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# STATEWIDE RADIO SYSTEM IMPROVEMENT PROJECT



# Statewide Radio System Improvement update

## Status Summary

- Coverage
  - Six site additions completed year-to-date: Rockingham, Putney, Huntington, White River, Londonderry and E. Corinth
- Congestion
  - Seven site channel additions completed year-to-date: Williston, Wells, Castleton, St. Albans, Berlin, Jay and Lincoln
- Performance
  - Site and channel additions increase performance and precipitate new, short-term challenges
  - Temporary performance target hit during additions and upgrades
  - New issues being addressed

# Statewide Radio System—14 additional sites needed

- Commissioned six sites year-to-date
  - Rockingham, Putney, Huntington, White River, Londonderry, E. Corinth
- Construction in progress at two sites
  - Orwell, Topsham
- §248(a) received for two sites
  - Royalton, Woodbury
- §248(a) submitted—two sites due in August, one in September
  - Chester, Topsham, Barnet
- Challenging leases in review for two sites
  - Chester (town-managed site), Woodbury (no previous NEPA approval)
- Candidate sites selected for coverage improvement
  - Chelsea (VTel tower), W. Rupert (roof top at General Store)
- Schedule adjustments
  - Two sites are delayed one month to take advantage of permanent installation vs. temporary outdoor cabinet
  - Two sites are delayed two weeks due to challenging site arrangements (site and lease)

# Statewide Radio System—Congestion

- 22 total channel additions at 10 sites
  - Completed channel additions with requisite performance tests at seven sites
    - Williston, Wells, Castleton, St. Albans, Berlin, Jay and Lincoln
    - Inter-frequency interference (Intermodulation) experienced at channel addition sites remedied at all sites and new sites going forward
  - Channel additions on target for completion by September

# Statewide Radio System—Operation & Maintenance

- Middlebury interference caused by VPR transmitter
  - C Squared (RF engineers) report cites VPR equipment as primary cause of interference
  - Working with tower owner for complete shutdown of tower transmitters to clarify possibility of other causes
  - VPR has shut down interfering transmitter
  - Interim coverage ~85% of optimal performance
  - VPR working cooperatively to resolve issue (their antenna and combiner)
    - VPR notified FCC of component shutdown of their transmitter
- White River Jct. radio interference—primary cause is radio station and paging company
  - Adjusted channel usage at site yielding significantly improved performance
  - Engineers designed and ordered custom filter solution for insertion on paging system
  - Planned installation in August
- VELCO system interference with WVNY reception in E. Corinth
  - Topsham Telephone receiving antenna for WVNY Ch. 13 is collocated at E. Corinth site
  - VELCO system was causing their outage and had to be shut down temporarily
  - Subsequent temporary frequency changes on transmitters allowed for repowering of VELCO
    - Site is back on line
  - Engaged C Squared to determine filter solution for a permanent remedy, filter ordered

# Statewide Radio System—System Testing

- VELCO conducted congestion load testing of system at sites with upgraded channel capacity
  - Fully exercised all channels at full load
  - System provided very good audio quality at full utilization
  - Discovered delay in channel release after saturation
    - Manufacturer has assumed responsibility for problem and has deployed a patch. Preliminary testing shows effective results.
- Retest to be conducted in September

# Statewide Radio System—GMP system-wide testing

- GMP field and dispatch center testing conducted
  - Truck-to-truck, dispatch-to-truck, truck-to-dispatch
  - Tests conducted while stationary and mobile
- Variable field results; generally not as good as we want
  - Some responses were excellent, some were poor
  - Issues varied
    - Console troubles—hardware issues
    - Network troubles—call party unavailable noted earlier
    - No answers from dispatch—busy dispatch center
- Overall results are very helpful isolating issues
  - Mobile
  - District region
  - Network

# Statewide Radio System—operational improvements

- Initiated weekly VELCO/GMP technician exchanges
  - Improved operational insight & transparency
  - Improved integration of troubleshooting procedures
  - Adjusted trouble-reporting process between companies
  - Improved understanding of trouble isolation and repair process through cross-training
- Initiated VELCO personnel attending GMP district safety meetings
  - Customers value direct, three-way communications and feedback
  - Prompted training and operational improvements
  - Provides opportunity to reinforce training
- Reached agreement with GMP to install one of their consoles at VELCO for trouble-shooting and testing