

# MBIE 5 Year Spectrum Outlook 2022-2026

Response from the Public Safety Radio Frequency Management Group

The Public Safety Radio Frequency Management Group (PSRFMG) was formed to provide oversight and management of the Emergency Services Bands of Radio Frequencies. As at 2022 these are allocated as:

|          |               |                                 |
|----------|---------------|---------------------------------|
| ESA Band | 75 – 80 MHz   | (Analogue FM Only)              |
| ESB Band | 138 – 144 MHz | (Analogue FM, APCO P25 and DMR) |
| ESC Band | 496 – 502 MHz | (Analogue FM, APCO P25 and DMR) |

The PSRFMG membership is made up of representatives from NZ Police, Ambulance NZ, Fire and Emergency NZ (FENZ), NZ Defence Force, National Emergency Management Agency (NEMA), Department of Conservation and NZ Customs.

The Emergency Services collectively need the assurance of adequate dedicated radio spectrum to enable day to day operations to provide for safety of life and protection of property.

In the next few years, PSRFMG will be working with NGCC and PSN to replace the current analogue and digital LMR networks in use by NZ Police and FENZ with a trunked digital (APCO P25 Phase 2) network. This network will support the Public Protection and Disaster Recovery (PPDR) functions of NZ Police, Ambulance NZ and FENZ. The PSN network represents upgrades in functionality, spectrum efficiency and standardisation with other PPDR agencies.

The PSN trunked network will require significant spectrum to be implemented, and it is expected that much of this will come from existing allocations within ESB and ESC bands. However, these bands have limited capacity and a proportion of the channels are allocated to services that will not or cannot be migrated to PSN. Such services include FENZ incident ground operations and portable repeaters, Search and Rescue portable repeaters (managed by NZ Police), Department of Conservation repeater networks, Defence Force communications, and MCDEM operations.

At the very least, implementation of the PSN will bring pressure on ESB and ESC channel allocations and may require additional spectrum or a channel/band re-plan to be able to more effectively utilise the spectrum allocated.

As technology changes, the PPDR agencies collectively need to be able to take up the advantages of new technology and innovation, sometimes as a commercial service, and sometimes using dedicated spectrum appropriate to the technology. This in turn requires a mechanism for reserving appropriate amounts of spectrum as new allocations and uses are determined. PSRFMG wishes to discuss with MBIE how this could be accomplished, recognising that PPDR agencies within New Zealand are small compared to most commercial markets, but provide critical services to the public. As many of the PSRFMG agencies regularly deploy personnel to our Pacific neighbours PSRFMG, a further consideration to discuss is the spectrum band allocations being developed at the ITU level for international PPDR harmonisation.

It should also be noted that PPDR agencies tend to be conservative when uplifting new technologies, leading to situations where spectrum may have already been all commercially allocated before PPDR agencies can provide a substantive 'business use case'. The conservative approach is driven by the need to develop confidence in any new technologies' ability to improve PPDR activities without

compromising other requirements such as resilience. The confidence is usually provided by successful commercial developments; however, this can lead to the situation where developments that would enhance PPDR activities become available, but there is little or no suitable spectrum remaining for deployment to PPDR agencies and for where a commercial model may not be appropriate.

PSRFMG wishes to discuss with MBIE ways that spectrum could be reserved during initial commercial allocations and band planning where it is likely that a new technology will provide enhancements to PPDR operations.

Future developments likely to impact or provide opportunities for enhancing PPDR operations include 5G, IoT and LTE services. PSN have included on their longer-term planning cellular (including LTE and 5G technologies) services including Cell on Wheels (CoW), and broadband applications. Whilst some of these services could be carried on commercial networks, some of this will require dedicated spectrum.

In respect of the RSM outlook work plan, PSRFMG have specific interests in the spectrum review and re-planning for 600MHz, and allocation of spectrum at 1800MHz for PPDR development.

As noted earlier, increasing pressure in ESB and ESC bands brings a need to look at how this could be managed and/or additional (appropriate) spectrum might be allocated.

Interference management is also of concern to PSRFMG because of the impact it causes to PPDR communications and equipment. PSRFMG supports the outlook workplan objectives to improve management of interference.

The PSRFMG has been given the responsibility to oversee the ES spectrum bands and to advocate for spectrum support to the member NZ PPDR agencies. Although the NZ PPDR community is small, the functions the agencies provide are critical to the safety of life of New Zealanders and the protection of their property, with regular assistance provided to our Pacific neighbours when requested. These agencies require appropriate spectrum support to be able to carry out these tasks effectively and safely, and the PSRFMG looks forward to engaging with MBIE on continuing and improving the current allocations, along with creating innovative ways to bring in new technologies, spectrum and management techniques.