

# Portland Fire & Rescue

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The following questions were asked during the bureau's budget work session. Responses are included in the attached packet.

1. What are the lessons learned from deployment of Quints and RRVs?



# PORTLAND FIRE & RESCUE



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## LESSONS LEARNED FROM DEPLOYMENT OF RRVS AND QUINTS

### Rapid Response Vehicles (RRVs)

The program RRV has had some success in freeing up four-person crews and apparatus so they can focus on the majority of the bureau's calls, which are critical fire & rescue dispatches. As supported by NFPA and NIST, approximately 93% of PF&R emergency calls require a minimum of four firefighters and a wide complement of tools to deliver rapid interventions necessary to save lives, property, and the environment. This includes calls where critical interventions need to be delivered in parallel rather than serial order (fire, rescue and EMS calls). With only two people, RRVs have limited capabilities and are designed for response to lower-acuity calls, which are a small percentage of PF&R's responses (lower-acuity calls account for approximately 7% (5000 of 70,000) calls).

**Careful assessment and assignment of call types is important for public safety, patient care, and overall success of the RRV program. Through the pilot program we have learned the following:**

- RRVs have limited capabilities. Two person response works well for lower-acuity calls that do not require the timely delivery of critical interventions, or labor intensive resources (lifting of large patients, carrying patients longer distances or across uneven terrain (including stairs))
- Response requiring lifting of patients over 200lbs is more efficient to dispatch one 4 person crew initially, instead of 2 person, then dispatching an additional 4, for total of 6 members (patients exceeding 450 lbs may require 6-8 firefighters)
- RRVs have no concrete value to improve ISO ratings (compared to Engine or Truck worth actual points toward score)
- Expand the lower acuity call response times from 15 to 20 minutes in order to make the RRVs most effective.
- Placement of 3 RRVs in SE Portland has been effective in assisting with improving response reliability that had deteriorated from call volumes that had grown to exceed 3000 per neighborhood station.
- Responding approximately 3 times the distance as the closest unit, RRVs have no impact on fuel use, therefore little impact on carbon footprint.
- The addition of RRVs 24/7 to high volume stations shows greater improvement to response reliability over a more costly 40 hour schedule.
- When patients are outside in extreme temperatures, the closest crews should be dispatched, regardless of call type.
- At this time, given the current call volume, PF&R believes the RRVs are well placed for the greatest effectiveness.

While the RRVs are not capable of performing critical fire & rescue interventions and do not help to maintain Portland's ISO or other fire protection ratings, they can be an effective way to improve response reliability of critical fire apparatus when used to supplement four-person emergency response crews.

While it remains to be seen how the Affordable Healthcare Act will influence lower-acuity calls (they could conceivably decrease with tele-medicine, etc.), PF&R is actively looking for ways to turn this new legislation into an opportunity.

## **QUINTS**

A complete analysis was performed of all equipment providing capabilities between Engines, Trucks, and Quints. Quints largest strength is that it provides some truck operations with the ability to deploy a single fire attack line for rescue; however, the dual capabilities limit ability to fulfill either role completely.

### **The analysis and actual ‘lessons learned’ revealed the following:**

- Despite similar horsepower of motors, Quints are slower due to heavier apparatus.
- Quints are configured most like a fire truck, but lack some of the equipment standard trucks are able to carry. With the addition of a pump, water tank, and some hose, Quints have approximately 50% less compartment space. This equates to the loss of the following equipment standard on PF&R trucks:
  - Approximately 50% fewer ground ladders needed for rescue, access/egress from upper stories (109’ vs. 207’)
  - 50% fewer roof ladders (2 vs. 4)
  - 75% fewer exhaust fans (1 vs. 4)
  - 50% less cribbing (required for vehicle stabilization during pin-ins)
  - Limited salvage and overhaul equipment
- Ensure Quint is not paired with another Quint on first and second alarm dispatches (due to incomplete equipment).
- Quints are unable to support full fire attack (full fire attack of average residential fire generally requires 5 1/4” discharge ports, vs. only 2 on the Quint)
- Quints have limited lay-in (water supply) capabilities and are unable to lay-in from a distance greater than 250’ or provide water supply needed on significant fires; Engines are able to establish water supply from 1200’ away.
- Surrounding FMAs require engine response with good response reliability in order to absorb additional engine responsibilities
- The quints have limited maneuverability, therefore have some access problems due to a long, non-tillered chassis not acceptable in the first-in FMA.
- Specialty response in neighboring FMAs (ie Marine, Haz Mat, Tech Rescue) needs to be evaluated prior to placement due to the increased reliance on adjoining FMAs in the response network.

As Portland grows and call volumes shift, PF&R will continue to analyze the most effective placement of resources. At this time, PF&R will leave the Quint assigned to Station 8, at N. Maryland and after lessons learned, relocate the second Quint from an adjoining FMA to SW Portland where there has been a long identified need for a truck company, substantiated by TriData in 2006. Relocating this Quint to SW improves the arrival of first-in truck company operations by over 6 minutes.