now? Cont.
  - What are the deficiencies you find in your communications today. (broad issues, ex: can't talk agency to agency)
  - What is the cause of the deficiency?
    - System
    - Technological
    - Protocols (authority)
    - Procedural (communications plan, ICS)
    - Personality/Political

# FLEET MAPPING Planning Cont.

- Who do you need to talk to:
  - When and Why?
  - How often? (daily/ monthly/ yearly)
  - Local agency to agency, region to region, and state to state
  - Ex: Police, Fire, EMS, Emergency Management
  - How do you desire to talk/communicate with them
  
- Who do you wish you could talk to:
  - When and Why?
  - How often? (daily/ monthly/ yearly)
  - Local, agency to agency, region to region, and state to state
  - how would you desire to talk/communicate with them

# FLEET MAPPING Planning Cont.

- What additionally would you want to do to strengthen your communications abilities with the above agencies?
  - Radio communications
  - Data communications
  - Governance issues or structures
  - Over-site Boards or committee?
  
- Who will this effect?
  - Emergency Management
  - Emergency responders
  - Non-Governmental Organizations (NGO's)
  - Schools
  - Who are you forgetting, what additional or other agencies do you need at the table today? (how far out do you reach)

# FLEET MAPPING Basics

- The Planning, Design, and Implementation of talk groups should be:
  - Standardized
  - Mission Driven
  - Balanced
  - Logical

# FLEET MAPPING Basics cont.

- Standardized
  - Naming conventions
    - Local, Regional, State, Natl.
  - Policies and Standards
    - Local, Regional, State, Natl.
  - Training
    - Resource utilization
    - ICS/NIMS Protocols

# FLEET MAPPING Basics cont.

- Mission Driven
  - Multidiscipline approach
  - Designed for interoperability
  - ICS/NIMS Protocols

# FLEET MAPPING Basics cont.

- Balanced
  - Dedicated, exclusive talk-groups for each agency
  - Shared talk-groups for mutual aid within the entity
  - Shared talk-groups for regional, statewide, national or specialized agencies

# FLEET MAPPING Basics cont.

- **Logical**
  - Don't Reinvent the Wheel
    - What is currently deployed
    - K.I.S.S. (Keep it Simple) as best you can.
  - Help is available
    - Current users on the system
    - State (ARMER and MNDOT)
    - Private Contractors Vendors, i.e. Radio Vendors

# FLEET MAPPING Basics cont.

- **Logical**
  - Keep an Open Mind
  - You may have to change the way you do business
    - Day to day operations
    - Dispatch service
    - Interoperability issues within agency
    - Interoperability within disciplines
  - Have Patience
    - You will want to make changes
    - System allows changes

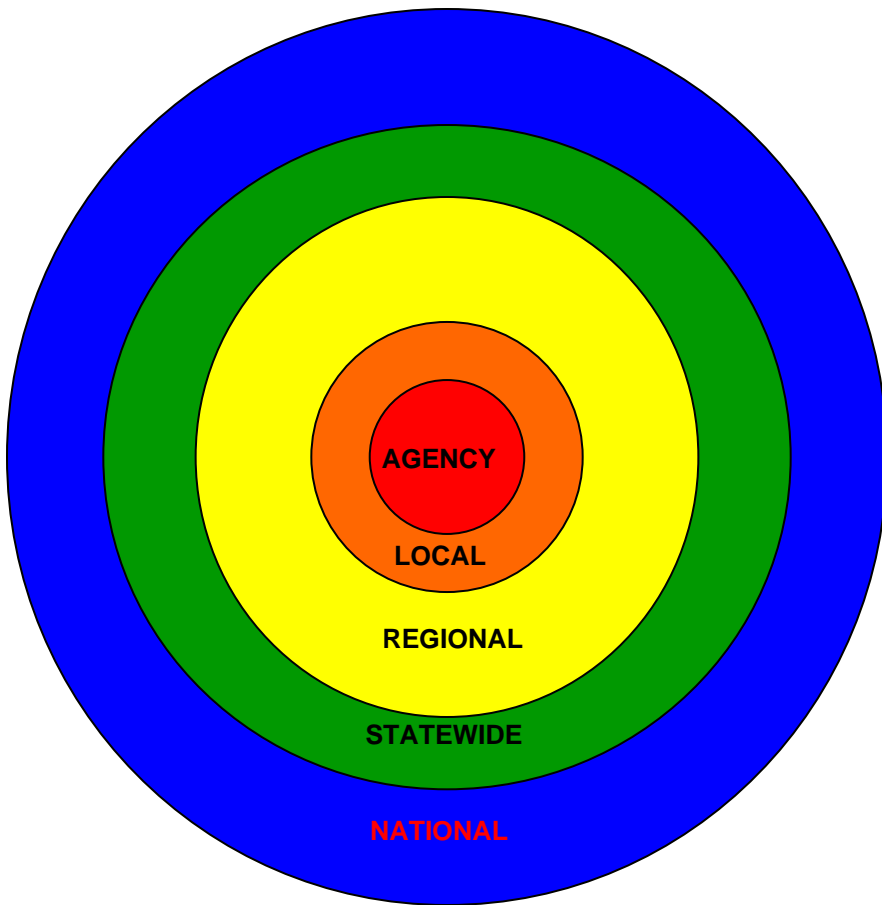
# FLEET MAPPING Design

- **Things to consider:**

- How many total talk groups are we going to have?
- How much Future expansion do we need?  
(placeholders)
- Approximately 50 regional, state, and national resources.
- How will they be displayed (Syntax)?
- Is there an effective way to affiliate talk groups to a zone?
- What talk groups do we need or want in the PSAP
- What standards and protocols must we develop or are already in place for their placement and use in the subscriber (recommended vs. mandatory)?
- Are we willing to change in the way we currently do business?

# FLEET MAPPING Design cont.

- Start with your agency
- Build layers of interoperability
- Consider all disciplines



# FLEET MAPPING Design cont.

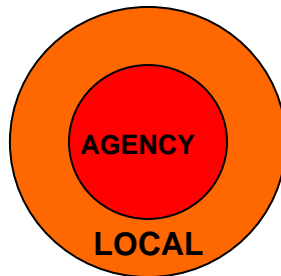


- Agency
  - Necessary
  - Dedicated
  - Sole proprietary unless you approve their use
  - Controlled by the individual discipline IE Police, Fire, Public Works etc.
    - PD ADMIN
    - FD ADMIN
    - SCPD C2C

# FLEET MAPPING Design Cont.

## ■ LOCAL

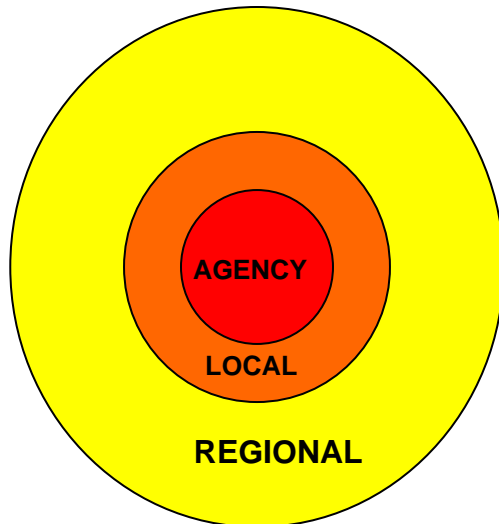
- City or County
- Necessary
- Dedicated
- Interoperability within locality
- Sole proprietary
- Controlled by the System Administrator, i.e. County or City
- LG COM 1
- CNTY 2
- KCSO ROAM



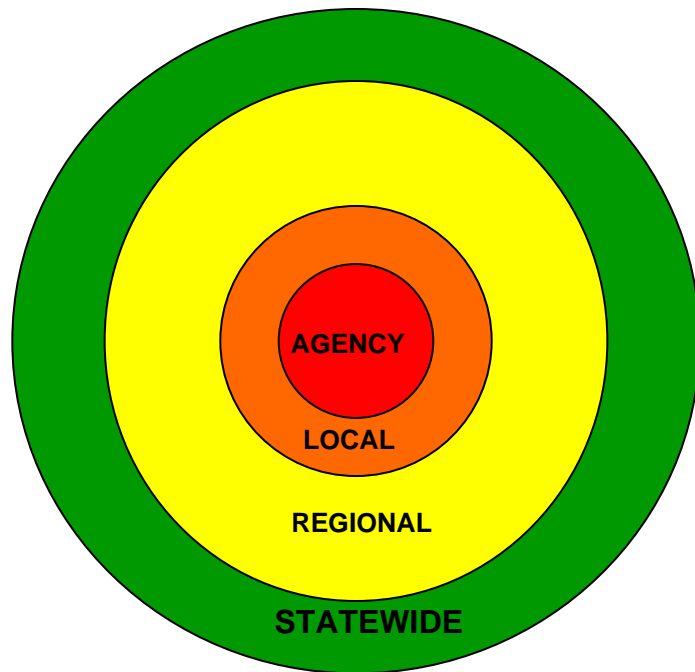
# FLEET MAPPING Design Cont.

## ■ Regional

- Designed for interoperability within a region
- Will have regional Identifier (CM NE NW SW SC SE)
- Hailing
  - CM PD
  - CM FD
  - CM PW
  - CM ROAM
- CM A tac's (all users)
- CM P tac's (Public Safety)
- CM EMS 1-4 (EMS Personnel)
- Requested and assigned for incident command
- Dedicated regional resources
- RRB proprietary



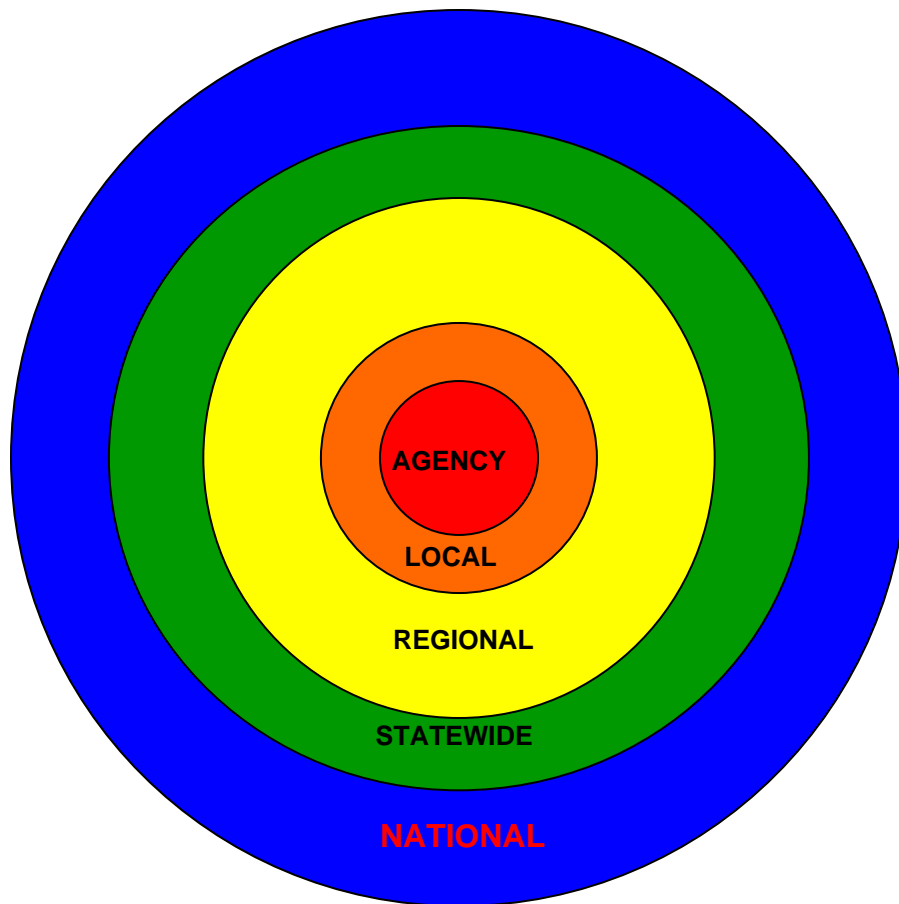
# FLEET MAPPING Design Cont.



## ■ Statewide

- Designed for interoperability with state agencies and between regional entities
- ICS/NIMS directed
- S tac's (all users)
- L tac's (Police)
- F tacs (fire)
- E tacs (EMS)
- LE TAC (law encrypted)
- LE SIU (special Investigations Units)
- Requested and assigned
- Dedicated state resources
- SRB proprietary

# FLEET MAPPING Design Cont.



- National
  - I call
  - I tacs
  - Interoperability
  - Dedicated national resources
  - FCC proprietary

# FLEET MAPPING

POS	ZONE	ZONE	ZONE	ZONE	ZONE	ZONE
1						
2						
3						
4						
5						
6						
7						
8						
9						
10						
11						
12						
13						
14						
15						
16						

# FLEET MAPPING

POS	regional	regional		State	State	Nat'l
1	CM PTAC 1	CM EMS 1		L TAC 1	LE TAC 1	I CALL
2	CM PTAC 2	CM EMS 2		L TAC 2	LE TAC 2	I TAC 1
3	CM PTAC 3	CM EMS 3		L TAC 3	LE SIU 1	I TAC 2
4	CM PTAC 4	CM EMS 4		L TAC 4	LESIU 2	I TAC 3
5	CM ATAC 1	CM TF 1		F TAC 1	SOA A1	I TAC 4
6	CM ATAC 2	CM TF 2		F TAC 2	SOA A2	
7	CM ATAC 3	CM TF 3		F TAC 3	SOA P1	
8	CM ATAC 4	CM TF 4		F TAC 4	SOA P2	
9	CM ATAC 5			E TAC 1	SOA F1	
10	CM ATAC 6			E TAC 2	SOA F2	
11	CM ATAC 7			E TAC 3	BCA TAC 7	
12	CM PD			E TAC 4		
13	CM FD			S TAC 1		
14	CM PW			S TAC 2		
15	CM ROAM			S TAC 3		
16	CM MNSEF			S TAC 4		

# FLEET MAPPING St. Cloud

#	Talk group	Note
1	PD ADM	St. Cloud Police Administration
2	PD OPS 2	St. Cloud Police Operations 2
3	PD OPS 3	St. Cloud Police Operations 3
4	PD OPS 4	St. Cloud Police Operations 4
5	PD OPS 5	St. Cloud Police Operations 5
6	PD OPS 6	St. Cloud Police Operations 6
7	PD OPS 7	St. Cloud Police Operations 7
8	PD C2C	St. Cloud Police Car to Car
9	CM PD	Central Minnesota Regional Police Hailing
10	CM PTAC 1	Central Minnesota Regional P TAC 1
11	CITY WIDE	St. Cloud City Wide Hailing
12	P-SOA 1	Public Safety Scene of Action 1
13	CONVRP	St. Cloud Conventional (800) repeater
14	CM-ROAM	Central Minnesota Roaming
15	CM MNSEF	Central Minnesota MNSEF (800 talk group)
16	PD 911	St. Cloud Dispatch Access (non LE use also)



# FLEET MAPPING St. Cloud

#	G regional PS	H regional all	I independent	M Minnesota	N National	
1	PD ADM	PD ADM	PD ADM	PD ADM	PD ADM	
2	PD OPS 2	PD OPS 2	PD OPS 2	L TAC 1	PD OPS 2	
3	PD OPS 3	PD OPS 3	PD OPS 3	L TAC 2	PD OPS 3	
4	PD OPS 4	PD OPS 4	PD SUPV	L TAC 3	PD OPS 4	
5	CM PD	PD OPS 5	SOA A1	L TAC 4	I CALL	
6	SCSO ADM	CITY WD	SOA A2	S TAC 1	ITAC 1	
7	BCSO ADM	CM ATC 1	SOA P1	S TAC 2	ITAC 2	
8	SHSO ADM	CM ATC 2	SOA P2	S TAC 3	ITAC 3	
9	STP MAIN	CM ATC 3	SCH ADM	S TAC 4	ITAC 4	
10	STP C2C	CM ATC 4	VA HOSP	CM PTC 1	N--	
11	CM PTC 1	CM ATC 5	SECPCH	CM PTC 2	N--	
12	CM PTC 2	CM ATC 6	CONV TA	CM PTC 3	N--	
13	CM PTC 3	CM ATC 7	CONVRP	CM PTC 4	N--	
14	CM PTC 4	CM ROAM	CM ROAM	CM ROAM	CM ROAM	
15	CM MNSEF	CM MNSEF	CM MNSEF	CM MNSEF	CM MNSEF	
16	SCPD 911	SCPD 911	SCPD 911	CM 911	CM 911	

# FLEET MAPPING Stearns

#	Talk group	Note
1	STSO ADM 1	Stearns County Sheriff's Office Administration 1
2	STSO ADM 2	Stearns County Sheriff's Office Administration 2
3	SCPD ADM	St. Cloud Police Department Administration
4	CM-MINSEF	MN Statewide Emergency Frequency Talk group
5	STSO TAC 1	Stearns County Sheriff's Tactical 1
6	STSO TAC 2	Stearns County Sheriff's Tactical 2
7	STSO TAC 3	Stearns County Sheriff's Tactical 3
8	CM-STCO FIRE	CM-Stearns County Fire
9	WPPD ADM	Waite Park Police Department Administration
10	SJPD ADM	St. Joseph Police Administration
11	SAPD ADM	Sartell Police Department Administration
12	CM-MSP MAIN	MN State Patrol Main Dispatch
13	BCSO ADM 1	Benton County Sheriff's Office Administration 1
14	P-SOA 1	Public Safety Scene of Action 1
15	CM-ROAM	Central MN Roaming
16	CM-STSO 911	Central MN Non-LE Access

# FLEET MAPPING Stearns

#	A	B	IC	I	L
1	STSO ADM 1	STSO ADM 1	STSO ADM 1	STSO ADM 1	STSO ADM 1
2	STSO ADM 2	CM-STCO FIRE	L TAC-1	STSO ADM 2	STSO ADM 2
3	SCPD ADM	CM P-TAC 1	L TAC-2	SCPD ADM	ALPD-ADM
4	CM-MINSEF	CM P-TAC 2	L TAC-3	CM-MINSEF	AVPD-ADM
5	STSO TAC 1	CM P-TAC 3	L TAC-4	STSO INVS-1	BGPD-ADM
6	STSO TAC 2	CM P-TAC 4	S TAC-1	STSO INVS-2	CSPD-ADM
7	STSO TAC 3	CM A-TAC 1	S TAC-2	STSO INVS-3	EVPD-ADM
8	CM-STCO FIRE	CM A-TAC 2	S TAC-3	STSO INVS-4	KBPD-ADM
9	WPPD ADM	CM A-TAC 3	S TAC-4	STSO TAC-1	MRPD-ADM
10	SJPD ADM	CM A-TAC 4	CM-P TAC-1	STSO TAC-2	PVPD-ADM
11	SAPD ADM	CM EMS-1	CM P-TAC 2	STSO TAC-3	SRPD-ADM
12	CM-MSP MAIN	CM EMS-2	CM P-TAC 3	CAMPUS SEC	SJPD-ADM
13	BCSO ADM 1	CM EMS-3	CM P-TAC 4	SCPD OPS-5	SAPD-ADM
14	P-SOA 1	CM EMS-4	CM-MINSEF	P-SOA 1	SKPD-ADM
15	CM-ROAM	<i>DYN REGRP</i>	P-SOA 1	CM-ROAM	WPPD-ADM
16	CM-STSO 911	CM-STSO 911	A-SOA 2	CM STSO-911	CM-STSO-911

# FLEET MAPPING Implementation

- Implementation
  - Documentation
  - Programming of Subscribers
  - Entity User or Inter-op Committee review
  - Fluid Document
  - Train

# FLEET MAPPING Implementation

- Implementation
  - Documentation
    - Participation plan
    - Local System Administrator
    - RRB
    - SRB
  - Programming of Subscribers
    - Build and review the template
    - Program first
    - Test it
    - Finalize layout
    - Program the fleet

# FLEET MAPPING Implementation

- Implementation
  - Entity User or Inter-op Committee review
    - Template review
    - Incident review
  - Fluid Document
    - It needs to work for you
    - It can be changed
  - Train
    - How well we do, is dependent on how we train.

# CURRENT

# PROPOSED

POS	REGIONAL INTER OP RESOURCES	STATE IC ZONE LE	STATE IC ZONE FIRE	STATE IC ZONE EMS		Regional IC ZONE	STATE IC ZONE
1	CM PTAC 1	CHOICE	CHOICE	CHOICE			
2	CM PTAC 2	L TAC 1	F TAC 1	E TAC 1			
3	CM PTAC 3	L TAC 2	F TAC 2	E TAC 2			
4	CM PTAC 4	L TAC 3	F TAC 3	E TAC 3			
5	CM ATAC 1	L TAC 4	F TAC 4	E TAC 4			
6	CM ATAC 2	S TAC 1	S TAC 1	S TAC 1			
7	CM ATAC 3	S TAC 2	S TAC 2	S TAC 2			
8	CM ATAC 4	S TAC 3	S TAC 3	S TAC 3			
9	CM ATAC 5	S TAC 4	S TAC 4	S TAC 4			
10	CM ATAC 6	CM PTAC 1	CM PTAC 1	CM PTAC 1			
11	CM ATAC 7	CM PTAC 2	CM PTAC 2	CM PTAC 2			
12	CM EMS 1	CM PTAC 3	CM PTAC 3	CM PTAC 3			
13	CM EMS 2	CM PTAC 4	CM PTAC 4	CM PTAC 4			
14	CM EMS 3	CM MNSEF	SW FIRE	CM MNSEF			
15	CM EMS 4	P SOA 1	P SOA 1	P SOA 1			
16	CM ROAM	A SOA 1	A SOA 1	A SOA 1			

# CURRENT

# PROPOSED

POS	REGIONAL INTER OP RESOURCES	STATE IC ZONE LE	STATE IC ZONE FIRE	STATE IC ZONE EMS		Regional IC ZONE	STATE IC ZONE
1	CM PTAC 1					CM CALL or?	
2	CM PTAC 2					CM 2	
3	CM PTAC 3					CM 3	
4	CM PTAC 4					CM 4	
5	CM ATAC 1					CM 5	
6	CM ATAC 2					CM 6	
7	CM ATAC 3					CM 7	
8	CM ATAC 4					CM 8	
9	CM ATAC 5					CM 9	
10	CM ATAC 6					CM 10	
11	CM ATAC 7					CM 11	
12	CM EMS 1					CM 12	
13	CM EMS 2					A SOA 1	
14	CM EMS 3					F SOA 1	
15	CM EMS 4					P SOA 1	
16	CM ROAM					CM ROAM or?	

# CURRENT

# PROPOSED

POS	REGIONAL INTER OP RESOURCES	STATE IC ZONE LE	STATE IC ZONE FIRE	STATE IC ZONE EMS		Regional IC ZONE	STATE IC ZONE
1		CHOICE	CHOICE	CHOICE			MN CALL or?
2		L TAC 1	F TAC 1	E TAC 1			S TAC 2
3		L TAC 2	F TAC 2	E TAC 2			S TAC 3
4		L TAC 3	F TAC 3	E TAC 3			S TAC 4
5		L TAC 4	F TAC 4	E TAC 4			S TAC 5
6		S TAC 1	S TAC 1	S TAC 1			S TAC 6
7		S TAC 2	S TAC 2	S TAC 2			S TAC 7
8		S TAC 3	S TAC 3	S TAC 3			S TAC 8
9		S TAC 4	S TAC 4	S TAC 4			S TAC 9
10		CM PTAC 1	CM PTAC 1	CM PTAC 1			S TAC 10
11		CM PTAC 2	CM PTAC 2	CM PTAC 2			S TAC 11 or VHF
12		CM PTAC 3	CM PTAC 3	CM PTAC 3			S TAC 12 or VHF
13		CM PTAC 4	CM PTAC 4	CM PTAC 4			A SOA 1
14		CM MNSEF	SW FIRE	CM MNSEF			F SOA 1
15		P SOA 1	P SOA 1	P SOA 1			P SOA 1
16		A SOA 1	A SOA 1	A SOA 1			MN ROAM or ?

# CURRENT

# PROPOSED

POS	REGIONAL INTER OP RESOURCES	STATE IC ZONE LE	STATE IC ZONE FIRE	STATE IC ZONE EMS		Regional IC ZONE	STATE IC ZONE
1	CM PTAC 1	CHOICE	CHOICE	CHOICE			
2	CM PTAC 2	L TAC 1	F TAC 1	E TAC 1			
3	CM PTAC 3	L TAC 2	F TAC 2	E TAC 2			
4	CM PTAC 4	L TAC 3	F TAC 3	E TAC 3			
5	CM ATAC 1	L TAC 4	F TAC 4	E TAC 4			
6	CM ATAC 2	S TAC 1	S TAC 1	S TAC 1			
7	CM ATAC 3	S TAC 2	S TAC 2	S TAC 2			
8	CM ATAC 4	S TAC 3	S TAC 3	S TAC 3			
9	CM ATAC 5	S TAC 4	S TAC 4	S TAC 4			
10	CM ATAC 6	CM PTAC 1	CM PTAC 1	CM PTAC 1			
11	CM ATAC 7	CM PTAC 2	CM PTAC 2	CM PTAC 2			
12	CM EMS 1	CM PTAC 3	CM PTAC 3	CM PTAC 3			
13	CM EMS 2	CM PTAC 4	CM PTAC 4	CM PTAC 4			
14	CM EMS 3	CM MNSEF	SW FIRE	CM MNSEF			
15	CM EMS 4	P SOA 1	P SOA 1	P SOA 1			
16	CM ROAM	A SOA 1	A SOA 1	A SOA 1			

# CURRENT

# PROPOSED

POS	REGIONAL INTER OP RESOURCES	STATE IC ZONE LE	STATE IC ZONE FIRE	STATE IC ZONE EMS		Regional IC ZONE	STATE IC ZONE
1						CM CALL or?	MN CALL or?
2						CM 2	S TAC 2
3						CM 3	S TAC 3
4						CM 4	S TAC 4
5						CM 5	S TAC 5
6						CM 6	S TAC 6
7						CM 7	S TAC 7
8						CM 8	S TAC 8
9						CM 9	S TAC 9
10						CM 10	S TAC 10
11						CM 11	S TAC 11 or VHF
12						CM 12	S TAC 12 or VHF
13						A SOA 1	A SOA 1
14						F SOA 1	F SOA 1
15						P SOA 1	P SOA 1
16						CM ROAM or?	MN ROAM or ?

# CURRENT

# PROPOSED

POS	REGIONAL INTER OP RESOURCES	STATE IC ZONE LE	STATE IC ZONE FIRE	STATE IC ZONE EMS		Regional IC ZONE	STATE IC ZONE
1	CM PTAC 1	CHOICE	CHOICE	CHOICE		CM CALL or?	MN CALL or?
2	CM PTAC 2	L TAC 1	F TAC 1	E TAC 1		CM 2	S TAC 2
3	CM PTAC 3	L TAC 2	F TAC 2	E TAC 2		CM 3	S TAC 3
4	CM PTAC 4	L TAC 3	F TAC 3	E TAC 3		CM 4	S TAC 4
5	CM ATAC 1	L TAC 4	F TAC 4	E TAC 4		CM 5	S TAC 5
6	CM ATAC 2	S TAC 1	S TAC 1	S TAC 1		CM 6	S TAC 6
7	CM ATAC 3	S TAC 2	S TAC 2	S TAC 2		CM 7	S TAC 7
8	CM ATAC 4	S TAC 3	S TAC 3	S TAC 3		CM 8	S TAC 8
9	CM ATAC 5	S TAC 4	S TAC 4	S TAC 4		CM 9	S TAC 9
10	CM ATAC 6	CM PTAC 1	CM PTAC 1	CM PTAC 1		CM 10	S TAC 10
11	CM ATAC 7	CM PTAC 2	CM PTAC 2	CM PTAC 2		CM 11	S TAC 11 or VHF
12	CM EMS 1	CM PTAC 3	CM PTAC 3	CM PTAC 3		CM 12	S TAC 12 or VHF
13	CM EMS 2	CM PTAC 4	CM PTAC 4	CM PTAC 4		A SOA 1	A SOA 1
14	CM EMS 3	CM MNSEF	SW FIRE	CM MNSEF		F SOA 1	F SOA 1
15	CM EMS 4	P SOA 1	P SOA 1	P SOA 1		P SOA 1	P SOA 1
16	CM ROAM	A SOA 1	A SOA 1	A SOA 1		CM ROAM or?	MN ROAM or ?

# FLEET MAPPING

POS	CM ZONE	ME ZONE	NW ZONE	NE ZONE	SW ZONE	SC ZONE	SE ZONE	IC ZONE
1	CM CALL	ME CALL	NW CALL	NE CALL	SW CALL	SC CALL	SE CALL	MN CALL
2	CM 2	ME 2	NW 2	NE 2	SW 2	SC 2	SE 2	S TAC 2
3	CM 3	ME 3	NW 3	NE 3	SW 3	SC 3	SE 3	S TAC 3
4	CM 4	ME 4	NW 4	NE 4	SW 4	SC 4	SE 4	S TAC 4
5	CM 5	ME 5	NW 5	NE 5	SW 5	SC 5	SE 5	S TAC 5
6	CM 6	ME 6	NW 6	NE 6	SW 6	SC 6	SE 6	S TAC 6
7	CM 7	ME 7	NW 7	NE 7	SW 7	SC 7	SE 7	S TAC 7
8	CM 8	ME 8	NW 8	NE 8	SW 8	SC 8	SE 8	S TAC 8
9	CM 9	ME 9	NW 9	NE 9	SW 9	SC 9	SE 9	S TAC 9
10	CM 10	ME 10	NW 10	NE 10	SW 10	SC 10	SE 10	S TAC 10
11	CM 11	ME 11	NW 11	NE 11	SW 11	SC 11	SE 11	S TAC 11
12	CM 12	ME 12	NW 12	NE12	SW 12	SC 12	SE 12	S TAC 12
13	A SOA 1	A SOA 1	A SOA 1	A SOA 1	A SOA 1	A SOA 1	A SOA 1	A SOA 1
14	F SOA 1	F SOA 1	F SOA 1	F SOA 1	F SOA 1	F SOA 1	F SOA 1	F SOA 1
15	P SOA 1	P SOA 1	P SOA 1	P SOA 1	P SOA 1	P SOA 1	P SOA 1	P SOA 1
16	CM ROAM	ME ROAM	NW ROAM	NE ROAM	SW ROAM	SC ROAM	SE ROAM	MN ROAM