

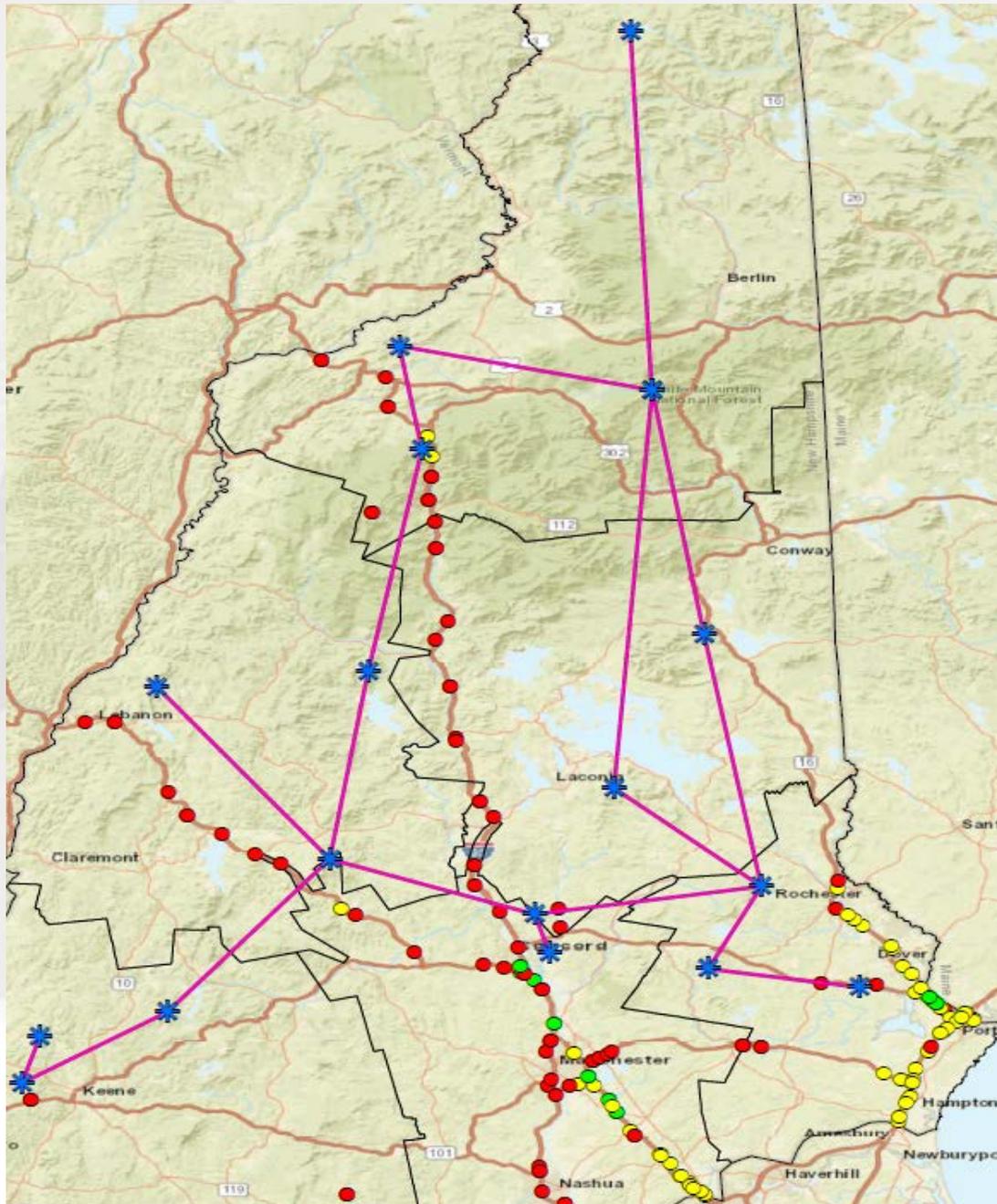
NH Department of Transportation



TRANSPORTATION
MANAGEMENT
CENTER



FirstNet[®]

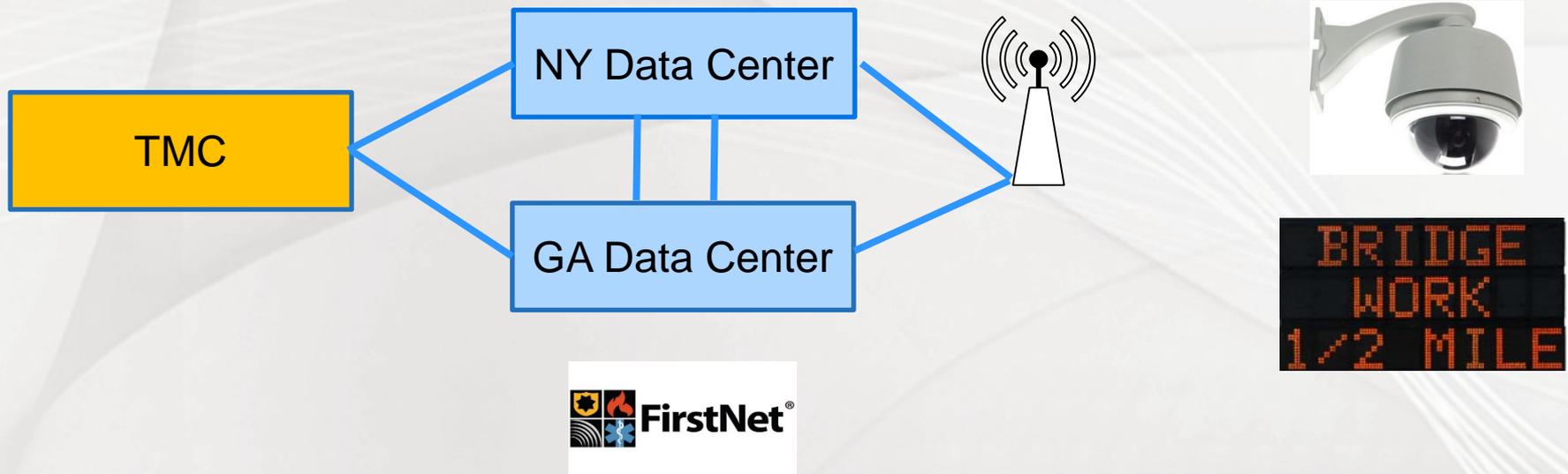


State of NH Comm for ITS Devices such as; RWIS, DMS, CCTV, MVDS, Traffic Counters, Coordinated Signal Systems

Communication Type

- Fiber (19)
- Microwave (83)
- Cell Modem (82)
- SafeNet Paths (18)
- ✱ SafeNet Tower (18)

Use of FirstNet RAN and CORE For ITS Device Communication

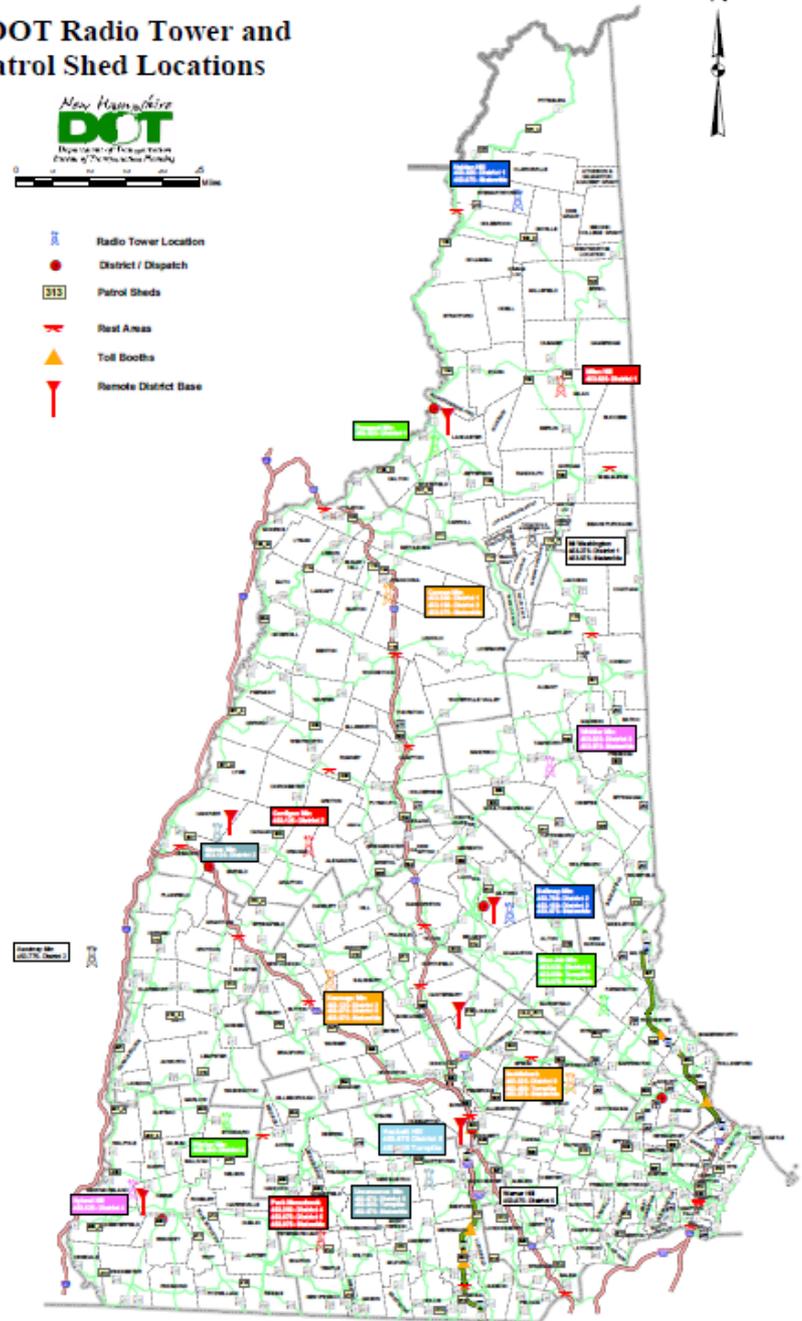


- Provides dedicated bandwidth priority service on Band-14 public safety broadband Network
- Provides encryption security from cell modems to FirstNet Radio Access Network
- Purpose built access point name (APN) network cloud within FirstNet core data centers
- VPN tunnel security between redundant FirstNet Data centers and NHDOT TMC
- User control of data modems on end points through customer user portal.

NHDOT Radio Tower and Patrol Shed Locations

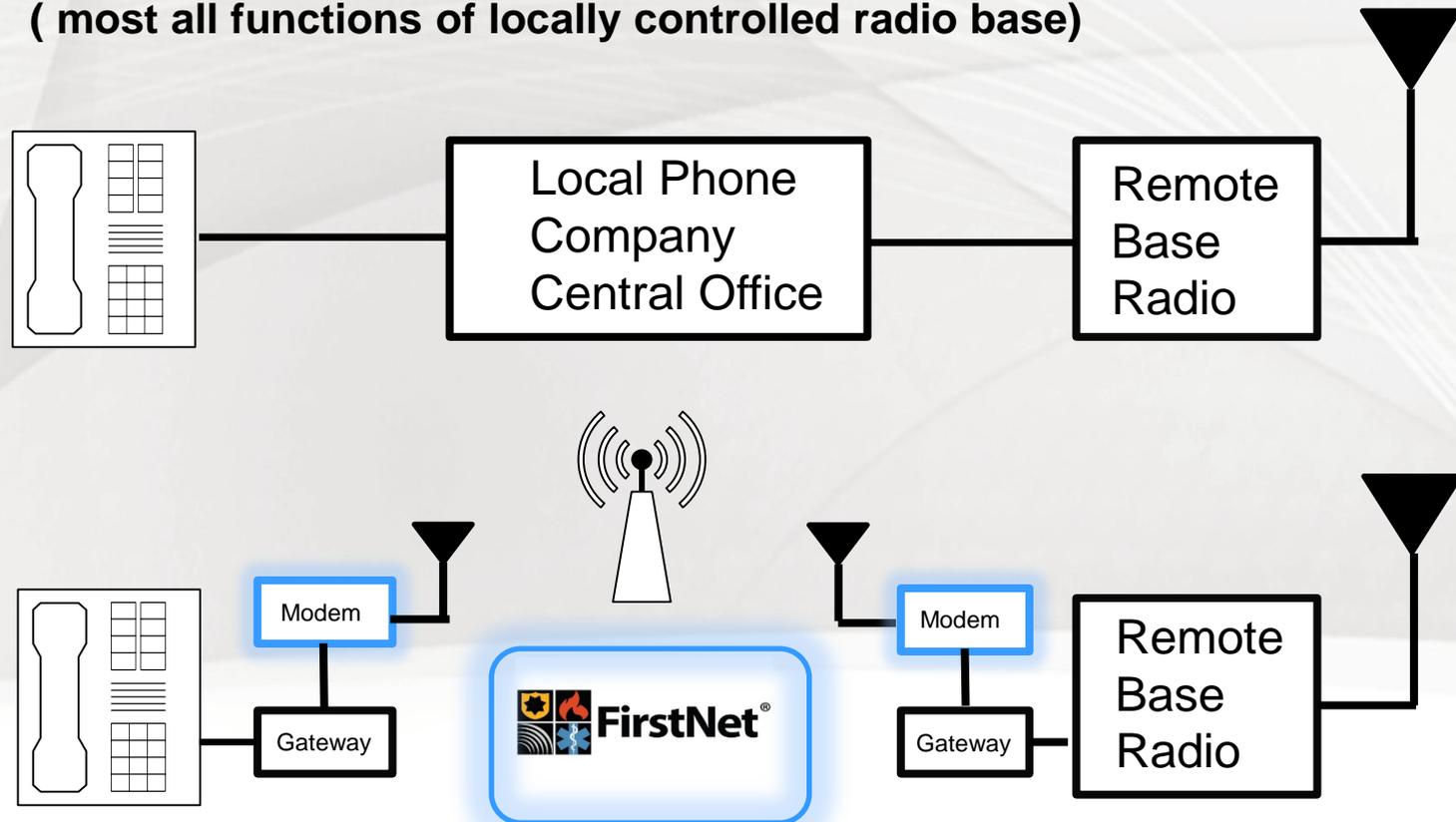


- Radio Tower Location
- District / Dispatch
- Patrol Sheds
- Rest Areas
- Toll Booths
- Remote District Base



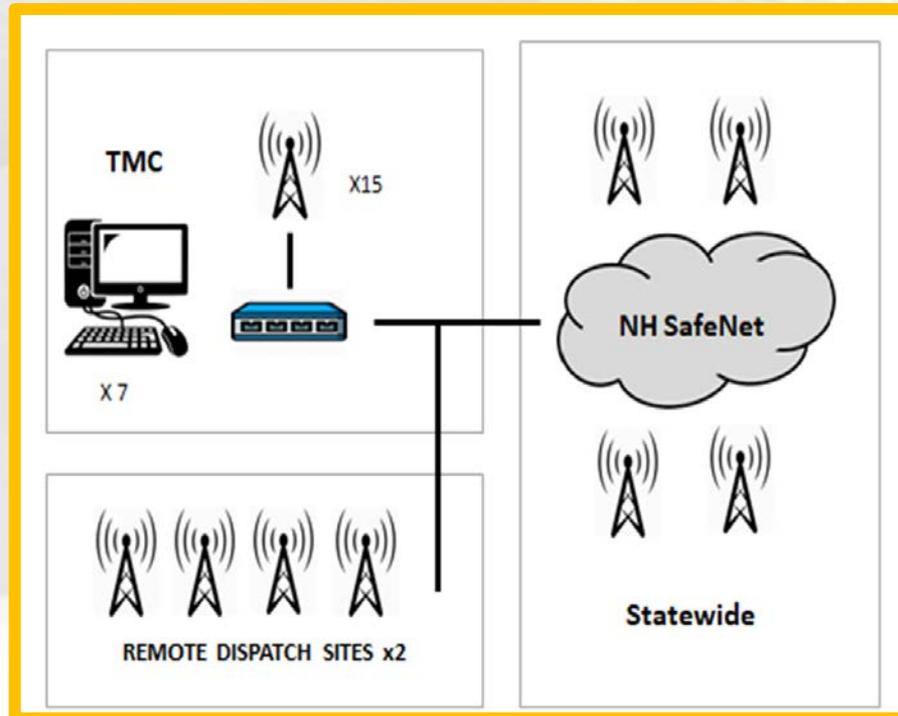
Use of FirstNet RAN for LMR

- Will Allow for phased migration of analog LMR dispatch to RoIP, replacing leased telco services at certain NHDOT District dispatch offices
- Will Allow for re-location of Dispatch base station from leased facilities to DOT properties saving tower space lease costs
- Will Allow for transition from Analog audio remote control with limited functionality to other forms of Digital control with more accessibility (most all functions of locally controlled radio base)



Use of FirstNet RAN for LMR

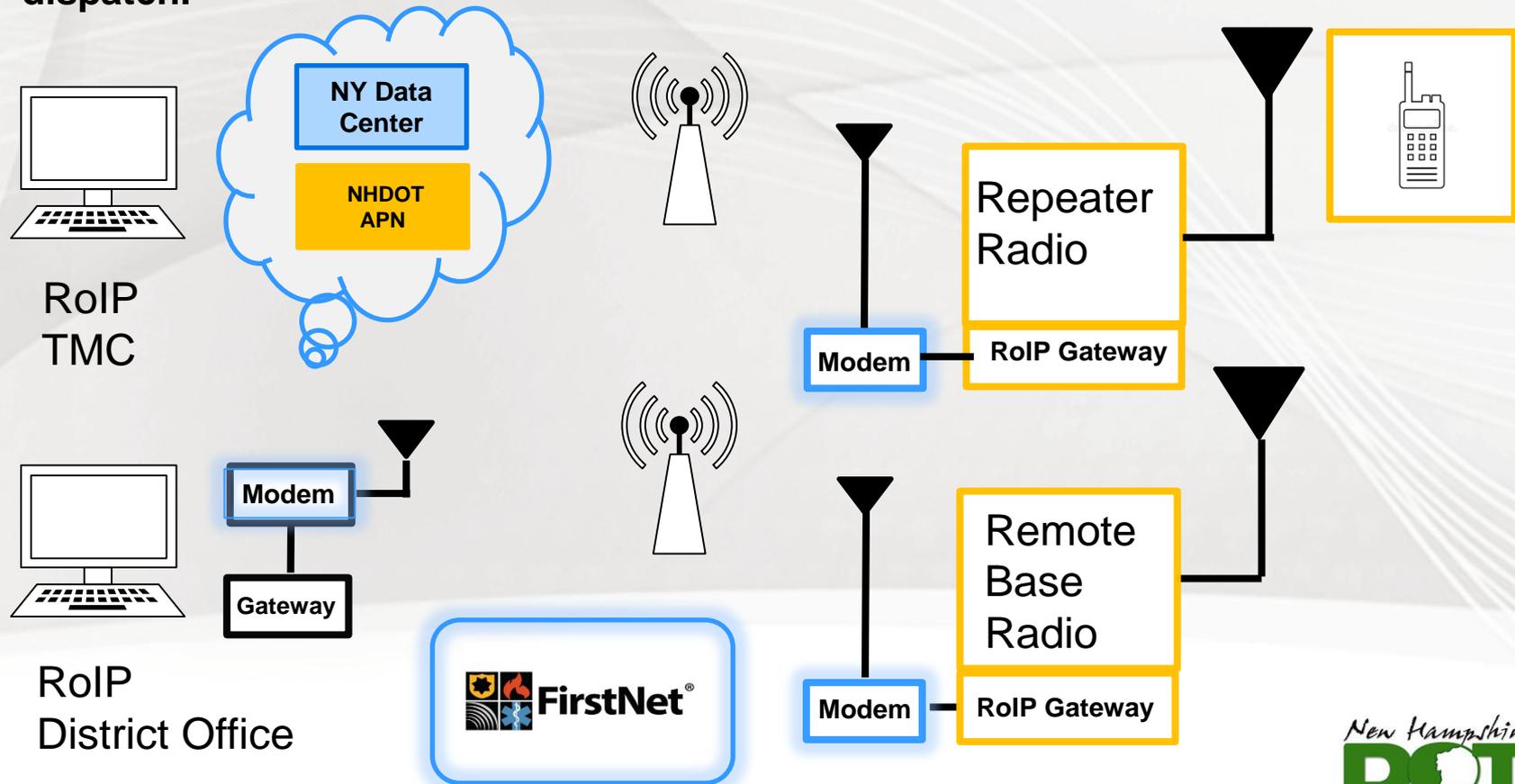
- Will Allow for phased migration RoIP, replacing Microwave to certain NHDOT LMR Repeater sites for Statewide dispatch at the TMC.
- Will Allow for transition from RoIP to LTE enhanced push-to-talk (EPTT) dispatch
- Allows for bridging EPPT smart phones to LMR radio channels.
- Allows for COOP planning without need for more infrastructure investment



Statewide Dispatch Existing Conditions

Use of FirstNet RAN for LMR

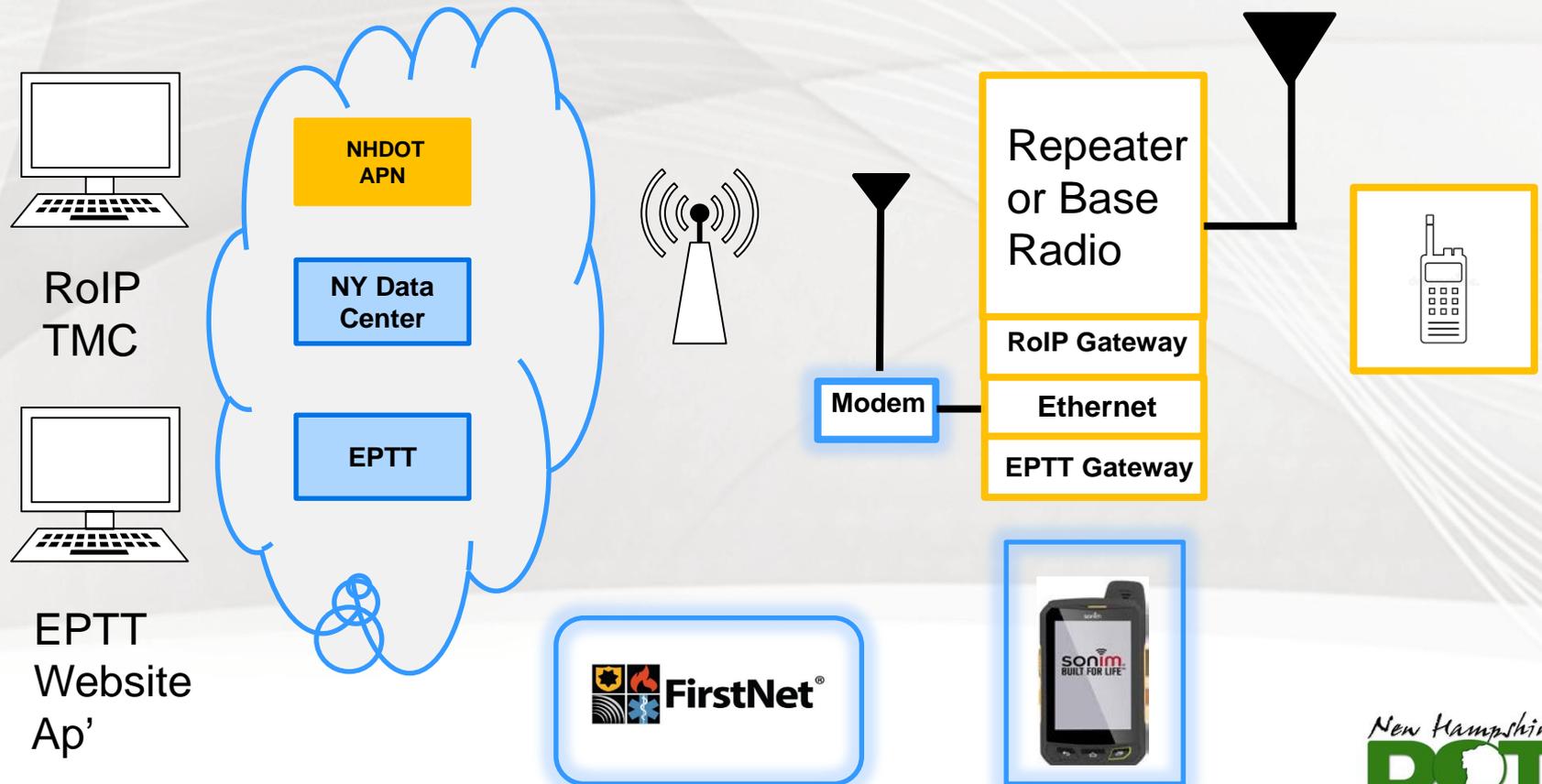
- Will Allow for conversion of analog dispatch to RoIP at district offices.
- Will Allow for phased migration connectivity replacing Microwave to certain NHDOT radio repeater sites for Statewide dispatch at the TMC.
- Will allow for reduction of Dipatch remote base stations.
- Will Allow for transition from RoIP to LTE enhanced push-to-talk (EPTT) dispatch.



Use of FirstNet RAN for LMR

Will allow for transition from RoIP to LTE enhanced push-to-talk (EPTT) dispatch and eventually mission critical PTT

Will allow for phase-out of more expensive LMR hardware & software and non standard RoIP applications.



End Results for Leveraging FirstNet Public Safety Broadband Network

Increases chances of deploying ITS into rural or remote areas that may not currently be in a ITS master plan

Reduces cost of communications infrastructure investment or lease cost for places that have low density of ITS devices

Reduces cost of Maintenance and Operations of a self-owned network

May be lower cost option for communications equipment life-cycle replacement for ITS device control and operation.

May be lower cost option for LMR lifecycle replacement of subscriber units.

Increased security over traditional cellular carriers without additional cost.

Think of FirstNet as a wireless / computer Ethernet jack anywhere you want it.