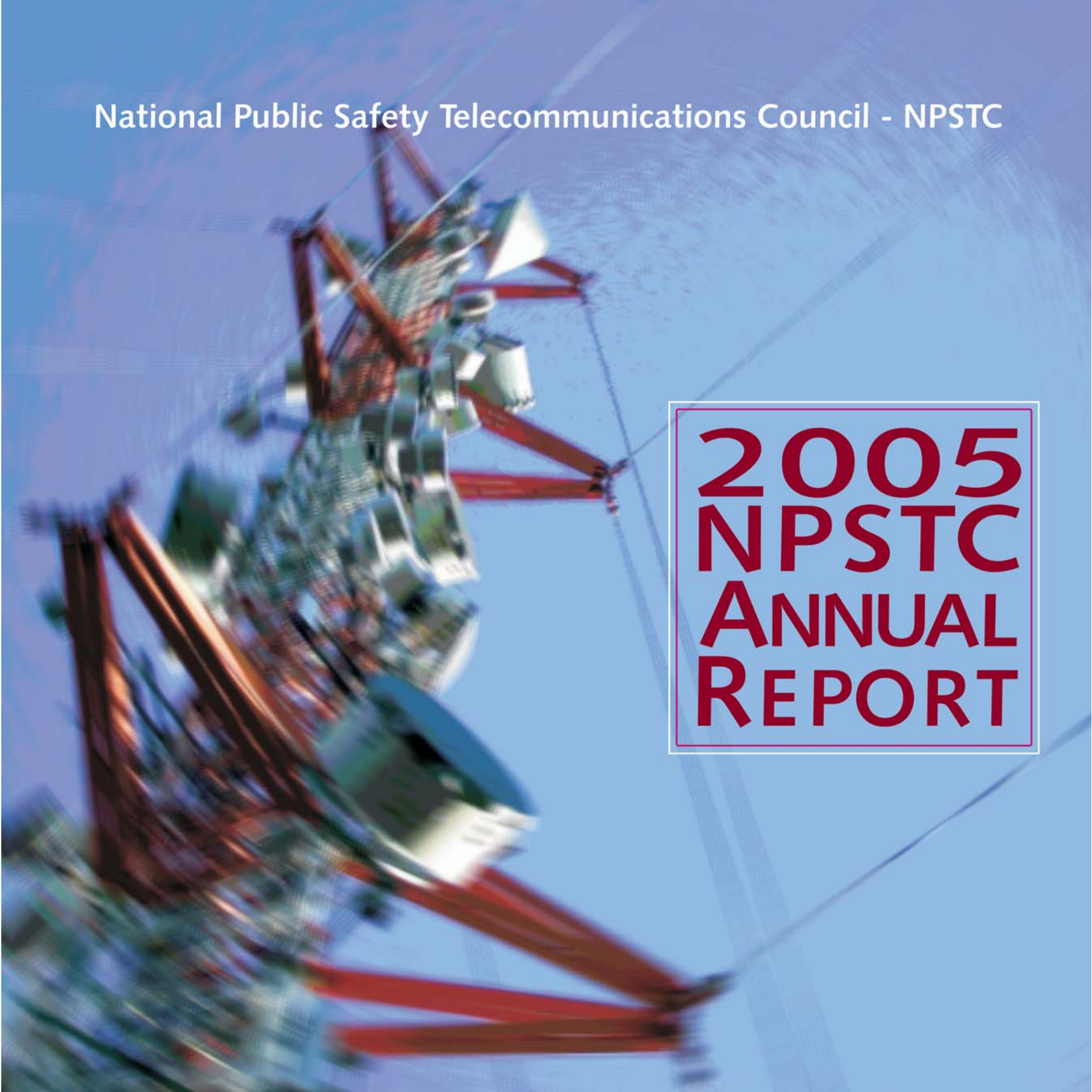
National Public Safety Telecommunications Council - NPSTC



2005 NPSTC Annual Report

National Public Safety Telecommunications Council

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In Memoriam

Alfred J. Mello, who dedicated a lifetime of work to public safety communications needs on city, state, and national levels, was an early powerful voice on behalf of public safety telecommunications. Mr. Mello was a key figure in the fire and EMS communications field and was the director of frequency coordination for the International Municipal Signal Association (IMSA) and International Association of Fire Chiefs (IAFC) since 1986. Mr. Mello was Director of Communications for the City of Providence, (Rhode Island) for 37 years.

In 1985, he was appointed a Fellow of the Radio Club of America. He was a member of the International Municipal Signal Association where he served as Chairman of the Board, National Radio Chairman, and Past International President/Board Member. He was a member of the Original National Committee for 911, and a member of the International Association of Fire Chiefs. Mr. Mello passed away in January 2006.

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Member & Liaison Organizations

NPSTC MEMBER ORGANIZATIONS

American Association of State Highway and Transportation Officials

American Radio Relay League

American Red Cross

Association of Public Safety Communications Officials - International

Forestry Conservation Communications Association

International Association of Chiefs of Police

International Association of Emergency Managers

International Association of Fire Chiefs

International Association of Fish and Wildlife Agencies

International Municipal Signal Association

National Association of State Emergency Medical Services Officials

National Association of State Foresters

National Association of State Telecommunications Directors

NPSTC LIAISON ORGANIZATIONS

Federal Communications Commission

Federal Partnership for Interoperable Communications

National Telecommunications and Information Administration

Telecommunications Industry Association

U.S. Department of Agriculture

U.S. Department of Homeland Security,

Federal Emergency Management Administration

SAFECOM Program

U.S. Department of Interior

U.S. Department of Justice,

CommTech Program

NATIONAL PUBLIC SAFETY TELECOMMUNICATIONS COUNCIL ANNUAL REPORT 2005

Formed on May 1, 1997, NPSTC is a federation of organizations representing public safety telecommunications. NPSTC was originally formed to encourage and facilitate implementation of the findings and recommendations of the Public Safety Wireless Advisory Committee (PSWAC), established in 1994 by the Federal Communications Commission (FCC) and National Telecommunications and Information Administration (NTIA) to evaluate the wireless communications needs of local, tribal, state, and federal public safety agencies through the year 2010, identify problems, and recommend possible solutions.

There are approximately 2.5 million public safety first responders in the United States working for 18,000 local and State law enforcement agencies, 26,000 fire departments, and more than 6,000 rescue departments, plus federal law enforcement, tribal law enforcement, and other agencies, such as transportation and the public utilities who need to communicate during critical incidents. PSWAC was chartered as a result of significant encouragement to Congress by a number of public safety associations that sought much-needed spectrum relief for public safety communications and new technologies integration. In 1996, the Advisory Committee released the *PSWAC Final Report*, which identified public safety issues and concerns. Most of the PSWAC findings and recommendations are considered valid today.

Five years later in 1999, the FCC sponsored the National Coordination Committee (NCC) to provide the Commission with similar recommendations concerning interoperability, technology, and implementation—this time, regarding the 24 MHz of spectrum in the 700 MHz band reallocated by the FCC from broadcast television to public safety. As with the formation of PSWAC, the FCC directly involved local and state public safety leaders in developing these important decisions. When the NCC ended its work in July 2003 with a number of decisions still outstanding, NPSTC expanded its original role to include NCC follow-on activities.

NPSTC emerged from the work of these two earlier advisory committees and continues to provide that important public stage for critical public safety telecommunications. Today, NPSTC's work has grown to encompass a wide range of public safety telecommunications issues that is likely to continue to expand.

This Annual Report 2005 provides highlights of the year's activities and achievements as the collective voice of public safety communications worked to ensure that public safety communications needs are communicated to regulatory bodies impacting our service to the first responder and public safety community.

Welcome from NPSTC's Chair

Welcome to the Annual Report of the National Public Safety Telecommunications Council (NPSTC), a federation of 13 organizations that came together 8 years ago to provide a collective voice on the vitally important issues that affect public safety telecommunications. Our work has never been more important as the breakdown in communications experienced during Hurricane Katrina so poignantly illustrates. Hurricane Katrina graphically illustrated what emergency responders have known for a long time. We need to explore new technologies to promote interoperability and to provide redundancy to public safety telecommunications. We need to work together across disciplines and promote and use common nomenclatures before catastrophic events occur. We need more radio spectrum to communicate with each other and to utilize life-saving technologies. We need to plan wisely and utilize the valuable resources that exist in the Regional Planning Committees (RPCs) and the State Interoperability Executive Committees (SIECs).

In early February, Congress finally passed digital television (DTV) transition legislation in Congress' budget reconciliation bill, which was amended by the U.S. Senate at the end of last year, and was ultimately passed by the U.S. House of Representatives. The final bill sets February 17, 2009, as the date certain for completion of the DTV transition. "A key benefit of the 700 MHz band spectrum for public safety telecommunications is that it will allow for new and expanded multiagency communications systems to promote interoperability among first responders in the field," says Alan Caldwell, a member of NPSTC's Governing Board representing the International Association of Fire Chiefs (IAFC). "While there are many causes and solutions to the interoperability problem, in many cases the most effective long-term solution is to consolidate agencies on the same radio system, or at least on systems in compatible frequency bands. It will help ease congestion in the 800 MHz and other public safety bands, and it will allow public safety to access advanced technologies including wide area mobile data applications that can furnish important on-the-scene data for law enforcement officers, firefighters, and emergency medical personnel with high-speed data and high-resolution video and still images."

Prior to the passage of the bill, Harlin McEwen, Vice Chair of NPSTC, noted that there is virtually no new spectrum available in the bands currently utilized by public safety. "The new spectrum [at 700 MHz] is the only area for expansion. When one considers the new and evolving requirements for homeland security, the need for greater regionalism and interoperability, plus the need to keep up with new technologies to ensure safe and adequate daily operations," he said, "then the need for this new spectrum becomes apparent as the paramount communications issue."

We applaud Congress's action that will provide valuable spectrum and the possibility of new broadband applications to public safety.

NPSTC is a unique "organization of organizations" with a Governing Board made up of representatives from each of its member organizations. NPSTC serves as a standing forum for the exchange of ideas and information, and works to identify and promote methods for funding development of public safety communications systems. NPSTC also performs research, conducting

studies of public safety communications, and uses research to stay abreast of user needs. NPSTC communicates information on technology, research, and policy issues to the field through its website at *www.npstc.org* and through its quarterly newsletter, ***spectrum*** and its online publication, ***e-spectrum***, and informational panels at various public safety meetings.

NPSTC can respond vigorously and expeditiously to emerging public safety telecommunications issues or to older issues as changes develop in the wireless telecommunications landscape because of a structure that allows flexibility. There were changes, additions, and deletions in NPSTC's Committees and Working Groups in 2005. As issues are resolved and the tasks of the Working Group end, the Working Group may be dissolved. Conversely, as new issues arise, new Working Groups can be created by a Governing Board vote to focus on and research legislation, FCC filings, or education to the field.

During 2005, NPSTC responded to the needs of the Regional Planning Committees (RPCs) when the Governing Board formally approved a fourth Committee, the RPC Committee, to focus on the needs of the RPCs. Since its formation, NPSTC has been an advocate for the RPCs and has supported the attendance of five RPC representatives at the Council's quarterly meetings. In 2005, the Governing Board became a funding advocate to obtain funding to help support such RPC interests. The NPSTC RPC funding is provided by the National Institute of Justice (NIJ), through the Texas Sheriff's Office, and managed with assistance from the NPSTC RPC Committee.

During 2005, NPSTC responded to the needs of the State Interoperability Executive Committees (SIECs) by initiating an education and outreach plan to support SIECs and SIEC-like entities, particularly regarding the need to address regional interoperability issues and the need for a national interoperability portal.

In 2005, NPSTC welcomed its newest liaison member, the National Telecommunications and Information Administration (NTIA), the President's principal adviser on telecommunications and information policy issues. During 2005, NPSTC's Governing Board held four quarterly meetings across the nation, in Orlando,

NPSTC Is Working on These Public Safety Issues

Currently NPSTC is working on policies and issues surrounding the following important public safety wireless communications areas:

- Broadband in 700 MHz and 4.9 GHz
- Effective spectrum management and deployment
- Software Defined Radio (SDR) and Cognitive Radio (CR) technologies
- Narrowband technology transition
- VHF spectrum reconfiguration
- US/Canadian/Digital Television (DTV) Transition in 700 MHz
- Project MESA, Institute of Electrical and Electronic Engineers (IEEE) 802, DSRC, and TIA standards development for digital mobile broadband technologies
- Securing additional spectrum resources
- 800 MHz interference resolution and band reconfiguration
- State Interoperability Executive Committees (SIECs)
- 700 and 800 MHz Regional Planning Committees (RPCs)
- Broadband over Power Lines (BPL) interference
- International Telecommunications Union (ITU) activities
- Paging technologies
- Surveying equipment spectrum and technologies
- Communications issues along the southern border

Florida; San Antonio, Texas; Alexandria, Virginia; and Los Angeles, California. The Executive Committee held semi-annual meetings with the FCC in Washington, D.C., and met in Executive Session in Las Vegas, Nevada; Washington, D.C., and in New York, New York.

In 2006, NPSTC will be continuing to support these critical public safety communications issues, including a focus on the concept of deployable P25 trunking systems operating in the 12.5 kHz reserved 700 MHz channels; a proposal to realign the 700 band; the Association of American Railways' proposal to consolidate all its member's licenses in the UHF band into one nationwide license; modifications to the Emergency Broadcast System, now known as the Emergency Alerting System (EAS); the use of the 700 MHz spectrum to include both broadband and wideband allocations; and border issues with Mexico and Canada.

An Open Invitation: Include Your Voice in NPSTC's "Collective Voice"

Your voice can become part of the collective voice of public safety telecommunications when you become an active participant in the National Public Safety Telecommunication Council. NPSTC's ongoing dialogue on national public safety telecommunication issues affects your organization daily. NPSTC's Governing Board is made up of representatives of each of the 13 Member Organizations. Any official NPSTC recommendation or policy position requires a consensus among the representatives of the 13 Governing Board organizations. Depending on the specific issue, Governing Board representatives often have to get formal approval from their respective organizations. A consensus does not necessarily require unanimity.

NPSTC also maintains relationships with a number of Liaison Organizations, which consist of officially participating federal agencies and industry associations. Finally, the NPSTC community involves individuals who are At-Large Participants—any individuals or organizations that have an interest in public safety communications.

Anyone who is interested is welcome to become a NPSTC At-Large Participant

NPSTC actively seeks out the participation, expertise, and feedback of public safety and other individuals to be included among the many voices clamoring to be heard in ongoing discussions of communications technology, interoperability, spectrum, planning, and legislative issues. At-Large Participants can share their points of view in numerous ways. If your schedule or cost constraints preclude you from attending our quarterly meetings, you may participate in the meeting via an open toll-free teleconference line, or throughout the year on our active listservs and teleconferences.

Get your voice heard: become active in NPSTC today!

NPSTC At-Large Participants are critical to its consensus process. As NPSTC seeks to understand the complex technical and policy issues surrounding many of the public safety telecommunications issues that the Council faces, the lively debate of issues from the NPSTC community and the viewpoints expressed at its quarterly meetings and listserv discussions are very important in providing as broad a base of informed input possible. The voices of NPSTC participants shape public safety telecommunications, and we want you to have a voice in the community and the future of our profession. Join NPSTC and participate in the future of public safety communications.

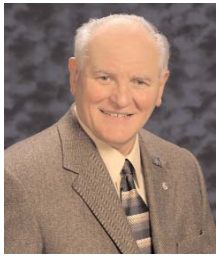
For more information, please contact us at *NPSTC@highlands-group.com* or call 866.807.4755. Subscribe to our Yahoo groups listserv at *NPSTC-PARTICIPANTS-subscribe@yahoogroups.com*.

NPSTC's FCC Filings

FCC Docket	NPSTC's Position
02-55	**800 MHz Reconfiguration** In a November 18, 2005, letter to the Chief of the FCC's Public Safety and Private Infrastructure Division of the Wireless Bureau, NPSTC presented its examination of the administration of the 800 MHz band in the context of the ongoing reconfiguration. NPSTC noted its agreement with the premise that the additional channels made available under the reconfiguration be awarded to agencies in most need and that the Regional Planning Committees can provide an equitable and fair platform to resolve competing requests in the initial assignment of these channels. NPSTC also stated that the frequency coordinators are in a unique position to provide technical expertise for these channels to be used effectively, to protect the licensee and other users. It suggested a structure by which the RPCs and frequency coordinator can work together. Letter to Michael Wilhelm, addressing the administration of the 800 MHz reconfiguration, WT Docket 02-55 (November 18, 2005).
96-86 and 05-157	**700 MHz** The FCC is examining the 700 MHz band structure to determine whether any changes should be made to promote broadband applications in the band. NPSTC has stated that any reexamination must be premised on maintaining the current structure established for narrowband voice channels and that the focus of any changes be directed to the wideband and reserve channel structure. In letters to the FCC, sent on February 6, 2006, and November 18, 2005, NPSTC presented its preliminary analysis. It noted the potential to structure three 1.25 MHz channels for broadband or wideband applications from current wideband designated channels, with the Regional Planning Committee's having a critical role in establishing the band structure and the uses within each region. NPSTC noted that while the FCC's examination is pending, the issue of whether to adopt a wideband standard for interoperability should be deferred. Letter to Michael Wilhelm regarding 700 MHz (November 18, 2005). NPSTC-APCO Joint Filing in WT Docket 05-157, Spectrum Needs of Emergency Responders, WT Docket 96-86, Spectrum Requirements through 2010 (September 12, 2005). Letter to Marlene Dortch, Secretary of the FCC addressing WT Dockets 03-185, 96-86 and 99-87 (September 12, 2005). NPSTC Comment on Seventh Notice of Proposed Rulemaking, WT Docket 96-86 (May 27, 2005).
99-87	**Promotion of Spectrum Efficient Technologies** In WT Docket 99-87, the FCC established rules requiring that agencies move to more efficient 12.5 kHz technology by January 13, 2013. NPSTC has noted to the Commission its concern regarding the interim

FCC Docket	NPSTC's Position
99-87	transition provisions of the rules that will preclude the replacement of equipment or the ability to expand an agency's operating area after January 2011. NPSTC urged the Commission to consider the difficulties and challenges such circumstances will impose on public safety. NPSTC has also noted that its analysis indicates that no mandate should be imposed to move to 6.25 kHz technology until its interoperability capability becomes clarified. FCC Docket WT 99-87 Filing - Promotion of Spectrum Efficient Technologies (September 12, 2005). FCC Docket WT 99-87 Letter to Ms. Dortch - Ex Parte Filing on Spectrum Efficiencies Technologies (September 12, 2005).
04-220 and 05-24	**Low Power Television** All digital low power television (LPTV) and TV translator stations will operate on a secondary, non-interfering basis with respect to primary services, including the commercial wireless and public safety services. The FCC has replaced the current contour protection methodology with the DTV interference prediction protocol. NPSTC's concerns relate not only to the responsibilities emanating from the LPTV application process but the protections accorded a public safety agency when it undertakes changes within the parameters of its authority. NPSTC has noted its concerns in this regard. Letters to Michael Wilhelm and to Donna Gregg, MB Docket 04-220 (September 12, 2005).
RM 11311	**ICOM Petition** NPSTC has stated its support of a petition filed by ICOM, Inc., to move certain 150 MHz frequencies to the Public Safety Radio Pool. These frequencies are Part 22 Public Mobile Radio Frequencies (18 Pairs and 4 unpaired frequencies) that were not sold at FCC auction. NPSTC noted that the 150 MHz band is an important resource for public safety communications and that VHF operations are in many circumstances the only means to conduct wireless communications for a range of agencies. In fact, 43 percent of public safety agencies use the band for core communications capability. Affording public safety agencies access to these channels will overcome the significant expense and time associated with the FCC waiver process. NPSTC did state that that the opportunities in the band may be limited. It is unlikely that any channels will be available in major metropolitan areas and that the presence of any incumbent paging operation on the frequencies may preclude public safety use. NPSTC continues to study their configuration recommendation.

Meet NPSTC's Chair, Vice Chairs, and Executive Director



Vincent R. Stile, Chair, National Public Safety Telecommunications Council, Director, Suffolk County, (New York) Police Communications (retired), has served in public safety for 40 years. Until 2005, Mr. Stile was the police radio communications director for the Suffolk County Police Department, the 14th largest department in the United States. Mr. Stile joined the department in 1965 and served as a police officer for 20 years. He was a dispatcher/call taker, then officer-in-charge of the police-radio technical service section until his promotion to communications director in 1985.

Mr. Stile was a member of the Automated Frequency Coordination (AFC) task force that developed the first in-house automated frequency coordination system. Mr. Stile is former president of the Association of Public Safety Communications Officials-International (APCO) and a member since 1969. Mr. Stile has served on the PSWAC, the Public Safety Wireless Network (PSWN), and the National Public Safety Planning Advisory Committee (NPSPAC). He was chairman of the Tri-State Regional Planning Update Committee, FCC Region 8, and was chair of the New York Metro Advisory Committee (NYMAC) for the past 14 years.

Harlin McEwen, Vice Chair, brings 47 years of experience as both an advocate for public safety telecommunications issues and as a career law enforcement officer and administrator. He participated in PSWAC, was a member of the Steering Committee of the NCC, and was a leader in creating NPSTC.

Chief McEwen started his career as a Patrol Officer in 1957. In 1972, he was promoted to Chief of Police, a position he held for 13 years. From 1969 through 1974, he served as Coordinator of the Tompkins County Mobile Radio District and supervised the installation of a new countywide law enforcement radio communications system. From 1985 until 1988, Chief McEwen served as Deputy Commissioner of the New York State Division of Criminal Justice Services and Director of the Bureau for Municipal Police. From 1988 through 1996, he served as Chief of Police for the City of Ithaca, NY. In 1996, Chief McEwen became a Deputy Assistant Director at the Federal Bureau of Investigation (FBI). Chief McEwen serves as Chairman of the International Association of Chiefs of Police (IACP) Communications Committee and as Communications Advisor to the Major Cities Police Chiefs Association, the National Sheriffs' Association, the Major County Sheriffs' Association, and as an advisor to the FBI, the National Institute of Justice, and the Department of Homeland Security.

Douglas M. Aiken, Vice Chair, brings 29 years of experience as both an advocate for public safety telecommunications issues and as an administrator in public safety telecommunications, from his service with the Manchester (New Hampshire) Fire Department to his current role as Chief of Lakes Region Mutual Fire Aid. Chief Aiken served on PSWAC, was a member of the steering committee of the NCC, and was instrumental in creating NPSTC. In his position as Chief of Lakes Region Mutual Fire Aid, a 37-community Fire, EMS, and HazMat agency covering over 1,500 square miles of central New Hampshire, he is responsible for the coordination of 37 fire and EMS agencies, the Central New Hampshire HazMat Team, and the operation of the central communications center. In addition, he serves as the chairman of the New Hampshire Enhanced 9-1-1 Commission. A member of the New Hampshire Air National Guard since 1969, he currently serves as a Colonel with Joint Force Headquarters – New Hampshire.

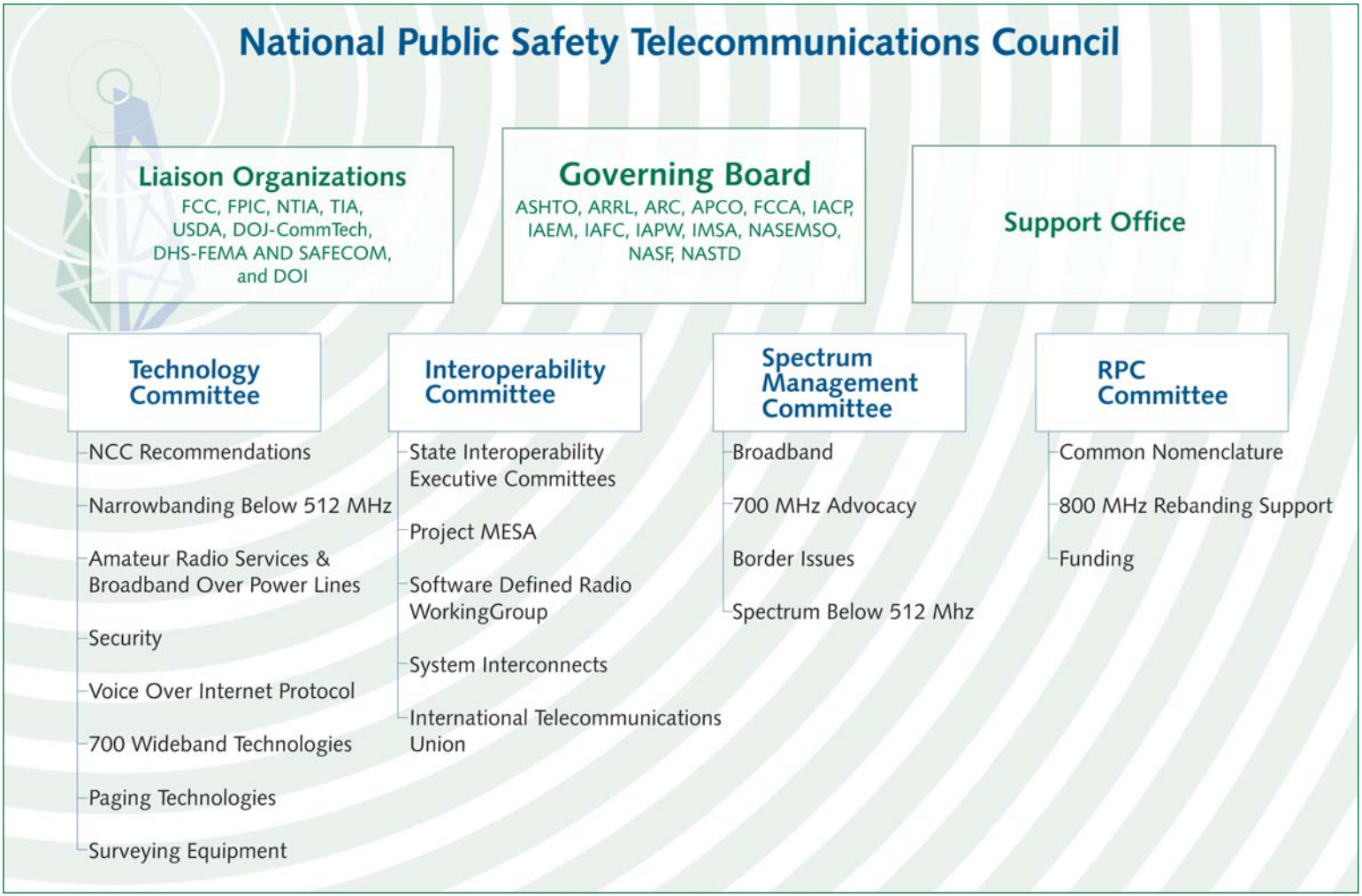
Chief Aiken is a former chairman of the board and current chair of the radio committee of the International Municipal Signal Association (IMSA), past president of the

Land Mobile Communications Council (LMCC), current chair of the International Association of Fire Chief's (IAFC) Communications Committee, a member of the National Advisory Committee of the Congressional Fire Service Institute, and a Fellow of the Radio Club of America.

Marilyn Ward, Executive Director, NPSTC, brings 33 years of experience as both an advocate for public safety telecommunications issues and as an administrator in public safety telecommunications, from her position as Manager of Communications for the City of Orlando (Florida) and part-time police officer in her early days in public safety, to her former role as Orange County (Florida) Public Safety Communications Manager. Ms. Ward served as the APCO Task Force Leader and on PSWAC, and was instrumental in creating NPSTC, the follow-on effort to provide a unified voice for public safety telecommunications needs. She is a Fellow in the Radio Club of America, was a steering committee member of the ~~National Coordination Committee (~~NCC~~)~~, former president of APCO Florida Chapter and APCO International, and NPSTC's Founding Chair.

As Communications Manager, Ms. Ward was involved with communications issues on every level—local, state, and federal. She was Chair of the Florida Governor's Statewide Regional Domestic Security Task Force Interoperability, holds a degree in Business and Management, and has received many public safety-related certificates in her career.

Pictured are (from L) Harlin McEwen, Vice Chair; Vincent Stile, Chair; and Douglas M. Aiken, Vice Chair


National Public Safety Telecommunications Council
Liaison Organizations
FCC, FPIC, NTIA, TIA, USDA, DOJ-CommTech, DHS-FEMA AND SAFECOM, and DOI
Governing Board
ASHTO, ARRL, ARC, APCO, FCCA, IACP, IAEM, IAFC, IAPW, IMSA, NASEMSO, NASF, NASTD
Support Office
Technology Committee
NCC Recommendations
Narrowbanding Below 512 MHz
Amateur Radio Services & Broadband Over Power Lines
Security
Voice Over Internet Protocol
700 Wideband Technologies
Paging Technologies
Surveying Equipment
Interoperability Committee
State Interoperability Executive Committees
Project MESA
Software Defined Radio WorkingGroup
System Interconnects
International Telecommunications Union
Spectrum Management Committee
Broadband
700 MHz Advocacy
Border Issues
Spectrum Below 512 Mhz
RPC Committee
Common Nomenclature
800 MHz Rebanding Support
Funding

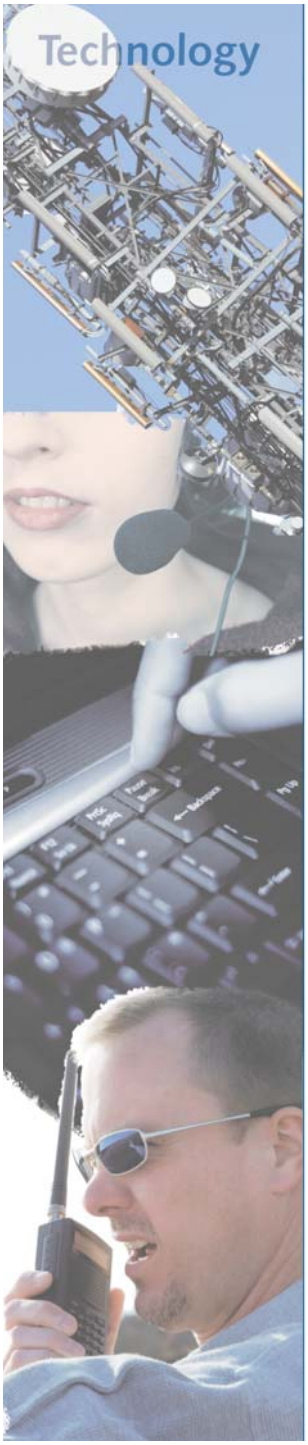
NPSTC Committees and Working Groups

NPSTC's Executive Committee comprises a Chair, two Vice Chairs, and the four Committee Chairs, representing the Technology, Spectrum Management, Interoperability, and the Regional Planning Committees. Each Committee comprises a number of Working Groups. The officers must be employees of a public safety or public service organization as defined in the *PSWAC Final Report* or a recognized organization that represents these entities.

The Committees, generally through their Working Groups, are responsible for conducting research, writing position papers, and giving presentations at various meetings and conferences at the request of the Governing Board. The Working Groups interact extensively with one another and the member organizations via conference calls, listservs, and emails, but the face-to-face quarterly Governing Board and Committee meetings are critical to achieve group consensus. The Working Groups provide research, by reaching out to subject matter experts, and develop positions for the Committee Chairs, who in turn forward those positions with their comments to the Governing Board for approval.

NPSTC Committees—Technology, Spectrum Management, Regional Planning Committees (RPC), and Interoperability Committees work together to successfully achieve the mutual goals of all four Committees. Common goals include the potential review and update of the *PSWAC Final Report*, the provision of NPSTC and practitioner input to an updated version of the SAFECOM Statement of Requirements, and the monitoring of activities at the local, state, and federal level that promote interoperability, including federal grant activities at DOJ's Office of Community Oriented Policing Services (COPS) and Office of Grants and Training (G&T), formerly the DHS's Office for Domestic Preparedness (ODP).

NPSTC added six new Working Groups in 2005—three to the Technology Committee, focusing on Paging Technologies, Voice over Internet Protocol (VoIP), and Surveying Equipment, and three to the newly formed RPC Committee, focused on RPC Funding, RPC Common Nomenclature, and RPC Rebanding Support. During 2005, the need for the RPC Working Group, formerly under the Spectrum Committee, disappeared with the creation of a fourth Committee and so did the Working Group. The TIA TR-8 Working Group merged with the Broadband Working Group due to the duplication of both the scope of work and volunteers in the two groups.



Technology Committee

The NPSTC Technology Committee was formed to ensure that the public safety and public service communities maximize their communications capabilities by facilitating the best possible utilization of current and future technologies. The Committee helps these communities to maintain a high degree of awareness of technological development, deployment, standardization, and regulation.

Glen Nash, Chair, is a Senior Telecommunications Engineer with the State of California. For the past 20 years, he has been responsible for management of the state's spectrum resources, frequency coordination, and station licensing and he has represented the state on regulatory matters related to radio spectrum. He served as the Chair of the Technology Subcommittee of the NCC from 1999-2003, and also served on the National Task Force for Interoperability, NPSPAC, Project 25, Project MESA, the 800 MHz Regional Planning Committees for Regions 5 and 6, and the Emergency Broadcast System Advisory Committee. Mr. Nash has over 32 years experience in the design, installation, and maintenance of land mobile radio and fixed microwave communications systems used by state agencies, and is a past-president of APCO.

Sean O'Hara, Vice Chair, has been deeply involved with public safety communications for over 8 years, and serves as a Lead Communications Engineer for New York's Statewide Wireless Network. He works actively with both the FCC and international regulatory bodies, and works within numerous standards development organizations such as IEEE 802.11 802.16, 802.18, 802.22, DSRC/IEEE-WAVE, as Co-Chair of the Software Defined Radio Forum (SDRF) Cognitive Radio Technologies Working Group, the Telecommunication Industry Association (TIA) TR-8 Committees, and is a member of the APCO Spectrum Management Committee. Mr. O'Hara led the development of the national 700 MHz allotments for NPSTC. The entire allotment set was optimized on a national scale, and represented the largest U.S. public safety spectrum management and frequency assignment effort ever undertaken.

During 2005, NPSTC submitted comments and a Petition for Reconsideration (PFR) in response to the FCC's Memorandum Opinion and Order (MO&O) establishing new must implement dates for narrowbanding below 512 MHz. The target dates are: January 2013 for all systems, January 2011 for all changes to existing systems, and January 2011 for manufacture/import of radios. In the PFR, NPSTC commended the FCC on the adoption of the January 1, 2013, date, but urged that the January 1, 2011, date be eliminated for the acceptance of applications for new stations or for applications to expand the contours of existing stations, and for manufacturing or importing equipment to provide a continued supply of equipment compatible with existing systems.

NPSTC has ensured that public safety has a strong voice in the development of new technologies, including Voice over Internet Protocol (VoIP). These technologies are vitally important for public safety, both to enhance spectrum efficiency and utilization, and to break down barriers to interoperability.

In 2005, the Technology Committee supported eight Working Groups.

⊙The NCC Recommendations Working Group works to ensure that the body of work and recommendations generated by the NCC is leveraged and properly acted upon and/or addressed. The immediate goals of this group are to: Implement NCC's follow-on actions and plans; advocate timely FCC action on NCC recommendations; provide documentation of NPSTC's positions in related regulatory matters and filings; and act in the spirit or intent of NCC recommendations, including updating or initiating recommendations, such as standardized nomenclature and major/minor plan amendment definitions.

⊙The Narrowbanding Below 512 MHz Working Group works to facilitate and ease public safety transition to narrowband operations below 512 MHz.

⊙The Amateur Radio Service and Broadband Over Power Line Technology Working Group acts as a liaison with the Amateur Radio Service community. The immediate goals of this group are to: Provide documentation of NPSTC's positions in related regulatory matters and filings; assist in developing the potential interference impacts of technologies such as Broadband over Power Line (BPL); work with public safety to identify new joint allocations that can benefit both communities, and advance mutual goals in support of Public Protection and Disaster Relief (PPDF) operations.

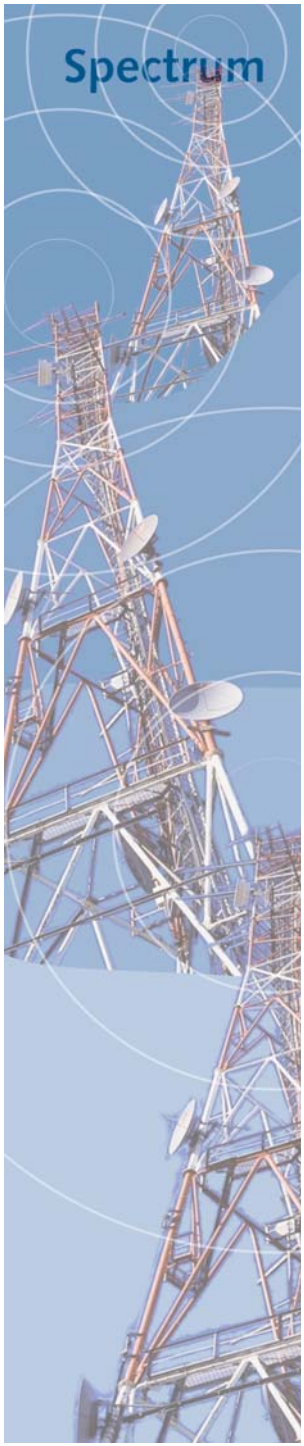
⊙The Security Working Group focuses on two primary areas of security: Providing short-term security guidance, in the form of white papers or pamphlets, on issues relevant in the near term for public safety agencies' implementation of wireless networking, and providing a long-term security architecture that will address issues, such as authentication, authorization, integrity, privacy, attack detection and prevention, and monitoring.

⊙The Voice over Internet Protocol (VoIP) Working Group is working to answer technical questions and to educate the public safety community about the realities of VoIP over RF systems.

⊙The 700 Wideband Technology Working Group has been working to assess the capabilities of wideband technologies below 1 GHz and developing guidelines for successful deployments of these technologies as well as working with interested Regional Planning Committees (RPCs) to optimize initial deployments of these technologies over entire regions.

⊙The Paging Technologies Working Group is working to ensure that paging capabilities can be effectively supported within public safety communications technologies, maintaining a watch on paging technologies and product obsolescence, and identifying appropriate spectrum resources for operation of public safety-owned paging systems.

⊙The Surveying Technologies Working Group is identifying appropriate spectrum resources for operation of public safety or public service surveying and geolocation systems.



Spectrum Management Committee

The NPSTC Spectrum Management Committee focuses on regulatory and technical issues regarding the availability, effectiveness, and usability of public safety spectrum on a nationwide basis. The Spectrum Management Committee works, in conjunction with the NPSTC Governing Board, to provide NPSTC's perspective on outstanding public safety issues to the FCC. In 2005, the Spectrum Management Committee supported four Working Groups, which individually address issues impacting the management of spectrum within public safety.

David Buchanan, Chair, is retired from his position as Network Services Supervisor for the County of San Bernardino, California, where he was responsible for management and future upgrades of an 800 MHz integrated trunked/conventional radio system. This system supports over 15,000 units, serving 150 different agencies and departments in the 20,000-square mile county. He is currently contracted with Bearing Point as a representative of the 800 MHz Transition Authority working on the rebanding process nationwide. He is a life member of APCO and is a past Chairman of APCO's Spectrum Management Committee. He also serves as the Southern California Local Frequency Advisor for APCO. Mr. Buchanan is the Chairperson of the Southern California Region 5, 700 MHz Planning Committee. Mr. Buchanan served as President of the California Public Safety Radio Association for 2002.

Stuart Overby, Vice Chair, has over 30 years of experience in spectrum management and communications. Since joining Motorola in 1986, he has taken a leadership role in spectrum allocations for public safety and private mobile radio systems, personal communications services, digital television, and unlicensed consumer systems. Prior to joining Motorola, Mr. Overby was employed by the FCC for 12 years, where his career spanned areas of mobile spectrum and regulatory policy, field enforcement, and broadcast licensing. Mr. Overby has also helped design and deliver spectrum and regulatory management training programs conducted in Asia, Eastern Europe, Latin America, North America, and South Africa.

The Broadband Working Group works within NPSTC to address broadband opportunities within the public safety community and provides NPSTC with information on public safety broadband data opportunities and technologies within FCC-assigned public safety spectrum as well as information on existing commercial broadband data products. The TIA TR8.8 Working Group merged with Broadband in late 2005, working to clarify the needs of the public safety broadband users and to analyze findings and identify conclusions reached in several broadband public safety testbed initiatives underway across the U.S.

Issues surrounding broadband, particularly focused on data interoperability standards, have engendered vigorous discussion and careful study this year. Because the issues are so complex, in the second half of 2005, NPSTC's Governing Board created an ad hoc Broadband Task Force to study the issues and to seek input from an expanded public safety audience. During 2005, there was vigorous discussion and adoption of action items on data issues in the 4.9 GHz and 700 MHz bands, including a 4.9 GHz standard, a 700 MHz wideband data standard, and broadband data in the 700 MHz band.

4.9 GHz Standard: Initiated by a request from the Telecommunications Industry Association (TIA), NPSTC debated the issue of an interim 4.9 GHz standard developed by TIA to enable public safety to access broadband data applications sooner rather than later. The Governing Board voted to respond to TIA, asking them to quickly develop a channel plan and to provide an analysis of the two leading Commercial off the Shelf (COTS) protocol contenders, describing the basic differences, what they do and do not do, and which might be backwards compatible. In 2006, NPSTC will look at the recommendation to set aside 10 MHz for an interoperability channel, assemble information, and develop an educational program for users.

SAM Standard: NPTSC is on record supporting the adoption of the TIA 902 or Scalable Adaptive Modulation (SAM) interoperability standard for wideband 700 MHz 50 kHz interoperability channels, but it has been proposed that NPSTC support a data technology that is in the public domain. The Governing Board voted to file ex parte comments with the FCC stating that NPSTC recognizes a need in public safety for broadband channels and that the FCC should examine the current band structure and alternatives that would promote this goal. This would include analyzing whether the wideband channels and the reserve channels in the middle of the band can be restructured to provide expanded broadband capability to public safety. The Regional Planning Committees would retain the flexibility to use either wideband or broadband channels. NPSTC recommended that the FCC issue a Further Notice of Proposed Rulemaking (FNPRM) to assess the benefits of the current structure and any potential for allowing broadband operations in what is now wideband spectrum.

700 Broadband: NPSTC's Governing Board was also asked to address the issues surrounding 700 broadband. In the long term, NPTSC will continue to seek more spectrum for this need; however, the prospect of public safety quickly acquiring any additional spectrum below 1 GHz is low. The current allocation at 700 MHz can be used to support some broadband channels. There is no support to change the narrowband channel plan to support broadband data channels; therefore, any changes to the current channel plan must protect narrowband channels from interference. Restructuring the channel plan must support all public safety needs for wideband and broadband if changes are made. NPSTC supported an FCC FNPRM to address broadband in the current wideband 700 MHz channels. The Governing Board voted to ask its Spectrum Committee to develop a position for further discussion in 2006, and has urged the FCC to defer action until comments are received and the 700 wideband/broadband structure is established.

NPSTC monitored and continues to monitor ongoing public safety broadband demonstration projects, including a 4.9 GHz demonstration in Los Angeles County, California; and an ongoing 4.9/5.9 project in Pinellas County, Florida. NPSTC is also actively examining broadband applications and potential channel plans.

The 700 MHz Advocacy Working Group works on outstanding issues resulting from the FCC's 700 MHz proceeding (Docket 96-86) and makes recommendations to the NPSTC Governing Board on 700 MHz issues that are

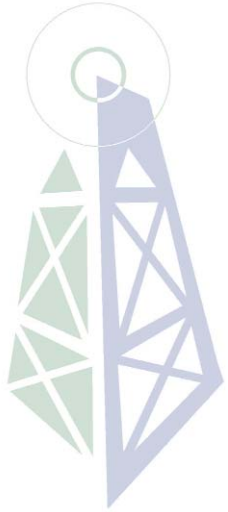
critical to the first responder community and still unresolved within the FCC. This group also drafts comments for NPSTC to file with the FCC on outstanding 700 MHz issues, within the currently allocated 24 MHz and beyond.

During 2005, NPSTC continued to strongly advocate a date-certain clearing in 700 MHz. On November 3, 2005, the Senate adopted its Budget Bill, which included a provision for an April 7, 2009, date-certain clearing, and also provides $1 billion in funding for public safety, with the potential for more if auction proceeds exceed $10 billion, and $3 billion to help purchase digital to analog set-top boxes for over-air viewers. The House adopted its companion Budget Bill on November 18, with a December 31, 2008, date-certain clearing, which provides $500 million in funding for public safety and $990 million to help purchase digital to analog set-top boxes. The final bill, passed in February as part of the budget reconciliation bill, sets February 17, 2009, as the date certain for completion of the DTV transition.

The Governing Board requested a white paper from the Committee to address the 60-69 LPTV Incumbency issue and to educate the RPCs and state licensees. On the issue of 700 MHz station ID and secondary fixed operations rules, the Board approved advocating changes in the 700 rules to make them compatible with 800 rules. NPSTC filed comments May 2; the FCC issued a blanket waiver on October 21 to allow a digital base station ID at 700 MHz.

The Border Issues Working Group addresses issues that affect border states in the initial implementation of 700 MHz and continued development of 800 MHz as well as spectrum under 512 MHz. This group will be a valuable resource to the 800 MHz rebanding initiative, as it consists of subject matter experts familiar with spectrum allocations along both of the U.S. international borders and with the recent history of the allocations along border areas.

The VHF Rebanding Working Group addresses VHF [Very High Frequency] public safety spectrum and addresses ways in which it could be better utilized. The State of Utah has identified a plan that enables more efficient use of the band by developing structure and order within the VHF band. This is a critical NPSTC Working Group because the majority of the public safety agencies across the country currently utilize the VHF high band portion of the spectrum (150 MHz) and the ad hoc coordination of VHF high band channels over decades has led to ineffective use of the band due to the lack of channel standardization and uniformity.



Interoperability Committee

The NPSTC Interoperability Committee was formed to ensure that the public safety and public service communities maximize their interoperability effectiveness by promoting the concepts of governance, standard operating procedures, technology, training/exercises, and usage described in the SAFECOM Interoperability Continuum.

John Powell, Chair, has over 25 years of law enforcement experience at both the municipal and state levels as a police officer and supervisor for two San Francisco area agencies. During his career, Mr. Powell implemented and/or managed several major projects including a statewide trunked radio system and an E-911 Computer Aided Dispatch center for the University of California. He has served on numerous local, state, and national committees, including PSWAC, and as chair of the Interoperability Subcommittee of the NCC. He is the government representative to the Board of Directors at the Software Defined Radio Forum, a member of the Executive Committee of Department of Homeland Security (DHS's) Project SAFECOM, and the Project 25 Steering Committee. Professional associations include membership on IACP's Law Enforcement Information Management Section and the Communications and Technology Committee, where he serves as an IACP representative to NPSTC. He is a life member and International Past President of APCO, a Fellow of the Radio Club of America, and a member of IEEE.

Ralph Haller, Vice Chair, brings 40 years of experience in the communications industry, 25 with the FCC. Mr. Haller held numerous positions with the FCC and was the approving official for the original 55 NPSPAC Regional Plans. He wrote the charter for the more recent PSWAC and initiated the meetings. Mr. Haller's areas of expertise include broadcasting, cable television, human radio frequency exposure, and land mobile communications systems. Mr. Haller is an electronics engineer and currently, in addition to working with the Forestry Conservations Communications Association (FCCA), is a land mobile consultant with Fox Ridge Communications, Inc. Mr. Haller is a fellow in the Radio Club of America and a member of the IEEE. He is also a member of the Board of Directors of the American Mobile Telecommunications Association.

NPSTC fully participates in the important development of public safety telecommunication standards. NPSTC's members provide engineering and operational feedback to the DHS's SAFECOM Program's ongoing development of the Statement of Requirements (SoR), work with TIA on standards development, work on Project 25/Project 34 standards development, and participate in the international efforts of Project MESA and the International Telecommunications Union (ITU).

NPSTC has ensured that public safety has a strong voice in the development of new technologies including Software Defined Radio (SDR) and Cognitive Radio (CR). These technologies are vitally important for public safety, both to enhance spectrum effi-

ciency and utilization, and to break down barriers to interoperability. NPSTC representatives serve in leadership roles in SDRF.

The Interoperability Committee supported five Working Groups in 2005.

The SIEC Working Group has developed strategies to initiate and maintain an interoperable dialogue between state SIECs and national planners seeking to identify and address national interoperability issues. The SIEC Working Group is working to identify the "legitimate" SIEC-like entity in each state and gain concurrence for the NCC's recommendation that SIECs be responsible for all interoperability spectrum planning in their area. In 2006, in conjunction with the SAFECOM Program, this Working Group will establish a program to further the "street-level" interoperability planning goals of NPSTC and SAFECOM.

NPSTC will also work to provide a common national SIEC database structure to store planning documents and system information, and support SAFECOM's Interoperability Portal project; assist the state-like entities to formally establish SIECs; and develop and promote model state interoperability plans and collaborative processes.

The Project MESA Working Group works closely with the TIA/European Telecommunications Standards Institute (ETSI) Project MESA organization, an international partnership producing globally applicable technical specifications for digital mobile broadband technology, aimed initially at the sectors of public safety and disaster response. The focus of this group is to: Provide NPSTC representation and participation within the MESA process; assist in the development and analysis of global broadband public safety communications scenarios; and ensure that MESA meets and properly reflects public safety's requirements for deployable broadband technologies.

The Software Defined Radio Working Group focuses on facilitating the development and utilization of Software Defined Radio (SDR) technologies for the support of public safety communications and operations. The activities of this group are to provide NPSTC representation and participation within the SDRF process; provide documentation of NPSTC's positions in related regulatory matters and filings; assist in the development and analysis of public safety communications scenarios and in identifying the benefits and concerns related to the use of SDR-based technologies to support public safety operations.

The Working Group also ensures that the work of the SDR Forum (SDRF) meets and properly reflects public safety's requirements for deployable SDR-based technologies , and actively contributes within SDRF activities and working groups including the SDRF Public Safety Special Interest Group (PSIG) activities and the SDRF Cognitive Radio/Spectrum Sharing Working Group.

The System Interconnect Working Group focuses on facilitating the licensing and deployment of technologies utilizing cross-banding and interconnection techniques to enable public safety interoperability. The immediate objective of this group was to generate a white paper that will assist public safety entities to license interconnect devices, which was accomplished in 2005.

The International Telecommunications Union Working Group monitors the international regulatory activities of the International Telecommunications Union.

Regional Planning Committees (RPC) Committee

The NPSTC Regional Planning Committees (RPC) Committee was created in the second half of 2005 to meet the specialized needs of the RPC community. The goals of the NPSTC RPC Committee are to: Solicit RPC's input on a needs analysis and get their perspective on issues that concern them; to establish an open dialogue with RPCs for national support for a "Common Nomenclature" to improve regional and wide-area interoperability; to promote policy and procedures for RPC funding reimbursements and for proposed RPC support funding; to establish interest in participation in NPSTC meetings; and to establish ways and means for successful outreach of information to RPCs (email, Web Bulletin Board, Webinars, etc.).

Richard Reynolds, Chair, brings 31 years of experience as both an advocate and administrator for public safety telecommunications, from his position as Acting Division Director for Delaware's Division of Communications in 1986 to his current role as Telecommunications Technologist for the Delaware Department of Technology and Information. As Communications Manager in the early 90s, Mr. Reynolds served as Project Manager for the design, purchase, and build out of Delaware's first Digital Trunked Radio System in the newly acquired NPSPAC band of 800 MHz spectrum. Mr. Reynolds serves as Chairman on the Region 28 700 and 800 MHz Regional Planning Committee and was a task force member in creating the guidelines for the NPSPAC R&O 87-112. Mr. Reynolds is a senior member and former chapter president of the Mid-Eastern Chapter of the APCO, and serves on the APCO Frequency Coordination Advisory Committee, representing the Eastern Region, and as APCO Frequency Advisor for the State of Delaware since 1986.

Ronald Mayworm, Vice Chair, is the Radio System Manager for the City of Bryan, Texas, following 11 years as the Wireless Systems Manager for the City of College Station, Texas. In these positions he has designed, implemented, and maintained both trunked and conventional radio systems, and paging, SCADA, broadband, and mobile data systems. As a volunteer firefighter/EMT for 10 years, a search and rescue team member for 6 years, and a police dispatcher for more than a year, Mr. Mayworm also possesses a comprehensive user's perspective of public safety communications. Mr. Mayworm has been Chairman of Region 49's 821 MHz Planning and Review Committee for the last 13 years, serves as the Region's 700 MHz committee chairman, and actively participated in the NCC.

During 2005, NPSTC responded to the needs of the RPCs when the Governing Board formally approved a fourth Committee, the RPC Committee, to focus on the needs of the RPCs. NPSTC is a strong advocate for the interests of the RPCs in FCC proceedings

and related matters and has always encouraged the RPCs to bring individual or collective concerns to the Governing Board.

NPSTC recognized that the RPCs have unique needs that require a focused approach and may require coordinated meetings of RPC representatives to discuss mutual issues and concerns. In 2005, the Governing Board was an advocate for funding to help support such RPC interests, encourage participation in NPSTC meetings, and to assist in the development of their 700 MHz regional plans. The NPSTC RPC funding is provided by the National Institute of Justice (NIJ), through the Texas Sheriff's Office, managed with assistance from the NPSTC Regional Planning Committee. A budget has been developed to ensure broad support for as many RPCs as possible. There are limits to individual reimbursements; however, every possible accommodation will be made for active RPCs. Pre-approved reimbursements include:

- Travel to 700 MHz planning meetings and NPSTC related meetings.
- Miscellaneous expenses that will support the coordination of each region's 700 MHz frequency plan.
- Participation in NPSTC regional meetings and the NPSTC quarterly meetings.

The RPC Committee comprises three new Working Groups:

The **RPC Funding Working Group** promotes policy and procedures for RPC funding reimbursements and for proposed RPC support funding.

The **RPC Common Nomenclature Group** promotes support for the RPCs to adopt a common nomenclature concept on a national level.

The **RPC Rebanding Support Working Group** is developing a mechanism to bring together users within the same 800 MHz rebanding wave and phase level to promote a constructive exchange of information, and to investigate hosting a common database of contacts.

The National Public Safety Telecommunication Council is supported through funding provided by the Department of Homeland Security, SAFECOM Program.

NPSTC's Support Office, operated by Highlands Consulting GroupLLC, provides administrative, facilitation, decision support, outreach, and communications support to the Governing Board and its Technical Committees and Working Groups.

Funding for NPSTC's Regional Planning Committee Assistance Program is provided by the National Institute of Justice, CommTech Program.

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National Public Safety Telecommunications Council - NPSTC

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