The U.S. Department of Transportation

V2X FOR TRANSPORTATION SAFETY

Volpe National Transportation Systems Center

U.S. Department of Transportation

Connected Vehicle - Focus on Safety

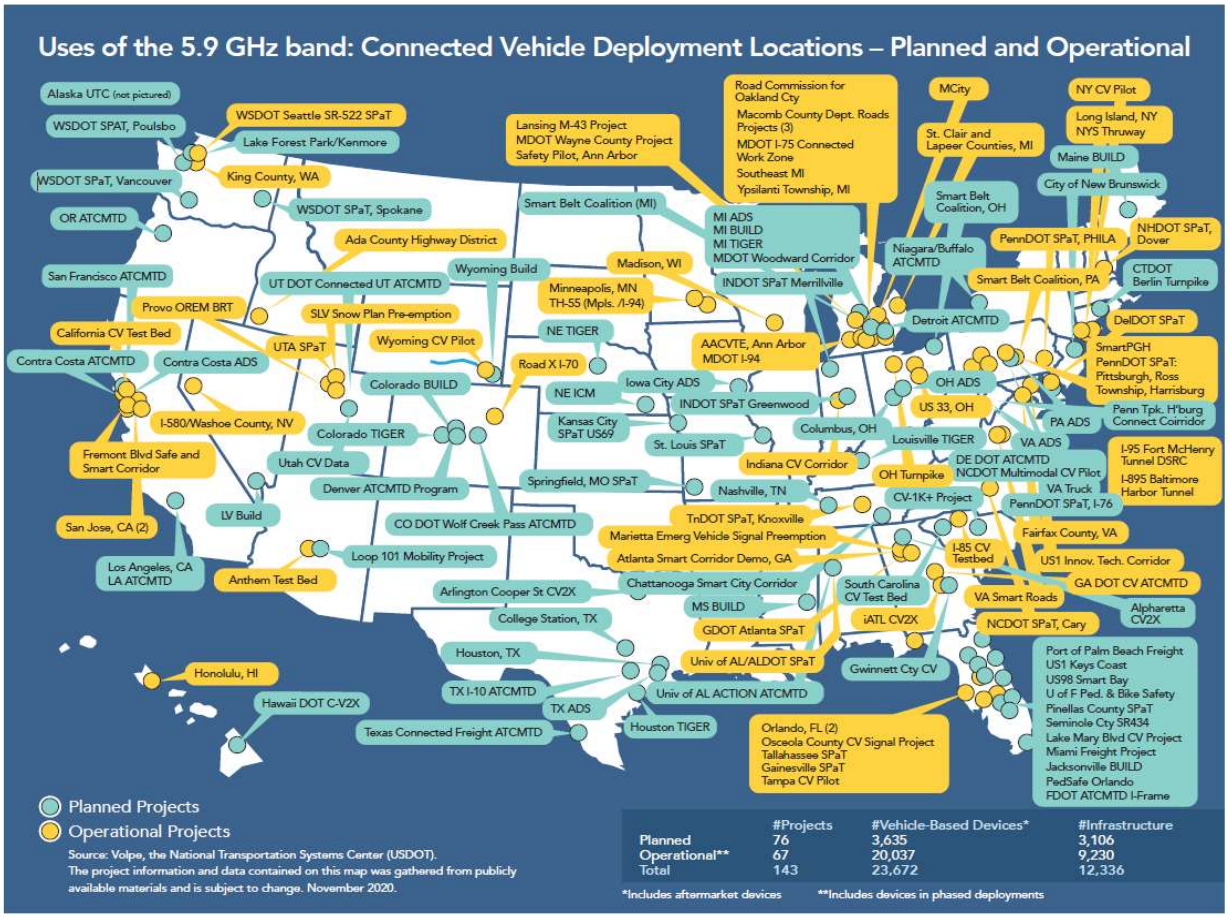
Goal: Achieve a significant reduction in traffic fatalities and serious injuries on all public roads*

Example Objectives*:

- Reduce crashes due to driver errors and limitations
- Reduce crashes due to unexpected congestion
- Reduce secondary crashes
- Reduce the total number of fatalities and severe injuries

* http://www.arc-it.net/html/servicepackages/sp7.html#tab-8

V2X is being deployed by State and local governments throughout the United States



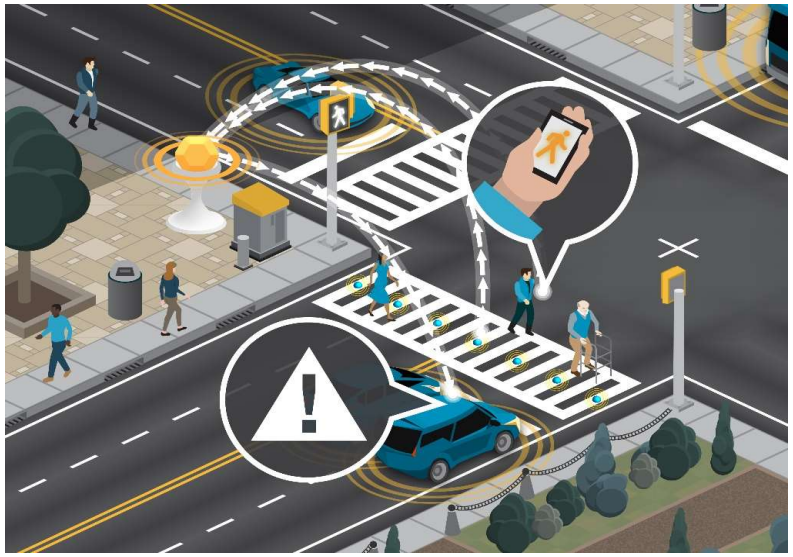
There are currently **143 planned or operational connected vehicle deployment locations in the U.S.,** all of which use the Safety Band.

More than 18,000 vehicles are deployed with aftermarket V2X communications devices.

Over 6,000 infrastructure V2X devices have been installed at the roadside in **25 states.**

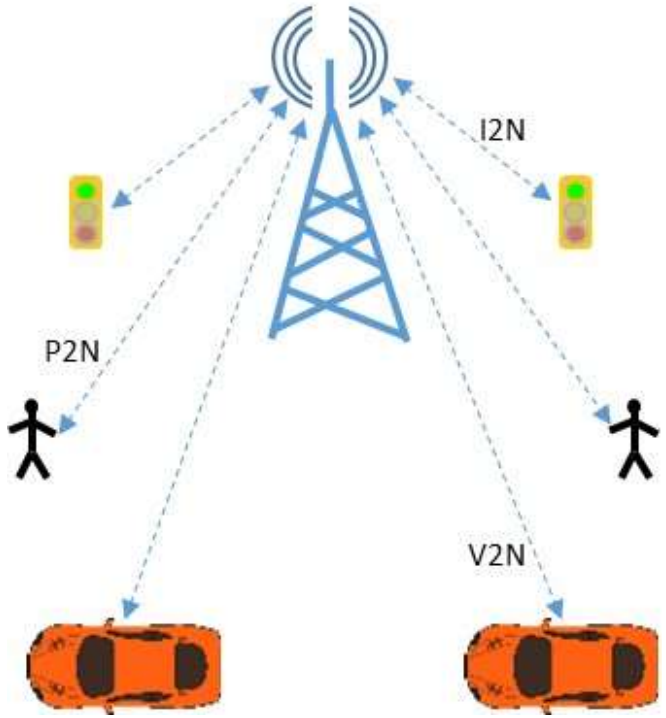
What is Direct V2X ?

- Direct communications between devices (no cellular network needed)
- Vehicles can communicate directly:
  - with each other (vehicle-to-vehicle, V2V)
  - with roadside infrastructure— (vehicle-to-infrastructure, V2I)
  - and with portable devices such as those used by pedestrians (vehicle-to-pedestrian, V2P)
- ITU-R Working Party 5A prepares reports and recommendations on direct V2X



What is Cellular Network V2X ?

- Communications with server based applications, for example:
  - Ride sharing applications
  - Internet navigation applications
  - Edge computing
- Indirect communications between devices (through cellular network – e.g., P2N2V)
- Direct communications between devices (managed by cellular network)
- ITU-R Working Party 5D prepares reports and recommendations on cellular network V2X



Direct V2X for V2V Safety Communications

- Current deployments use direct V2X for V2V safety communications, due to:
  - Over two decades of research, development and testing
  - Dedicated spectrum
  - Low latency inherent in broadcast mode of operation
  - Interoperability by design
  - Privacy / non-trackability by design
  - No cellular network subscription or coverage required

For More Information

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Visit the US DOT Safety Band website:

www.transportation.gov/content/safety-band