Impacts of New Technology on Rhode Island’s 911 System

A Report to the Joint Municipal Shared Services Study Commission

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Charge from Commission

• Comprehensive examination of the current 911 system and the impacts of new technology with regard to:
  • Public safety
  • Cost implications
Summary

• RI’s Current System: E–911
• Coming Technology: NG–911
• Opportunities and Challenges of NG–911
• Alternative Structures for NG–911
  – Horizontal Consolidation
  – Vertical Consolidation
• Recommendations
E-911

• One Primary Public Safety Answering Point (PSAP)– North Scituate
  – All 911 calls received by North Scituate

• Voice calls only
  – Almost all information relayed verbally
  – After determining the nature and location of the call, telecommunicators transfer the call to the appropriate dispatch center(s)

• 72 Local Dispatch Centers
  – Local dispatchers send appropriate first responders
Figure 1: Current 911 System
NG–911

• Texts, video, pictures, other multimedia

• NG–911 is coming to Rhode Island
  • North Scituate to receive texts messages in early 2015

• The state needs a cohesive plan for implementing NG–911 throughout the 911 system
Figure 1: Current 911 System
Figure 2: Plan for NG-911 Implementation

With NG-911 technology, the PSAP can receive text messages but cannot send them electronically to local dispatchers.
Impact of NG–911

Drastic change to the flow of information

• Text or call RI 911
• All calls and texts received by PSAP
• Telecommunicators must interpret text messages and verbally relay info to dispatchers
• Similar to how wireless phones changed 911
• 911 technology will continue to evolve

The State must take necessary steps to:

• Maintain the highest level of public safety
• Mitigate NG–911 State and municipal costs
Challenges of NG–911 Implementation Plan

Interpretation of text messages:

• Only telecommunicators can receive and interpret text messages
• Texts may be hard to interpret due to shorthand or ambiguous language
• Only telecommunicators can send texts back and forth with 911 user for clarification, dispatchers cannot
NG–911 Technology at Local Dispatch Centers

• Installing NG–911 technology at local dispatch centers is necessary to alleviate the challenges that arise when only the PSAP has NG–911 technology
Figure 3: NG-911 Technology at Local Dispatch Centers

With NG-911 technology installed at local dispatch centers, new multimedia messages will be able to be transmitted electronically to telecommunicators as well as dispatchers.
Benefits of NG–911 at Local Level

• Reduces NG–911 strain on telecommunicators
• Reduces communication errors and delays between the PSAP and local dispatchers
• Reversing the information flow is a vastly expedited process
Challenges of Implementation at Local Level

• Municipal costs of implementation and upgrades at 72 municipal dispatch centers:
  • Includes router, static IP broadband connection, and a CAD system interoperable with the PSAP
  • Future costs of system maintenance and upgrades for new technology

• Local dispatch centers with different NG-911 technology will not be interoperable
Alternative Structures to Enhance Public Safety and Mitigate Costs

We evaluate system performance of two different options tailored specifically to Rhode Island:

- Horizontal Consolidation
- Vertical Consolidation
Horizontal Consolidation

• Combines municipal dispatch services by criteria such as region, cooperative agreements, or financial considerations

• For example, multiple municipalities may choose to combine their fire dispatch units into a single dispatch facility

• Would allow municipalities to share the costs of NG–911 implementation
Figure 1: Current 911 System
Figure 4: Horizontal Consolidation with NG-911 Implemented

911 Caller

PSAP

Local Dispatcher

First Responder
Horizontal Consolidation: Public Safety Implications

Effectiveness of 911 System
• Public safety will neither increase nor decrease

Interoperability Benefits
• Increased interoperability between local dispatch centers if they transition to NG-911 using the same technology
Horizontal Consolidation: Fiscal Implications

Cost Savings
• Fewer local dispatch centers, which would reduce local costs by sharing NG-911 expenses across multiple municipalities

Additional Outlays
• Additional upfront costs for some expanded facilities to house local dispatch centers
Vertical Consolidation

• Create regional facilities, each of which combines PSAP and dispatch responsibilities

• Telecommunicators answer 911 calls and then dispatch emergency services directly
Figure 1: Current 911 System
Figure 5: Vertical Consolidation
Vertical Consolidation: Public Safety Implications

Improves public safety by removing a point of contact in the four-point transmission chain:

- Decreasing transmission error
- Increases speed of response

Issues

- Reduction of local knowledge in dispatch
Vertical Consolidation: Fiscal Implications

Cost Savings

• Reducing the number of facilities requiring upgrades will reduce long term costs

• Combining dispatch and PSAP responsibilities into single facilities will remove a link in the 911 transmission chain

Additional Outlays

• Capital and infrastructure costs associated with building new PSAPs or upgrading current facilities to serve this role
Recommendation

Move forward with horizontal consolidation:
  • Reduces costs
  • Maintains public safety
  • Does not preclude moving to vertical consolidation

State actions:
  • Regulate NG–911 technology and protocols at the dispatch level
  • Explore cost–sharing programs to mitigate up–front capital costs to municipalities during consolidation
Need for Pilot Projects

Multiple pilot projects, each one combining 3–5 municipalities

Criteria:

• Geography (urban, suburban, rural)
• Population (tourists, linguistics, density)
• Call volume
• Existing ties between municipalities
Thank you