

Quint Concept

&

Staffing

# Major Driving Factors

Reduction in ISO rating

Large cost savings in personnel costs

Enables the department to cope with changing building environments in the Town

# Quint Operations

- ISO currently has a new schedule of rating allowing departments with a minimum of three stations to operate under a Quint concept. This rating system requires that all of the apparatus are Quints and they must respond as first out units from their assigned station on structural calls. This would allow our staffing to receive maximum credit with a staffing level of 19.











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# Things to consider

- NFPA 1710
- ISO
- Increased call volume
- Town growing internally
- Traffic
- Target Hazards
- Efficiency of trucks
- Firehouse Location
- Safety

# NFPA 1500

High Medium Minimum Current

■ Engine	6	5	4	5	3
■ Ladder	6	5	4	5	3

# ISO

## Personnel Requirements maximum credit

- Engine 4
- Ladder 6
- Quint 6

# Morrisville Fire Department

	Desired Staffing	Minimum Staffing
■ Engine	4	3
■ Ladder	6	5
■ Quint	6	5

# Current ISO Rating Requirements

Under Morrisville's current operating conditions we are required to operate 3 Engines and 2 Ladders. To achieve the maximum points we are required to staff the apparatus with 25 personnel.

# Current Response

3 Engines 1 Ladder 1 Battalion with a total of 13 personnel.

For maximum credit we would need 19 personnel.

# Advantages of a Quint

- Less personnel required to maximize ISO ratings
- Could allow two units to respond from the same station (quint and squad)
- Squad trucks responding to EMS calls
- Less cost to operate fleet
  - Fuel
  - Maintenance
  - Loose equipment

# Advantages of a Quint

- Additional elevated water streams
- Access to upper floors for rescue and fire extinguishment

# Disadvantage of a Quint

- Operator's must remember the importance of truck placement
- Dual roles (Engine and Ladder operations)
- Training requirements
- Cost of Apparatus (purchase price)
- Higher operating cost if squad trucks are not staffed.

# Justification for a 100' Quint



# Option A

under current ISO rating requirements

■ Station #1	Staff	■ Station #3	Staff
■ Engine	4 (3)	■ Engine	4 (3)
■ Ladder (Rescue)	6 (0)	■ Res Lad (Rescue)	6 (0)
		■ Tanker	
■ Station #2			
■ Engine	4 (3)		
■ Ladder	6 (3)	■ Total staffing	25 (13)
■ BC	1		
■ Reserve Pumper			

# Option B

■ Station #1	Staff	■ Station #3	Staff
■ Quint	4	■ Pumper	4
■ Squad	2		
■ Reserve Pumper			
■ Station #2		■ Total staff	21
■ Ladder	6		
■ Engine	4		
■ BC	1		

# Option C

## Quint Concept

■ Station #1	Staff	■ Station #3	Staff
■ Quint	4	■ Quint	4
■ Squad	2	■ Squad	2
■ Station #2			
■ Quint	4	■ Total staff	19
■ Squad	2		
■ BC	1		
■ Reserve Pumper			

A reduction of 6 personnel per shift for a total of 18.

# Cost of operating apparatus

- We average 500 miles per month.
- If we use 5 mpg and \$4.29 per gallon it costs in fuel \$ 5148 per apparatus.
- On top of this cost we also have a maintenance cost of \$1700. This brings the cost to approximately \$6900 to operate a piece of apparatus.
- This does not include breakage.



# Recommended Plan

■ Recommended Purchases	Apparatus Replaced
09' pumper	2 Engines
10' (2) Quints	3 Engines & 1 Rescue

Our total Large apparatus fleet would be 4, consisting of a Ladder, 2 Quints, and Reserve Pumper.

# ISO rating points

Staffing	Current points	New Quint plan
	5.90	10.83

By moving from our current apparatus to the Quint concept with the difference in personnel required we can move from a rating of 3 to a 2 when the divergence points are added.

# ISO rating breakdown

## Fire Department only

	<u>Max</u>	<u>Current</u>	<u>New plan</u>
Engine company	10	9.30	10
Reserve engine	1	.83	1
Pump capacity	5	5	5
Ladder company	5	3.68	5
Reserve ladder	1	.39	.66
Distribution	4	2.71	3
Personnel	15	5.90	10.83
Training	9	3.87	7
<b>Total</b>	<b>50</b>	<b>31.68</b>	<b>42.49</b>

# ISO Under Quint Plan

	Current rating	Quint rating
911 Center	9.53	9.53
Fire Department	31.68	42.49
Water Supply	39.98	39.98
Divergence	-7.32	0
<b>Total</b>	<b>73.87</b>	<b>92</b>
	<b>Class 3</b>	<b>Class 1</b>

# Plan Comparison

■	Current Plan		Quint
	Engine \$ 500,000		Quint \$ 800,000
■	Engine \$ 500,000		Quint \$ 800,000
■	Engine \$ 500,000		Platform \$ 1,000,000
■	Engine \$ 500,000		Pumper \$ 500,000
■	Pumper \$ 500,000		Rescue \$ 250,000
■	Platform \$ 1,000,000		
■	SM Rescue \$ 250,000		
■	LG Rescue \$ 450,000		
■	<b>Total \$ 4,200,000</b>		<b>\$ 3,350,000</b>

# Cost savings in personnel

- The cost of one (1) firefighter in the FY 09 is \$51,537.15. If we use that figure alone without including the cost of Engineers and Officers, moving to the Quint concept would save a minimum of **\$927,668.70** annually. This is because under the Quint concept we would be able to reduce staffing by 18 personnel.

# Current Apparatus replacement

- This is the current replacement plan.

R:\dodson\apparatus  
plans\Plans\Engineplan.xlsx

# Quint Plan

- This is the apparatus plan using the Quint concept. <R:\dodson\apparatus\plans\Plans\Quintplan.xlsx>

# Quint Plan with air packs

- This apparatus plan includes replacing all air packs on a 10 year schedule.

<R:\dodson\apparatus plans\Plans\Quint apparatus plan.xlsx>

# Questions

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Quint Concept - Town of Morrisville

The slides were likely created in or before 2009.