

Verbal Testimony:

1. Some 80% of the taxpayers approved a referendum in 2010 that empowered the Town Council to assist in the consolidation of the four fire districts by conducting a “comprehensive feasibility planning assessment”.
2. With 10,033 votes in favor of this referendum (2,544 against), it was clear that the taxpayers wanted to see “cost savings” from the consolidation of four separate Departments, and a corresponding decrease in their fire tax bills.
3. That comprehensive assessment was conducted by Don Jacobs, and his “final” report (dated October 1, 2012) recommended the use of the 3 station model (instead of the current 4 station model).
4. This reorganization would reduce personnel by at least 7, and realize annual cost savings of \$748,000.
5. The former and current Mayors have both publicly stated their objectives to substantially reduce the cost of fire service delivery in Cumberland. Recently Mayor Murray confirmed his desire to strongly consider the closing of a station.
6. There is no question that the closure of a station and the related elimination of the 12 positions currently funded to staff an engine company, could yield substantial annual savings (estimated in the Jacobs report as \$106,800 per man), for a total annual savings estimated at \$1,282,000, plus the cost savings realized from closing a physical station location (i.e. utilities, repairs, upkeep).
7. However, there have been concerns voiced by the firefighters that reducing manpower (by these 3 positions) will place them, and the taxpayers, at a greater risk of injury or death.
8. Additionally, the newly negotiated CBA requires “minimum manning” of 12 men on-duty at all times (four stations with 3 firefighters per apparatus).
9. So, if it is agreed by the Committee and the Union that the minimum number of firefighters required in the town is 12, then the 3 platoon system could allow the town to realize substantial fire delivery savings, without reducing the minimum number of firemen on duty.
10. How? Because the current CBA requires 3 men at 4 stations, 24 hours a day, 7 day a week. This totals 2,016 hours of personnel costs per week.
11. The current 4 platoon shift model requires each man to work an average 42 hour work week, which means the Fire District needs to employ 48 men to work 42 hours a week to equal 2,016 hours of coverage.
12. However, the 3 platoon shift model generally requires each man to work an average work-week of 56 hours. Thus, 2,016 hours divided by 56 hours would only require 36 men to staff the 4 stations in accordance with the current CBA.
13. Thus, the District could reduce manpower by “up to” 12 positions, without losing any existing service coverage.
14. And, because on-duty manpower is not reduced under the 3 platoon shift model, prior safety concerns are negated (see #7 above).
15. Although North Kingstown has recently pioneered the use of the 3 platoon system in Rhode Island, this shift system is has been commonly used in the western half of the U.S. for decades.

16. Other communities currently using the 3 platoon system in Rhode Island include Providence, Tiverton, and Coventry.
17. Providence has boasted \$5,000,000 in future overtime savings alone, while North Kingstown realized \$1,400,000 in first year savings.
18. Overtime savings are utilized because the “normal work week” would be increased from 42 to 56 hours.
19. The Federal Fair Labor Standards Act specifically allows firefighters to be paid “straight-time” for hours worked up to 53 hours a week.
20. That said, Cumberland’s savings may differ, based upon wage increases provided to the firefighters when/if this shift change is negotiated.
21. For your reference, please note that in exchange for working more hours per week, North Kingstown agreed to a 7% increase in base wages over a 3 year period, and Providence recently announced an 8% increase in base pay for their firemen.
22. Important to note: Base wage increases will (generally) result in greater pension benefits for the firemen. This should be an attractive benefit for the firefighters.
23. Overall negotiated benefits will impact the total savings realized from converting from a 4 platoon shift system to a 3 platoon shift model.
24. However, the attached calculations do illustrate that the estimated current annual savings in Cumberland could range between \$800,000 to \$1,200,000.
25. Are there any questions on my testimony, the calculations, or the documents attached herein?

Testimony

For the Support of Cost Savings that can be Realized from the Utilization of a 3-Platoon Shift Model for the Cumberland Fire District

Presented to: Cumberland Fire Committee

Presented by: Arthur Lambi, Jr.

Dated: August 3, 2015

About the Presenter: Arthur Lambi

Mr. Lambi is currently a second-term Cumberland At-Large Town Councilor and served on a special 3-person Town Council sub-committee to study Fire Consolidation in 2012/2013.

He served briefly as a Trustee of the North Cumberland Fire District and has been a member of the National Fire Protection Association.

Mr. Lambi is a licensed Certified Public Accountant (CPA) in Rhode Island, and manages his own practice that renders accounting and tax services to family-owned businesses and their owners.

In addition to being named Rhode Island Small Business Administration “Accountant of the Year 2000”, Mr. Lambi was elected by his peers as the President of the Rhode Island Society of CPAs in the year 2010/2011.

Mr. Lambi has studied fire service delivery, and the related costs, since becoming involved with the finances and operations of the North Cumberland Fire District (NCFD) in July 2010. Since that time, the NCFD has decreased its annual operating budget from \$1.98 million, to \$1.78 million for the fiscal year ending June 30, 2015. Despite incurring operating deficits and large tax increases prior to 2010, the district began generating annual operating surpluses in 2011 through 2014. Cost savings in this District resulted in tax rate reductions. And, all of these operating efficiencies were realized without placing the District’s personnel, or the taxpayers, at additional risk.

Contact Information:

Mr. Lambi would welcome follow-up questions relative to this presentation. Accordingly, additional inquiries can be made to:

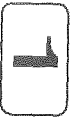
Email: arthurlambicpa@aol.com

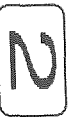
Phone: (401) 334-1700

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Cumberland Fire District

Estimated Annual Savings - Converting from a 4 Platoon Shift Model to a 3 Platoon Shift Model

Prepared by Arthur Lambi, Dated August 3, 2015

| | | | | |
|---|--------------|------------|-------------------------|---------------------------|
| <i>Estimated reduction in personnel:</i> | | <u>12</u> | | |
| <i>Estimated increase in remaining base wages</i> | | <u>0%</u> | | |
| | | | <u>Per Position</u> | <u>Annual Savings</u> |
| Annual "firefighter" salary | | | \$52,520 | \$630,240 |
| Payroll taxes on wage reductions | | | 8% | \$50,419 |
| EMT Incentives | | | \$1,300 | \$15,600 |
| Longevity payments | | | 4.50% | \$28,361 |
| Clothing allowance | | | \$900 | \$10,800 |
| Life insurance | | | \$150 | \$1,800 |
| Tuition reimbursement | | | \$340 | \$4,080 |
| Bachelor's degree incentive | | | \$1,000 | \$12,000 |
| <i>Vacation days (10 to 14 years)</i> | <i>hours</i> | <i>192</i> | \$4,617 | \$55,406 |
| <i>Sick days</i> | <i>hours</i> | <i>132</i> | \$3,174 | \$38,091 |
| <i>Bereavement leave</i> | <i>hours</i> | <i>48</i> | \$3,174 | \$38,091 |
| <i>Holidays (12 days)</i> | <i>hours</i> | <i>126</i> | \$3,030 | \$36,360 |
| <i>Personal time</i> | <i>hours</i> | <i>34</i> | \$818 | \$9,811 |
| Overtime differential on <i>paid time off</i> | | | * | \$88,880 |
| Retirement contributions, (budget average %) | | | 19% | \$119,746 |
| Health insurance benefits, (budget average per man) | | | \$17,917 | <u>\$215,004</u> |
| Subtotal of Annual Savings | | | <u>\$112,891</u> | \$1,354,690 |

| | | |
|--|-------------|--|
| Subtotal of Annual Savings (from previous page) | | \$1,354,690 |
| Estimated increase in remaining base wages | 0% | 1 |
| Total budgeted base: | \$2,871,927 | |
| Increase in retirement cost | 19% | 0 |
| Increased payroll taxes | 8% | <u>\$0</u> |
| <i>Estimated Annual Savings, net of wage increase</i> | | <i>** <u><u>\$1,354,691</u></u></i> |

* Differential computed by totaling savings from paid time off: \$177,760 times 50%

**Expenses for training, personal equipment, and other incidentals are not reflected above.

This is page 2 of 2 of the Plan:

Estimated reduction in personnel:

Estimated increase in remaining base wages

| |
|------------------|
| <u><u>12</u></u> |
| <u><u>0%</u></u> |

Cumberland Fire District

Estimated Annual Savings - Converting from a 4 Platoon Shift Model to a 3 Platoon Shift Model

Prepared by Arthur Lambi, Dated August 3, 2015

| <i>Estimated reduction in personnel:</i> | | <u>12</u> | | |
|---|--------------|------------|-------------------------|---------------------------|
| <i>Estimated increase in remaining base wages</i> | | <u>5%</u> | | |
| | | | <u>Per Position</u> | <u>Annual Savings</u> |
| Annual "firefighter" salary | | | \$52,520 | \$630,240 |
| Payroll taxes on wage reductions | | | 8% | \$50,419 |
| EMT Incentives | | | \$1,300 | \$15,600 |
| Longevity payments | | | 4.50% | \$28,361 |
| Clothing allowance | | | \$900 | \$10,800 |
| Life insurance | | | \$150 | \$1,800 |
| Tuition reimbursement | | | \$340 | \$4,080 |
| Bachelor's degree incentive | | | \$1,000 | \$12,000 |
| <i>Vacation days (10 to 14 years)</i> | <i>hours</i> | <i>192</i> | \$4,617 | \$55,406 |
| <i>Sick days</i> | <i>hours</i> | <i>132</i> | \$3,174 | \$38,091 |
| <i>Bereavement leave</i> | <i>hours</i> | <i>48</i> | \$3,174 | \$38,091 |
| <i>Holidays (12 days)</i> | <i>hours</i> | <i>126</i> | \$3,030 | \$36,360 |
| <i>Personal time</i> | <i>hours</i> | <i>34</i> | \$818 | \$9,811 |
| Overtime differential on <i>paid time off</i> | | | * | \$88,880 |
| Retirement contributions, (budget average %) | | | 19% | \$119,746 |
| Health insurance benefits, (budget average per man) | | | \$17,917 | <u>\$215,004</u> |
| Subtotal of Annual Savings | | | <u>\$112,891</u> | \$1,354,690 |

| | | |
|---|-------------|---------------------------|
| Subtotal of Annual Savings (from previous page) | | \$1,354,690 |
| Estimated increase in remaining base wages | 5% | (112,083) |
| Total budgeted base: | \$2,871,927 | |
| Increase in retirement cost | 19% | (21,296) |
| Increased payroll taxes | 8% | <u>(\$8,967)</u> |
| <i>Estimated Annual Savings, net of wage increase</i> | <i>**</i> | <u><u>\$1,212,344</u></u> |

* Differential computed by totaling savings from paid time off: \$177,760 times 50%

**Expenses for training, personal equipment, and other incidentals are not reflected above.

This is page 2 of 2 of the Plan:

Estimated reduction in personnel:

Estimated increase in remaining base wages

12

5%

Cumberland Fire District

Estimated Annual Savings - Converting from a 4 Platoon Shift Model to a 3 Platoon Shift Model

Prepared by Arthur Lambi, Dated August 3, 2015

| <i>Estimated reduction in personnel:</i> | | <u>12</u> | | |
|---|--------------|------------|-------------------------|---------------------------|
| <i>Estimated increase in remaining base wages</i> | | <u>10%</u> | | |
| | | | <u>Per Position</u> | <u>Annual Savings</u> |
| Annual "firefighter" salary | | | \$52,520 | \$630,240 |
| Payroll taxes on wage reductions | | | 8% | \$50,419 |
| EMT Incentives | | | \$1,300 | \$15,600 |
| Longevity payments | | | 4.50% | \$28,361 |
| Clothing allowance | | | \$900 | \$10,800 |
| Life insurance | | | \$150 | \$1,800 |
| Tuition reimbursement | | | \$340 | \$4,080 |
| Bachelor's degree incentive | | | \$1,000 | \$12,000 |
| <i>Vacation days (10 to 14 years)</i> | <i>hours</i> | <i>192</i> | \$4,617 | \$55,406 |
| <i>Sick days</i> | <i>hours</i> | <i>132</i> | \$3,174 | \$38,091 |
| <i>Bereavement leave</i> | <i>hours</i> | <i>48</i> | \$3,174 | \$38,091 |
| <i>Holidays (12 days)</i> | <i>hours</i> | <i>126</i> | \$3,030 | \$36,360 |
| <i>Personal time</i> | <i>hours</i> | <i>34</i> | \$818 | \$9,811 |
| Overtime differential on <i>paid time off</i> | | | * | \$88,880 |
| Retirement contributions, (budget average %) | | | 19% | \$119,746 |
| Health insurance benefits, (budget average per man) | | | \$17,917 | <u>\$215,004</u> |
| Subtotal of Annual Savings | | | <u>\$112,891</u> | \$1,354,690 |

| | | |
|---|-----------|---------------------------|
| Subtotal of Annual Savings (from previous page) | | \$1,354,690 |
| Estimated increase in remaining base wages | 10% | (224,168) |
| Total budgeted base: | | \$2,871,927 |
| Increase in retirement cost | 19% | (42,592) |
| Increased payroll taxes | 8% | <u>(\$17,933)</u> |
| <i>Estimated Annual Savings, net of wage increase</i> | <i>**</i> | <u><u>\$1,069,997</u></u> |

* Differential computed by totaling savings from paid time off: \$177,760 times 50%

**Expenses for training, personal equipment, and other incidentals are not reflected above.

This is page 2 of 2 of the Plan:

Estimated reduction in personnel:

12

Estimated increase in remaining base wages

10%

Cumberland Fire District

Estimated Annual Savings - Converting from a 4 Platoon Shift Model to a 3 Platoon Shift Model

Prepared by Arthur Lambi, Dated August 3, 2015

Estimated reduction in personnel:

Estimated increase in remaining base wages

10

0%

Per
Position

Annual
Savings

| | | | | |
|---|--------------|------------|-------------------------|------------------|
| Annual "firefighter" salary | | | \$52,520 | \$525,200 |
| Payroll taxes on wage reductions | | | 8% | \$42,016 |
| EMT Incentives | | | \$1,300 | \$13,000 |
| Longevity payments | | | 4.50% | \$23,634 |
| Clothing allowance | | | \$900 | \$9,000 |
| Life insurance | | | \$150 | \$1,500 |
| Tuition reimbursement | | | \$340 | \$3,400 |
| Bachelor's degree incentive | | | \$1,000 | \$10,000 |
| <i>Vacation days (10 to 14 years)</i> | <i>hours</i> | <i>192</i> | \$4,617 | \$46,171 |
| <i>Sick days</i> | <i>hours</i> | <i>132</i> | \$3,174 | \$31,743 |
| <i>Bereavement leave</i> | <i>hours</i> | <i>48</i> | \$3,174 | \$31,743 |
| <i>Holidays (12 days)</i> | <i>hours</i> | <i>126</i> | \$3,030 | \$30,300 |
| <i>Personal time</i> | <i>hours</i> | <i>34</i> | \$818 | \$8,176 |
| Overtime differential on <i>paid time off</i> | | | * | \$74,067 |
| Retirement contributions, (budget average %) | | | 19% | \$99,788 |
| Health insurance benefits, (budget average per man) | | | \$17,917 | <u>\$179,170</u> |
| Subtotal of Annual Savings | | | <u><u>\$112,891</u></u> | \$1,128,908 |

| | | |
|---|-------------|---------------------------|
| Subtotal of Annual Savings (from previous page) | | \$1,128,908 |
| Estimated increase in remaining base wages | 0% | 1 |
| Total budgeted base: | \$2,871,927 | |
| Increase in retirement cost | 19% | 0 |
| Increased payroll taxes | 8% | <u>\$0</u> |
| <i>Estimated Annual Savings, net of wage increase</i> | ** | <u><u>\$1,128,909</u></u> |

* Differential computed by totaling savings from paid time off: \$148,133 times 50%

**Expenses for training, personal equipment, and other incidentals are not reflected above.

This is page 2 of 2 of the Plan:

Estimated reduction in personnel:

10

Estimated increase in remaining base wages

0%

Cumberland Fire District

Estimated Annual Savings - Converting from a 4 Platoon Shift Model to a 3 Platoon Shift Model

Prepared by Arthur Lambi, Dated August 3, 2015

| | | | | |
|---|--------------|------------------|-------------------------|---------------------------|
| <i>Estimated reduction in personnel:</i> | | <u><u>10</u></u> | | |
| <i>Estimated increase in remaining base wages</i> | | <u><u>5%</u></u> | | |
| | | | <u>Per Position</u> | <u>Annual Savings</u> |
| Annual "firefighter" salary | | | \$52,520 | \$525,200 |
| Payroll taxes on wage reductions | | | 8% | \$42,016 |
| EMT Incentives | | | \$1,300 | \$13,000 |
| Longevity payments | | | 4.50% | \$23,634 |
| Clothing allowance | | | \$900 | \$9,000 |
| Life insurance | | | \$150 | \$1,500 |
| Tuition reimbursement | | | \$340 | \$3,400 |
| Bachelor's degree incentive | | | \$1,000 | \$10,000 |
| <i>Vacation days (10 to 14 years)</i> | <i>hours</i> | <i>192</i> | \$4,617 | \$46,171 |
| <i>Sick days</i> | <i>hours</i> | <i>132</i> | \$3,174 | \$31,743 |
| <i>Bereavement leave</i> | <i>hours</i> | <i>48</i> | \$3,174 | \$31,743 |
| <i>Holidays (12 days)</i> | <i>hours</i> | <i>126</i> | \$3,030 | \$30,300 |
| <i>Personal time</i> | <i>hours</i> | <i>34</i> | \$818 | \$8,176 |
| Overtime differential on <i>paid time off</i> | | | * | \$74,067 |
| Retirement contributions, (budget average %) | | | 19% | \$99,788 |
| Health insurance benefits, (budget average per man) | | | \$17,917 | <u>\$179,170</u> |
| Subtotal of Annual Savings | | | <u><u>\$112,891</u></u> | \$1,128,908 |

| | | |
|---|-------------|-------------------------|
| Subtotal of Annual Savings (from previous page) | | \$1,128,908 |
| Estimated increase in remaining base wages | 5% | (117,335) |
| Total budgeted base: | \$2,871,927 | |
| Increase in retirement cost | 19% | (22,294) |
| Increased payroll taxes | 8% | <u>(\$9,387)</u> |
| <i>Estimated Annual Savings, net of wage increase</i> | <i>**</i> | <u><u>\$979,892</u></u> |

* Differential computed by totaling savings from paid time off: \$148,133 times 50%

**Expenses for training, personal equipment, and other incidentals are not reflected above.

This is page 2 of 2 of the Plan:

Estimated reduction in personnel:

Estimated increase in remaining base wages

10

5%

Cumberland Fire District

Estimated Annual Savings - Converting from a 4 Platoon Shift Model to a 3 Platoon Shift Model

Prepared by Arthur Lambi, Dated August 3, 2015

Estimated reduction in personnel:

Estimated increase in remaining base wages

| | | <u><u>10</u></u> | | |
|---|--------------|-------------------|-------------------------|---------------------------|
| | | <u><u>10%</u></u> | <u>Per Position</u> | <u>Annual Savings</u> |
| Annual "firefighter" salary | | | \$52,520 | \$525,200 |
| Payroll taxes on wage reductions | | | 8% | \$42,016 |
| EMT Incentives | | | \$1,300 | \$13,000 |
| Longevity payments | | | 4.50% | \$23,634 |
| Clothing allowance | | | \$900 | \$9,000 |
| Life insurance | | | \$150 | \$1,500 |
| Tuition reimbursement | | | \$340 | \$3,400 |
| Bachelor's degree incentive | | | \$1,000 | \$10,000 |
| <i>Vacation days (10 to 14 years)</i> | <i>hours</i> | <i>192</i> | \$4,617 | \$46,171 |
| <i>Sick days</i> | <i>hours</i> | <i>132</i> | \$3,174 | \$31,743 |
| <i>Bereavement leave</i> | <i>hours</i> | <i>48</i> | \$3,174 | \$31,743 |
| <i>Holidays (12 days)</i> | <i>hours</i> | <i>126</i> | \$3,030 | \$30,300 |
| <i>Personal time</i> | <i>hours</i> | <i>34</i> | \$818 | \$8,176 |
| Overtime differential on <i>paid time off</i> | | | * | \$74,067 |
| Retirement contributions, (budget average %) | | | 19% | \$99,788 |
| Health insurance benefits, (budget average per man) | | | \$17,917 | <u>\$179,170</u> |
| Subtotal of Annual Savings | | | <u><u>\$112,891</u></u> | \$1,128,908 |

| | | |
|--|-------------|--------------------------------|
| Subtotal of Annual Savings (from previous page) | | \$1,128,908 |
| Estimated increase in remaining base wages | 10% | (234,672) |
| Total budgeted base: | \$2,871,927 | |
| Increase in retirement cost | 19% | (44,588) |
| Increased payroll taxes | 8% | <u>(\$18,774)</u> |
| <i>Estimated Annual Savings, net of wage increase</i> | ** | <u><u>\$830,875</u></u> |

* Differential computed by totaling savings from paid time off: \$148,133 times 50%

**Expenses for training, personal equipment, and other incidentals are not reflected above.

This is page 2 of 2 of the Plan:

Estimated reduction in personnel:

Estimated increase in remaining base wages

10

10%



DAY IN HISTORY

Today is the 214th day of 2015. There are 151 days left in the year.

this date

■ In 1776, members of the Continental Congress began attaching their signatures to the Declaration of Independence.

■ In 1873, inventor Samuel F. B. Morse successfully tested a cable he had designed for the city of San Francisco.

■ In 1876, frontiersman "Wild Bill" Hickok was shot and killed while playing poker at a saloon in Deadwood, Dakota Territory, by Jack McCall, who was later hanged.

■ In 1909, the original

PROVIDENCE

Elorza moving forward on Fire Department plan

Mayor institutes reorganization after talks stall between city, firefighters

By Tracee M. Herbaugh
Journal Staff Writer

PROVIDENCE, R.I. — The city and the firefighters union did not reach an agreement regarding the Fire Department's reorganization, so Mayor Jorge O. Elorza will be implementing his own plan starting at 8

a.m. on Sunday, according to the mayor's spokesman.

Elorza "would have rather negotiated a deal, but it didn't work out," said spokesman Evan England.

The negotiations over firefighter overtime pay and hours have been fraught for months and came to a head on Saturday evening. Elorza gave the union a 5 p.m. deadline on Saturday to come to an agreement, otherwise he'd implement his plan.

The mayor wants to

change the department from a four-platoon system on an eight-day week to a three-platoon system on a six-day week.

Under the four-platoon system, firefighters have eight-day workweeks, 48 hours over four days, then have four days off. Under the three-platoon system, they will have a six-day workweek, with the same 48 hours over four days, but with two days off. When the hours worked a year are totaled, a firefighter in the

four-platoon system works an average of 42 hours per seven days while in three-platoon system he or she will average 56 hours in a seven-day week.

Elorza said the plan, which is designed to reduce overtime costs by having more firefighters on hand to meet minimum staffing requirements, will be implemented with no layoffs, pay cuts or demotions. He said all previously requested vacations will be honored.

He claims the new system

could save as much as \$5 million a year in overtime starting in fiscal 2017. It avoids overtime by, in effect, increasing a firefighter's average annual workweek by 33 percent. In an attempt to soften that blow, Elorza said, he will also implement an 8-percent pay increase for the firefighters, which will count toward their pensions.

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Retirement Article



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NBC 10 I-Team: At least 40 firefighters retire after Elorza's announcement

Posted: Jul 16, 2015 9:52 PM EDT

Updated: Jul 16, 2015 10:11 PM EDT

By Katie Davis, NBC 10 I-Team Reporter [CONNECT](#)

PROVIDENCE - Dozens of Providence firefighters are suddenly retiring.

Forty-four firefighters retired as of Wednesday, with many of them leaving due to Mayor Jorge Elorza's plan to move the department from four shifts to three longer ones to save on overtime.

That overtime is costing taxpayers \$12 million per year.

Severance checks for retirees' unused sick and vacation time already total more than \$1.2 million, averaging \$36,000 per person.

And that number will grow.

The union said there will be overtime cost because of the missing firefighters.

So, will those costs cancel out the savings Elorza has promised?

Elorza said the city will "absolutely" still come out ahead overall.

"It costs roughly about \$100,000 per firefighter," he said. "Let's say 40 firefighters have retired. That's \$4 million in savings."

Elorza went on to say his administration anticipated that a large number of firefighters would retire after he announced his plan.

"We took this into account," he said. "Every time that there is a change in work schedules or anything significant or a new contract, there always seems to be more retirements. For every firefighter that's retiring, within a three platoon system, this is actually savings to the city."

Paul Doughty, who represents the Providence Firefighters Union, disagrees. He believes there will be "unintended consequences."

In the short term, Doughty said, there will be overtime costs due to retirements. In the long term, he said it might cost the city if the union wins in a court battle.

"It has the potential to be worse," said Doughty. "If we're successful in court, then it will absolutely be worse. But, even in the interim, while we're waiting for the court's decision, overtime will still impact the budget."

Elorza said his numbers tell a different story.

"Under a three platoon system, there likely won't be any overtime, even with more attrition," Elorza said. "There are significant savings."

According to Doughty, however, the total number of retirees could hit 60 or more by the end of the year. He cited Elorza's plan as the reason.

The city and the union will again attempt to negotiate next week.



Town of North Kingstown, Rhode Island

80 Boston Neck Road
North Kingstown, RI 02852-5762
Phone: (401) 294-3331
Fax: (401) 583-4140
Web: www.northkingstown.org

March 10, 2013

To: Town Council

From: Michael Embury
Town Manager

Re: Fiscal Note – Collective Bargaining Agreement
Local 473 (Police) and Town of North Kingstown

Rhode Island General Laws (45-5-22) requires that a fiscal note be submitted to the approving authority for review prior to approving a labor agreement. The Town's negotiating team has recently concluded negotiations for a three year labor contract with Local 473 – Police Union. This agreement was approved by the membership last week. The following is a description and analysis of the fiscal terms and conditions of the agreement:

1. Term: Three years – July 1, 2013 – June 30, 2016
2. Article III – Personnel, Pay and Benefits

Section 3.1 Classification and Pay

New: Effective July 1, 2013 the following will apply:

| | | |
|--------------------------|--------------|-------|
| Administrative Personnel | July 1, 2013 | 1.25% |
| | July 1, 2014 | 2.25% |
| | July 1, 2015 | 2.50% |
| Uniform Personnel | July 1, 2013 | 2.25% |
| | July 1, 2014 | 2.25% |
| | July 1, 2015 | 2.50% |

Total Estimated Cost: (Includes Base Pay, Longevity, Holiday Pay, FICA and Retirement)

| | |
|--------|---|
| Year 1 | 198,103 |
| Year 2 | 260,957 (State retirement slated to increase to 30%; reduced cost if Investment performance improves.) |
| Year 3 | 106,892 |

3 Year total estimate – 565,952

Article 3.4 Insurances

New: Increase in office co-payments as follows:

| | |
|------------|--------------------|
| PCP | from \$10 to \$20 |
| Specialist | from \$10 to \$25 |
| Allergist | from \$15 to \$25 |
| ER | from \$25 to \$100 |
| Urgi Care | from \$10 to \$25 |

Savings of 2 to 4% of premium – per BCBS

Article 3.11 Terminal Pay

Reduction of payout from 1280 hours (total sick and vacation) to 1100 hours any combination.

No short-term savings but potential future savings.

Article 3 – Hours of Work

New: All Administrative Personnel shall work 4 days of 8.5 hours and 1 day of 8 hours for a 42 hour work week; 84 hour 2 week cycle.

Article 3.15 Bereavement Leave

New: Now includes aunt/uncle of employee/spouse.

3. **Amendment of duty exchange language that is approved by the Chief and increases accountability.**
4. **12 hour shift sunset provision is eliminated.**

FIRE CONTRACT FISCAL IMPACT ANALYSIS

3/3/2015

| CONTRACT ITEM | FY 13-14 | FY 14-15 | FY 15-16 | FY 16-17 | FY 17-18 | FY 18-19 | NOTES |
|----------------------------------|-------------|-------------|-------------|-------------|-------------|-------------|---|
| 3 PLATOON/56 HOUR WORK WEEK | (1,700,000) | (1,768,000) | (1,821,040) | (1,875,671) | (1,931,941) | (1,989,900) | |
| HEALTH PLAN - 20% COPAY | | | (203,119) | (207,181) | (211,325) | (215,552) | Savings dependent on plan; 2% Copay increase per year |
| DENTAL PLAN REDESIGN - SINGLE | | | 578 | 578 | 578 | 578 | Increase cost over existing plan |
| DENTAL PLAN REDESIGN - FAMILY | | | 7,334 | 7,334 | 7,334 | 7,334 | Increase cost over existing plan |
| 20% COPAY SAVINGS | | | (3,936) | (3,936) | (3,936) | (3,936) | 20% Copay savings - no dental copay now |
| HEALTH PLAN REDESIGN | | | (97,779) | (99,735) | (101,729) | (103,764) | 8.4% Premium savings; estimated 6% yearly increase |
| SICK LEAVE PAYOUT | | | (129,000) | (134,160) | (138,185) | (142,330) | Decrease from 1250/1440 to 1150 hours |
| ELIMINATION OF FAMILY SICK LEAVE | | | (92,186) | (95,873) | (98,750) | (101,712) | If no immediate family bereavement leave |
| HOLIDAY PAY | | | (68,200) | (70,928) | (73,056) | (75,248) | 10 hours straight hourly rate |
| LONGEVITY SCHEDULE RESTRUCTURE | | | (32,000) | (33,280) | (34,278) | (35,307) | Minimum savings - depending on retirements prior to payouts |
| WAGES | 203,386 | 211,522 | 164,986 | 169,937 | 175,035 | 180,285 | Salary, FICA and Pension Costs |
| NET SETTLEMENT TOTAL | (1,496,614) | (1,556,478) | (2,274,362) | (2,520,764) | (2,593,200) | (2,479,552) | Net settlement savings per fiscal year |



CUMBERLAND FIRE DEPARTMENT
2015-2016 TRANSITION BUDGET --

Approves
2015-2016
Budget

Page 1 of 6

5/12/2015

GROUP TOTALS

| ITEM | 2014-15 Adopted | 2015-16 Proposed |
|----------------------------|--------------------|-----------------------------|
| CONTRACT PAYROLL | \$ 6,215,209 | \$ 5,975,005 \$ (240,204) |
| SALARIES, WAGES CALL FORCE | \$ 68,092 | \$ 68,092 \$ - |
| EQUIPMENT UPGRADE & REPAIR | \$ 230,830 | \$ 203,800 \$ (27,030) |
| DRILLS AND TRAINING | \$ 26,917 | \$ 23,750 \$ (3,167) |
| ADMINISTRATIVE PAYROLL | \$ 277,570 | \$ 248,100 \$ (29,470) |
| ADMINISTRATIVE EXPENSE | \$ 383,624 | \$ 361,450 \$ (22,174) |
| UTILITIES | \$ 305,130 | \$ 319,764 \$ 14,634 |
| STATION | \$ 42,325 | \$ 42,950 \$ 625 |
| RESTRICTED FUNDS | <u>\$ 85,251</u> | <u>\$ 120,100 \$ 34,849</u> |
| | \$ 7,634,948 | \$ 7,363,011 \$ (271,937) |

CUMBERLAND FIRE DEPARTMENT

Page 2 of 6

2015-2016 TRANSITION BUDGET

5/12/2015

CONTRACT PAYROLL

| ITEM | 2014-15 Adopted | 2015-16 Proposed |
|---------------------------------|---------------------|----------------------------------|
| FB Clothing Allowance | \$ 55,602 | \$ 54,900 |
| FB Education Incentive | \$ - | \$ 7,500 |
| FB Education Tuition Cost | \$ 14,167 | \$ 18,000 |
| FB EMT Incentive | \$ - | \$ 80,400 |
| FB Holiday Pay | \$ 100,464 | \$ 164,775 |
| FB Life Insurance | \$ 5,763 | \$ 10,350 |
| FB Longevity Pay | \$ 78,783 | \$ 108,536 |
| Healthcare B/C | \$ 985,299 | \$ 783,662 |
| Healthcare (incl COLA) Retirees | \$ - | \$ 144,000 |
| Healthcare deductions | \$ - | \$ (66,300) |
| Healthcare Dental | \$ - | \$ 67,099 |
| Healthcare Reimbursements | \$ 15,000 | \$ 160,000 |
| Healthcare Vision | \$ - | \$ 5,150 |
| OT | \$ 421,917 | \$ - |
| OT Personal Day | \$ - | \$ 65,184 |
| OT Sick calls Coverage | \$ 47,833 | \$ 79,083 |
| OT Vacation Coverage | \$ 97,417 | \$ 373,848 |
| Payroll Full Time Pension | \$ 565,188 | \$ 738,516 |
| Payroll Full Time Salary | \$ 3,503,137 | \$ 2,871,927 |
| Payroll Taxes | \$ 324,639 | \$ 308,375 |
| | <u>\$ 6,215,209</u> | <u>\$ 5,975,005</u> \$ (240,204) |

CUMBERLAND FIRE DEPARTMENT

Page 3 of 6

2015-2016 TRANSITION BUDGET

5/12/2015

SALARIES, WAGES CALL FORCE

| ITEM | 2014-15 Adopted | 2015-16 Proposed | |
|-----------------------------|--------------------|---------------------|--------|
| Part Timer Program | \$ 20,592 | \$ 20,592 | |
| Uniforms/Clothing Call Dept | \$ 500 | \$ 500 | |
| Volunteers - Call Force | \$ 47,000 | \$ 47,000 | |
| | <u>\$ 68,092</u> | <u>\$ 68,092</u> | \$0.00 |

EQUIPMENT UPGRADE & REPAIR

| | | | |
|---|-------------------|-------------------|-------------|
| Communications Upgrade | \$ 1,167 | \$ 1,000 | |
| Equipment Supplies & Repairs | \$ 11,908 | \$ 7,500 | |
| Equipment Testing and Cert | \$ 2,855 | \$ 2,800 | |
| Fire Alarm | \$ 1,500 | \$ 1,500 | |
| First Aid Equip. Supplies & Expendables | \$ 10,300 | \$ 10,000 | |
| Furnishings | \$ 1,000 | \$ 2,000 | |
| Radio Equip. Upgrade & Repairs & Maint. | \$ 6,683 | \$ 5,000 | |
| Shared Communications | \$ 2,333 | \$ 2,000 | |
| Truck Tires | \$ 1,800 | \$ - | |
| Upgrading & Purchase of Equipment | \$ 44,100 | \$ 30,000 | |
| Vehicle Gas, Oil & Lubricants | \$ 69,617 | \$ 65,000 | |
| Vehicle Maint. & Repairs | \$ 77,567 | \$ 77,000 | |
| | <u>\$ 230,830</u> | <u>\$ 203,800</u> | \$ (27,030) |

CUMBERLAND FIRE DEPARTMENT

Page 4 of 6

2015-2016 TRANSITION BUDGET

5/12/2015

DRILLS AND TRAINING

| ITEM | 2014-15 Adopted | 2015-16 Proposed | |
|----------------------|--------------------|---------------------|------------|
| Drills and Training | \$ 18,417 | \$ 17,750 | |
| FP ands EMS Training | \$ 3,000 | \$ 3,000 | |
| Medical Examinations | \$ 5,500 | \$ 3,000 | |
| | <u>\$ 26,917</u> | <u>\$ 23,750</u> | \$ (3,167) |

ADMINISTRATIVE PAYROLL

| | | | |
|-------------------------------------|-------------------|-------------------|-------------|
| Administrative Staff | \$ 188,495 | \$ 128,900 | |
| Clerk | \$ 7,158 | \$ 3,200 | |
| Committee Members | \$ 39,550 | \$ - | |
| Committee Members - Per Diem | \$ 500 | \$ - | |
| Finance Management Fee | \$ - | \$ 78,000 | |
| Legal | \$ 13,750 | \$ 12,000 | |
| Moderator | \$ 117 | \$ - | |
| Part Time clerks for tax seasons | \$ - | \$ 10,000 | |
| Social security Admin Payroll | \$ 28,000 | \$ 16,000 | |
| Tax Collector Fees | \$ - | \$ - | |
| Tax Expenses Treasurer \$ Collector | \$ - | \$ - | |
| Treasurer Fee | \$ - | \$ - | |
| | <u>\$ 277,570</u> | <u>\$ 248,100</u> | \$ (29,470) |

CUMBERLAND FIRE DEPARTMENT

2015-2016 TRANSITION BUDGET

Page 6 of 6

5/12/2015

| UTILITIES | ITEM | 2014-15 | 2015-16 | | |
|------------------|---|-------------------|-------------------|-----------|--|
| | | Adopted | Proposed | | |
| | Cox | \$ - | \$ 600 | | |
| | Electricity | \$ 26,308 | \$ 35,000 | | |
| | Gas | \$ 750 | \$ 22,000 | | |
| | Hydrant Fees Cumberland & Pawt | \$ 219,364 | \$ 219,364 | | |
| | Sewer Assessment | \$ 2,208 | \$ 2,800 | | |
| | Telephone | \$ 19,000 | \$ 20,000 | | |
| | Utilities | \$ 17,500 | \$ - | | |
| | Water | \$ 20,000 | \$ 20,000 | | |
| | | <u>\$ 305,130</u> | <u>\$ 319,764</u> | \$ 14,634 | |
| | | | | | |
| STATION | Air Cascade Maintenance | \$ 933 | \$ 950 | | |
| | Building Supplies, Repairs & Improvements | \$ 41,392 | \$ 42,000 | | |
| | | <u>\$ 42,325</u> | <u>\$ 42,950</u> | \$ 625 | |
| | | | | | |
| RESTRICTED FUNDS | Expenses - Contingency | \$ 8,000 | \$ 10,000 | | |
| | Capital Improvements - Stat Improve | \$ 3,000 | \$ 42,700 | | |
| | Legal Claims | \$ 6,000 | \$ - | | |
| | Sick Time Pay out | \$ 5,883 | \$ 5,000 | | |
| | Truck Lease Interest | \$ 8,368 | \$ 8,400 | | |
| | Truck Lease Principle | \$ 54,000 | \$ 54,000 | | |
| | | <u>\$ 85,251</u> | <u>\$ 120,100</u> | \$ 34,849 | |

CUMBERLAND FIRE DEPARTMENT

2015-2016 TRANSITION BUDGET

Page 6 of 6

5/12/2015

| UTILITIES | ITEM | 2014-15 | 2015-16 | |
|------------------|---|-------------------|-------------------|-----------|
| | | Adopted | Proposed | |
| | Cox | \$ - | \$ 600 | |
| | Electricity | \$ 26,308 | \$ 35,000 | |
| | Gas | \$ 750 | \$ 22,000 | |
| | Hydrant Fees Cumberland & Pawt | \$ 219,364 | \$ 219,364 | |
| | Sewer Assessment | \$ 2,208 | \$ 2,800 | |
| | Telephone | \$ 19,000 | \$ 20,000 | |
| | Utilities | \$ 17,500 | \$ - | |
| | Water | \$ 20,000 | \$ 20,000 | |
| | | <u>\$ 305,130</u> | <u>\$ 319,764</u> | \$ 14,634 |
| | | | | |
| STATION | Air Cascade Maintenance | \$ 933 | \$ 950 | |
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| | | <u>\$ 42,325</u> | <u>\$ 42,950</u> | \$ 625 |
| | | | | |
| RESTRICTED FUNDS | Expenses - Contingency | \$ 8,000 | \$ 10,000 | |
| | Capital Improvements - Stat Improve | \$ 3,000 | \$ 42,700 | |
| | Legal Claims | \$ 6,000 | \$ - | |
| | Sick Time Pay out | \$ 5,883 | \$ 5,000 | |
| | Truck Lease Interest | \$ 8,368 | \$ 8,400 | |
| | Truck Lease Principle | \$ 54,000 | \$ 54,000 | |
| | | <u>\$ 85,251</u> | <u>\$ 120,100</u> | \$ 34,849 |

CONTRACT
LEFT OUT
BY BRUCE

Please see the CFD Local 2722 CBA on the web site.





NK - Fire Department Details

Nov 19, 2013
Ken Block
8 Atlantic Crossing
Barrington, RI 02806

Chief Fenwick Gardiner, Jr.
FGardinerJr@northkingstown.org
8150 Post Rd.
North Kingstown, RI 02852

To Whom It May Concern:

I am writing today to request information about your fire department pursuant to the Rhode Island Access to Public Records Act, *R.I. Gen. Laws §§ 38-2-1. Et. Seq.*

My strongest preference is for you to deliver to me an electronic response to as many of the questions below as possible in either a spreadsheet, CSV document or Word document as first preferences or PDF format as a secondary preference. Electronic delivery can be made via email and can be sent to me at kblock@simpaticosoftware.com.

Please note that Rhode Island law mandates that Open Records requests be fulfilled electronically if that is asked for and is possible. If it is necessary to send some responses electronically and some in hardcopy form that is fine.

An inability to answer one or more questions should not prevent you from responding to all other questions in this survey.

We have attempted to send this request electronically to you. If you have not received the electronic request and would like us to send one so that you can reply electronically, please contact me at (401) 486-4152. If there is no email in your address above we do not have it.

If any of these questions can only be answered in hardcopy form, please mail the documents to:
Ken Block
8 Atlantic Crossing
Barrington, RI 02806

If you have any questions about any aspect of this request, please phone me on my cell at (401) 486-4152.

Thank you in advance for your prompt response to this request.

All of my very best,

Ken Block

North Kingstown Fire Department

Fire data survey by municipality/fire district

Personnel questions

- 1) How many full time, paid employees are employed by your organization? This number should include all administrative staff including for example secretarial and tax collection and assessment, all levels of management and all full time, professional paid firefighters including EMS staff employed by your organization.
Answer: 61
- 2) How many administrative staff including secretarial, tax collection and assessment or any other administrative functions are employed by your organization?
Answer: 4
- 3) How many management employees (including titles like chief, fire marshal or any other paid full time employee who is not considered administrative but is also not considered a paid, full time fire professional) are employed by your organization?
Answer: 1
- 4) How many paid, full time, professional firefighters (including EMS) are employed by your organization?
Answer: 56
- 5) How many on-call firefighters (not paid, full time professional firefighters but firefighters paid hourly when needed) are employed by your organization?
Answer: 0
- 6) How many unpaid volunteer firefighters are associated with your organization?
Answer: 0
- 7) How many EMS staff in total are employed by your organization?
Answer: 56

Labor contract questions

- 8) Please email me a copy of your most current labor contract. Out of contract
9) What is the percentage of officers (Chiefs, Captains, Lieutenants) to firefighters (Privates)?

Answer: 45/55 ofc to private %

- 10) How many paid holidays do firefighters receive?

Answer: 11

- 11) What is the compensation for holiday if a firefighter is not working on that day?

Answer: same as if on duty

- 12) What is the compensation for a holiday if a firefighter is working on that day?

Answer: 10 x 1.5 hourly rate

- 13) Please list your minimum manning standard and how it has changed over the last ten years
(for example, 2004 3, 2007 4, 2012 5):

Answer: 15 with no change

Answer:

Answer:

Answer:

- 14) What is the health plan for your employees (BC/BS, United, etc)?

Answer: BCBS

- 15) What is the health plan deductible and is the deductible reimbursed by the district?

Answer: 15%

Employee Cost questions

16) In the last full fiscal year, how much did your organization spend on overtime pay in aggregate?

Answer: \$803,183.18

17) Do your paid, full time professional firefighters receive a pharmacy debit and/or credit card which is paid for by your organization and not paid for by your paid, full time, professional firefighters?

Answer: no

18) If yes to #17, please provide the aggregate amount spent for all such pharmacy debit and/or credit cards in the last full fiscal year.

Answer:

19) In the last full fiscal year, what was the actual total amount of money spent for your organization?

Answer: \$7,870,853.00

20) If your organization has issued debt in the form of bonds or other forms of borrowing or has outstanding loans, please provide the aggregate amount of debt owed by your organization.

Answer: unknown

21) How many people are receiving disability pensions due to their work with your organization?

Answer: 2

Scope of Protection questions

22) How many households are inside of the area covered by your organization?

Answer:

23) How many individuals live inside the area covered by your organization?

Answer: 27,500

24) How many businesses are inside of the area covered by your organization?

Answer: 545

25) How many 'fire box' style alarms are installed in buildings covered by your organization?

Answer: 337

26) What is the square mileage of the area covered by your organization?

Answer: 58

Equipment/Vehicle Survey

27) How many active (not closed) fire stations are in your organization?

Answer: 4

28) How many active firefighting trucks are there in total in your organization (engines, tankers, ladders, heavy rescues, hazmat, etc)

Answer: 7

29) How many reserve firefighting trucks are there in total in your organization (engines, tankers, ladders, heavy rescues, hazmat, etc)

Answer: 2

30) How many active rescue vehicles are there in total in your organization?

Answer: 2

31) How many reserve rescue vehicles are there in total in your organization?

Answer: 2

32) How many fireboats are there in total in your organization?

Answer: 2

Annual Rescue/Response calls for the district

33) How many rescue runs were required of your fireboat or boats (if you have any) in the last fiscal year?

Answer: see attachment

34) How many working fires did your organization extinguish in the last fiscal year?

Answer: attachment

35) How many false alarms (calls for fire response where there was no fire) did your organization respond to in the last fiscal year?

Answer: See Attachment

36) How many rescue calls did your organization respond to in the last fiscal year?

Answer: See Attachment

37) For each fire station in your organization, please answer **on a separate page for each active fire station** questions 38 through 49. I have provided pages for 4 stations. Copy blank pages as necessary for additional stations.

38) Name of fire station: Station 1 Public Safety Building

39) Full address of fire station 8150 Post Rd N. Kingstown RI 02852

40) Equipment at station

| Description (Engine, Ladder, Rescue, etc) | Designation (E1, R2, for example) | Reserve (Y/N) |
|---|-----------------------------------|---------------|
| Engine | 1 | N |
| Rescue | 1 | N |
| Special Hazards | 1 | N |
| Brush | 1 | N |
| Command Vehicle | 1 | N |
| Command Vehicle | 2 | N |
| Rescue | 2 | Y |
| | | |
| | | |
| | | |
| | | |

41) Number of rescue calls dispatched to station in last full fiscal year

Answer: _____

42) Number of fire response (non-rescue) calls dispatched to station in last full year

Answer: _____

43) Number of households covered by station

Answer: _____

44) Number of business buildings covered by station

Answer: _____

45) Number of people living in area covered by station

Answer: _____

46) Area in square miles covered by station

Answer: _____

47) Number of EMS staff operating out of this station

Answer: 4

48) Number of professional fire fighting staff (not EMS) operating out of this station

Answer: All are EMS certified (4)

49) Please provide in electronic format if possible call logs for all calls dispatched to this station in the last full fiscal year. Logs should include the date, time, and type of call, as well as any notes attached to call as well as equipment dispatched to respond to each call.

38) Name of fire station: Station 2

39) Full Address of Fire Station: 1865 Boston Neck Rd N.Kingstown,RI

40) Equipment at station

| Description (Engine, Ladder, Rescue, etc) | Designation (E1, R2, for example) | Reserve (Y/N) |
|---|-----------------------------------|---------------|
| Engine | 2 | N |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |

41) Number of rescue calls dispatched to station in last full fiscal year

Answer: See Attachments

42) Number of fire response (non-rescue) calls dispatched to station in last full year

Answer:

43) Number of households covered by station

Answer:

44) Number of business buildings covered by station

Answer:

45) Number of people living in area covered by station

Answer:

46) Area in square miles covered by station

Answer:

47) Number of EMS staff operating out of this station

Answer:

48) Number of professional fire fighting staff (not EMS) operating out of this station

Answer:

49) Please provide in electronic format if possible call logs for all calls dispatched to this station in the last full fiscal year. Logs should include the date, time, and type of call, as well as any notes attached to call as well as equipment dispatched to respond to each call.

38) Name of fire station: Station 3

39) Full Address of Fire Station: 6445 Post Rd N.Kingstown, RI

40) Equipment at station

| Description (Engine, Ladder, Rescue, etc) | Designation (E1, R2, for example) | Reserve (Y/N) |
|---|-----------------------------------|---------------|
| Engine | 3 | N |
| Engine | 6 | N |
| Ladder 1 | 1 | N |
| Rescue | 3 | N |
| Rescue | 4 | Y |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |

41) Number of rescue calls dispatched to station in last full fiscal year

Answer: See Attachment

42) Number of fire response (non-rescue) calls dispatched to station in last full year

Answer: _____

43) Number of households covered by station

Answer: _____

44) Number of business buildings covered by station

Answer: _____

45) Number of people living in area covered by station

Answer: _____

46) Area in square miles covered by station

Answer: _____

47) Number of EMS staff operating out of this station

Answer: _____

48) Number of professional fire fighting staff (not EMS) operating out of this station

Answer: _____

49) Please provide in electronic format if possible call logs for all calls dispatched to this station in the last full fiscal year. Logs should include the date, time, and type of call, as well as any notes attached to call as well as equipment dispatched to respond to each call.

1) Name of fire station Station 5 _____

39) Full Address of Fire Station: 171 Indian Corner Rd N. Kingstown, RI _____

40) Equipment at station

| Description (Engine, Ladder, Rescue, etc) | Designation (E1, R2, for example) | Reserve (Y/N) |
|---|-----------------------------------|---------------|
| Engine | 5 | N |
| Truck | 4 | N |
| Decon Trailer | | N |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |

41) Number of rescue calls dispatched to station in last full fiscal year

Answer: _____

42) Number of fire response (non-rescue) calls dispatched to station in last full year

Answer: _____

43) Number of households covered by station

Answer: _____

44) Number of business buildings covered by station

Answer: _____

45) Number of people living in area covered by station

Answer: _____

46) Area in square miles covered by station

Answer: _____

47) Number of EMS staff operating out of this station

Answer: _____

48) Number of professional fire fighting staff (not EMS) operating out of this station

Answer: _____

49) Please provide in electronic format if possible call logs for all calls dispatched to this station in the last full fiscal year. Logs should include the date, time, and type of call, as well as any notes attached to call as well as equipment dispatched to respond to each call.

North Kingstown Fire Department
Monthly Report Summary - Calender Year
December 2013

| | Total for Month | | Total Year To Date | |
|-----------------------------------|------------------------|-----------------|-----------------------------|-----------------------------|
| | Dec 2013 | Dec 2012 | Jan 2013 To Dec 2013 | Jan 2012 To Dec 2012 |
| Fires | | | | |
| Structure | 4 | 4 | 44 | 50 |
| Brush | 1 | 0 | 34 | 25 |
| Vehicle | 1 | 0 | 17 | 12 |
| <u>Other</u> | <u>1</u> | <u>0</u> | <u>25</u> | <u>14</u> |
| Total Fires | 7 | 4 | 120 | 101 |
| EMS | | | | |
| Medical | 197 | 222 | 2643 | 2524 |
| <u>MVA</u> | <u>14</u> | <u>23</u> | <u>244</u> | <u>248</u> |
| Total EMS | 211 | 245 | 2887 | 2772 |
| Box Alarms | | | | |
| System Malfunction | 7 | 37 | 213 | 306 |
| <u>Malicious/Accidental/Other</u> | <u>20</u> | <u>34</u> | <u>330</u> | <u>300</u> |
| Total Box Alarms | 27 | 71 | 543 | 606 |
| Other | | | | |
| Hazardous Condition | 14 | 14 | 194 | 161 |
| Service Calls/Good Inten | 122 | 69 | 1370 | 992 |
| <u>Other</u> | <u>25</u> | <u>30</u> | <u>374</u> | <u>315</u> |
| Total Other Calls | 161 | 113 | 1938 | 1468 |
| Total Incidents | 406 | 433 | 5488 | 4947 |

Mutual Aid Summary

| | | | | |
|--------------------------------|----|---|-----|----|
| Incidents Mutual Aid Given: | 8 | 5 | 85 | 56 |
| Incidents Mutual Aid Received: | 18 | 9 | 187 | 62 |

Incident Detail Summary

| | | | | |
|-----------------------|---|---|----|----|
| Fire Service Injuries | 5 | 1 | 34 | 24 |
| Fire Service Deaths | 0 | 0 | 0 | 0 |
| Civilian Injuries | 1 | 0 | 5 | 1 |
| Civilian Deaths | 0 | 0 | 0 | 0 |
| Acres Burned | 0 | 0 | 2 | 1 |

12/19/2014

North Kingstown Fire Department
Run Report
2013

| Type of Incident | YTD | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Investigation - Engine Only | 103 | 0 | 0 | 7 | 8 | 5 | 10 | 7 | 13 | 15 | 11 | 25 | 2 |
| 100 Fire, other | 15 | 1 | 3 | 2 | 0 | 4 | 0 | 1 | 0 | 1 | 1 | 1 | 1 |
| 111 Building fire | 27 | 6 | 2 | 5 | 1 | 1 | 1 | 3 | 1 | 1 | 1 | 2 | 3 |
| 113 Cooking fire, confined to container | 12 | 0 | 0 | 4 | 2 | 3 | 0 | 2 | 1 | 0 | 0 | 0 | 0 |
| 114 Chimney or flue fire, confined to chimney or flue | 3 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 0 |
| 116 Fuel burner/boiler malfunction, fire confined | 2 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| 130 Mobile property (vehicle) fire, other | 7 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 2 | 1 | 1 | 0 | 1 |
| 131 Passenger vehicle fire | 8 | 0 | 1 | 2 | 2 | 0 | 0 | 0 | 1 | 2 | 0 | 0 | 0 |
| 134 Water vehicle fire | 2 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 140 Natural vegetation fire, other | 4 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 2 | 1 | 0 |
| 141 Forest, woods or wildland fire | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 |
| 142 Brush, or brush and grass mixture fire | 26 | 0 | 1 | 3 | 5 | 6 | 2 | 3 | 1 | 0 | 1 | 3 | 1 |
| 143 Grass fire | 3 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 |
| 151 Outside rubbish, trash or waste fire | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 154 Dumpster or other outside trash receptacle fire | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 2 | 0 | 0 |
| 160 Special outside fire, other | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 162 Outside equipment fire | 2 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 |
| 200 Overpressure rupture, explosion, overhear other | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 |
| 240 Explosion (no fire), other | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 251 Excessive heat, scorch burns with no ignition | 3 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 |
| 300 Rescue, emergency medical call (EMS) call, other | 159 | 15 | 14 | 8 | 13 | 10 | 9 | 15 | 20 | 4 | 16 | 17 | 18 |
| 311 Medical assist, assist EMS crew | 495 | 58 | 56 | 45 | 43 | 44 | 41 | 51 | 36 | 37 | 27 | 29 | 28 |
| 321 EMS call, excluding vehicle accident with injury | 1934 | 151 | 150 | 141 | 161 | 168 | 176 | 189 | 178 | 168 | 148 | 153 | 151 |
| 322 Vehicle accident with injuries | 93 | 2 | 7 | 6 | 8 | 11 | 12 | 10 | 14 | 5 | 7 | 3 | 8 |
| 323 Motor vehicle/pedestrian accident (MV Ped) | 31 | 5 | 3 | 4 | 3 | 1 | 0 | 7 | 4 | 2 | 0 | 2 | 0 |
| 331 Lock-in (if lock out, use 511) | 7 | 0 | 2 | 0 | 0 | 0 | 1 | 1 | 0 | 1 | 1 | 0 | 1 |
| 342 Search for person in water | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 0 |
| 350 Extrication, rescue, other | 4 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 1 |
| 352 Extrication of victim(s) from vehicle | 4 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 1 | 1 | 0 | 0 |

North Kingstown Fire Department
Run Report
2013

| Type of Incident | YTD | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| 360 Water & ice related rescue, other | 13 | 0 | 0 | 0 | 0 | 2 | 2 | 4 | 3 | 0 | 2 | 0 | 0 |
| 362 Ice Rescue | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 365 Watercraft rescue | 13 | 0 | 0 | 0 | 0 | 2 | 2 | 1 | 4 | 2 | 2 | 0 | 0 |
| 372 Trapped by power lines | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 400 Hazardous condition, other | 2 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 410 Flammable gas or liquid condition, other | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 |
| 411 Gasoline or other flammable liquid spill | 11 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 1 | 1 | 1 | 1 |
| 412 Gas leak (natural gas or LPG) | 30 | 2 | 2 | 3 | 1 | 2 | 0 | 2 | 2 | 2 | 4 | 7 | 3 |
| 413 Oil or other combustible liquid spill | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 420 Toxic condition, other | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 422 Chemical spill or leak | 4 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 1 | 1 |
| 424 Carbon monoxide incident | 24 | 5 | 8 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 4 | 5 |
| 440 Electrical wiring/equipment problem, other | 40 | 3 | 7 | 3 | 1 | 3 | 9 | 5 | 1 | 2 | 4 | 1 | 1 |
| 442 Overheated motor | 5 | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 1 | 0 |
| 444 Power line down | 13 | 2 | 4 | 0 | 0 | 1 | 0 | 3 | 1 | 0 | 2 | 0 | 0 |
| 445 Arcing, shorted electrical equipment | 20 | 4 | 2 | 0 | 1 | 1 | 0 | 5 | 1 | 0 | 1 | 4 | 1 |
| 460 Accident, potential accident, other | 72 | 9 | 5 | 5 | 7 | 5 | 6 | 10 | 5 | 5 | 2 | 8 | 5 |
| 461 Building or structure weakened or collapsed | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 |
| 462 Aircraft standby | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 463 Vehicle accident, general cleanup | 41 | 4 | 2 | 3 | 3 | 4 | 5 | 5 | 2 | 4 | 5 | 4 | 0 |
| 480 Attempted burning, illegal action, other | 20 | 0 | 0 | 4 | 6 | 1 | 1 | 1 | 3 | 2 | 0 | 2 | 0 |
| 481 Attempt to burn | 20 | 0 | 4 | 1 | 2 | 2 | 4 | 0 | 3 | 1 | 1 | 0 | 2 |
| 500 Service Call, other | 965 | 61 | 77 | 60 | 70 | 66 | 99 | 93 | 94 | 101 | 67 | 86 | 91 |
| 510 Person in distress, other | 2 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 |
| 511 Lock-out | 12 | 1 | 3 | 1 | 0 | 1 | 2 | 2 | 2 | 0 | 0 | 0 | 0 |
| 520 Water problem, other | 6 | 1 | 2 | 0 | 0 | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 0 |
| 521 Water evacuation | 7 | 0 | 0 | 1 | 0 | 0 | 4 | 0 | 0 | 0 | 0 | 1 | 1 |
| 522 Water or steam leak | 4 | 0 | 1 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 1 |
| 531 Smoke or odor removal | 3 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

North Kingstown Fire Department
Run Report
2013

| Type of Incident | YTD | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|--|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| 540 Animal problem, other | 2 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 |
| 542 Animal rescue | 2 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 |
| 550 Public service assistance, other | 15 | 0 | 3 | 1 | 1 | 0 | 4 | 2 | 0 | 2 | 1 | 0 | 1 |
| 551 Assist police or other governmental agency | 10 | 1 | 1 | 1 | 0 | 0 | 3 | 0 | 3 | 0 | 1 | 0 | 0 |
| 552 Police matter | 6 | 0 | 0 | 0 | 3 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| 553 Public service | 79 | 13 | 11 | 7 | 2 | 7 | 4 | 7 | 4 | 8 | 2 | 9 | 5 |
| 554 Assist invalid | 107 | 4 | 9 | 10 | 6 | 6 | 8 | 12 | 12 | 5 | 12 | 10 | 13 |
| 561 Unauthorized burning | 11 | 0 | 0 | 2 | 2 | 1 | 1 | 0 | 2 | 1 | 0 | 2 | 0 |
| 571 Cover assignment, standby, moveup | 139 | 5 | 3 | 7 | 11 | 14 | 10 | 8 | 23 | 13 | 15 | 21 | 9 |
| 600 Good intent call, other | 85 | 8 | 5 | 4 | 7 | 7 | 7 | 8 | 10 | 5 | 8 | 8 | 8 |
| 611 Dispatched & canceled en route | 37 | 3 | 9 | 2 | 4 | 2 | 4 | 0 | 3 | 2 | 0 | 4 | 4 |
| 621 Wrong location | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 |
| 631 Authorized controlled burning | 102 | 8 | 5 | 11 | 0 | 25 | 6 | 5 | 11 | 14 | 7 | 6 | 4 |
| 650 Steam, other gas mistaken for smoke, other | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 |
| 651 Smoke scare, odor of smoke | 24 | 1 | 4 | 1 | 0 | 3 | 1 | 5 | 0 | 3 | 0 | 3 | 3 |
| 652 Steam, vapor, fog or dust thought to be smoke | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 661 EMS call, party transported by non-fire agency | 11 | 0 | 1 | 2 | 1 | 0 | 1 | 1 | 2 | 1 | 0 | 1 | 1 |
| 671 Hazmat release investigation w/ no hazmat | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 700 False alarm or false call, other | 10 | 0 | 2 | 0 | 0 | 2 | 2 | 1 | 0 | 2 | 0 | 0 | 1 |
| 710 Malicious, mischievous false call, other | 3 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 |
| 711 Municipal alarm system, malicious false alarm | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 712 Direct tie to FD, malicious/false alarm | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 730 System malfunction, other | 77 | 19 | 11 | 19 | 2 | 4 | 9 | 3 | 3 | 4 | 0 | 3 | 0 |
| 731 Sprinkler activation due to malfunction | 10 | 1 | 1 | 1 | 0 | 0 | 0 | 1 | 3 | 1 | 0 | 2 | 0 |
| 733 Smoke detector activation due to malfunction | 5 | 2 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 1 |
| 734 Heat detector activation due to malfunction | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 |
| 735 Alarm system sounded due to malfunction | 109 | 8 | 22 | 5 | 3 | 12 | 8 | 8 | 8 | 5 | 10 | 14 | 6 |
| 736 CO detector activation due to malfunction | 10 | 0 | 3 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 2 | 3 | 0 |
| 741 Sprinkler activation, no fire - unintentional | 18 | 3 | 5 | 1 | 0 | 2 | 2 | 0 | 1 | 1 | 2 | 0 | 1 |

North Kingstown Fire Department
Run Report
2013

| <u>Type of Incident</u> | <u>YTD</u> | <u>Jan</u> | <u>Feb</u> | <u>Mar</u> | <u>Apr</u> | <u>May</u> | <u>Jun</u> | <u>Jul</u> | <u>Aug</u> | <u>Sep</u> | <u>Oct</u> | <u>Nov</u> | <u>Dec</u> |
|--|-------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|
| 743 Smoke detector activation, no fire - unintentional | 14 | 2 | 2 | 2 | 0 | 0 | 0 | 2 | 2 | 2 | 1 | 0 | 1 |
| 744 Detector activation, no fire - unintentional | 27 | 5 | 2 | 0 | 1 | 1 | 1 | 3 | 5 | 3 | 2 | 2 | 2 |
| 745 Alarm system sounded, no fire - unintentional | 215 | 12 | 17 | 9 | 15 | 17 | 12 | 31 | 21 | 21 | 24 | 26 | 10 |
| 746 Carbon monoxide detector activation, no CO | 37 | 7 | 10 | 1 | 0 | 1 | 0 | 2 | 2 | 2 | 3 | 4 | 5 |
| 800 Severe weather or natural disaster, other | 3 | 0 | 2 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 813 Wind storm, tornado/hurricane assessment | 3 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 900 Special type of incident, other | 12 | 1 | 1 | 1 | 2 | 2 | 1 | 2 | 0 | 1 | 0 | 0 | 1 |
| 911 Citizen complaint | 6 | 0 | 3 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 1 | 0 | 0 |
| Total Runs: | 5488 | 442 | 500 | 404 | 487 | 463 | 479 | 530 | 516 | 461 | 404 | 476 | 406 |

Mutual Aid

| | | | | | | | | | | | | | |
|---------------------|-----|---|----|----|----|----|----|----|----|----|----|----|----|
| Mutual aid given | 85 | 3 | 2 | 9 | 8 | 6 | 10 | 11 | 8 | 8 | 4 | 8 | 8 |
| Mutual aid received | 187 | 6 | 13 | 13 | 10 | 15 | 8 | 18 | 29 | 22 | 17 | 18 | 18 |

North Kingstown Fire Department
Run Report
2013

| Type of Incident | YTD | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Investigation - Engine Only | 103 | 0 | 0 | 7 | 8 | 5 | 10 | 7 | 13 | 15 | 11 | 25 | 2 |
| 100 Fire, other | 15 | 1 | 3 | 2 | 0 | 4 | 0 | 1 | 0 | 1 | 1 | 1 | 1 |
| 111 Building fire | 27 | 6 | 2 | 5 | 1 | 1 | 1 | 3 | 1 | 1 | 1 | 2 | 3 |
| 113 Cooking fire, confined to container | 12 | 0 | 0 | 4 | 2 | 3 | 0 | 2 | 1 | 0 | 0 | 0 | 0 |
| 114 Chimney or flue fire, confined to chimney or flue | 3 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 0 |
| 116 Fuel burner/boiler malfunction, fire confined | 2 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| 130 Mobile property (vehicle) fire, other | 7 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 2 | 1 | 1 | 0 | 1 |
| 131 Passenger vehicle fire | 8 | 0 | 1 | 2 | 2 | 0 | 0 | 0 | 1 | 2 | 0 | 0 | 0 |
| 134 Water vehicle fire | 2 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 140 Natural vegetation fire, other | 4 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 2 | 1 | 0 |
| 141 Forest, woods or wildland fire | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 |
| 142 Brush, or brush and grass mixture fire | 26 | 0 | 1 | 3 | 5 | 6 | 2 | 3 | 1 | 0 | 1 | 3 | 1 |
| 143 Grass fire | 3 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 |
| 151 Outside rubbish, trash or waste fire | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 154 Dumpster or other outside trash receptacle fire | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 2 | 0 | 0 |
| 160 Special outside fire, other | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 162 Outside equipment fire | 2 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 |
| 200 Overpressure rupture, explosion, overheat other | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 |
| 240 Explosion (no fire), other | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 251 Excessive heat, scorch burns with no ignition | 3 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 |
| 300 Rescue, emergency medical call (EMS) call, other | 159 | 15 | 14 | 8 | 13 | 10 | 9 | 15 | 20 | 4 | 16 | 17 | 18 |
| 311 Medical assist, assist EMS crew | 495 | 58 | 56 | 45 | 43 | 44 | 41 | 51 | 36 | 37 | 27 | 29 | 28 |
| 321 EMS call, excluding vehicle accident with injury | 1934 | 151 | 150 | 141 | 161 | 168 | 176 | 189 | 178 | 168 | 148 | 153 | 151 |
| 322 Vehicle accident with injuries | 93 | 2 | 7 | 6 | 8 | 11 | 12 | 10 | 14 | 5 | 7 | 3 | 8 |
| 323 Motor vehicle/pedestrian accident (MV Ped) | 31 | 5 | 3 | 4 | 3 | 1 | 0 | 7 | 4 | 2 | 0 | 2 | 0 |
| 331 Lock-in (if lock out, use 511) | 7 | 0 | 2 | 0 | 0 | 0 | 1 | 1 | 0 | 1 | 1 | 0 | 1 |
| 342 Search for person in water | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 0 |
| 350 Extrication, rescue, other | 4 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 1 |
| 352 Extrication of victim(s) from vehicle | 4 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 1 | 1 | 0 | 0 |

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| <u>Type of Incident</u> | <u>YTD</u> | <u>Jan</u> | <u>Feb</u> | <u>Mar</u> | <u>Apr</u> | <u>May</u> | <u>Jun</u> | <u>Jul</u> | <u>Aug</u> | <u>Sep</u> | <u>Oct</u> | <u>Nov</u> | <u>Dec</u> |
|---|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|
| 360 Water & ice related rescue, other | 13 | 0 | 0 | 0 | 0 | 2 | 2 | 4 | 3 | 0 | 2 | 0 | 0 |
| 362 Ice Rescue | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 365 Watercraft rescue | 13 | 0 | 0 | 0 | 0 | 2 | 2 | 1 | 4 | 2 | 2 | 0 | 0 |
| 372 Trapped by power lines | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 400 Hazardous condition, other | 2 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 410 Flammable gas or liquid condition, other | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 |
| 411 Gasoline or other flammable liquid spill | 11 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 1 | 1 | 1 | 1 |
| 412 Gas leak (natural gas or LPG) | 30 | 2 | 2 | 3 | 1 | 2 | 0 | 2 | 2 | 2 | 4 | 7 | 3 |
| 413 Oil or other combustible liquid spill | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 420 Toxic condition, other | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 422 Chemical spill or leak | 4 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 1 | 1 |
| 424 Carbon monoxide incident | 24 | 5 | 8 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 4 | 5 |
| 440 Electrical wiring/equipment problem, other | 40 | 3 | 7 | 3 | 1 | 3 | 9 | 5 | 1 | 2 | 4 | 1 | 1 |
| 442 Overheated motor | 5 | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 1 | 0 |
| 444 Power line down | 13 | 2 | 4 | 0 | 0 | 1 | 0 | 3 | 1 | 0 | 2 | 0 | 0 |
| 445 Arcing, shorted electrical equipment | 20 | 4 | 2 | 0 | 1 | 1 | 0 | 5 | 1 | 0 | 1 | 4 | 1 |
| 460 Accident, potential accident, other | 72 | 9 | 5 | 5 | 7 | 5 | 6 | 10 | 5 | 5 | 2 | 8 | 5 |
| 461 Building or structure weakened or collapsed | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 |
| 462 Aircraft standby | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 463 Vehicle accident, general cleanup | 41 | 4 | 2 | 3 | 3 | 4 | 5 | 5 | 2 | 4 | 5 | 4 | 0 |
| 480 Attempted burning, illegal action, other | 20 | 0 | 0 | 4 | 6 | 1 | 1 | 1 | 3 | 2 | 0 | 2 | 0 |
| 481 Attempt to burn | 20 | 0 | 4 | 1 | 2 | 2 | 4 | 0 | 3 | 1 | 1 | 0 | 2 |
| 500 Service Call, other | 965 | 61 | 77 | 60 | 70 | 66 | 99 | 93 | 94 | 101 | 67 | 86 | 91 |
| 510 Person in distress, other | 2 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 |
| 511 Lock-out | 12 | 1 | 3 | 1 | 0 | 1 | 2 | 2 | 2 | 0 | 0 | 0 | 0 |
| 520 Water problem, other | 6 | 1 | 2 | 0 | 0 | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 0 |
| 521 Water evacuation | 7 | 0 | 0 | 1 | 0 | 0 | 4 | 0 | 0 | 0 | 0 | 1 | 1 |
| 522 Water or steam leak | 4 | 0 | 1 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 1 |
| 531 Smoke or odor removal | 3 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |





Berkshire Advisors, Inc.
General Management Consultants

NK — **FIREFIGHTER SCHEDULING**

Prepared for the
Town of North Kingstown, Rhode Island

December 6, 2010

This report is divided into four sections. The first section presents background information related to firefighter scheduling. The second section details general findings related to firefighter scheduling. The third section presents benchmark and survey findings and the last section provides a summary of the report.

A - BACKGROUND

Historically firefighters have worked a longer work week than other municipal employees because the nature of their work is so unique. Unlike other professions where there is an expectation that workers be active and productive throughout their work shift, there has never been an expectation that firefighters be productive every hour that they work. Instead there is a recognition that firefighters are paid to be available when they are needed and that as long as they are adequately trained and prepared to be effective when responding to incidents they do not need to be active and productive between calls. Because they are paid for "availability" rather than "productivity" the preponderance of paid firefighters in most parts of the country work a longer work week than other employees. From the perspective of the firefighters this is reasonable because the number of productive hours per shift (that is, time spent training and responding to incidents) is relatively low and they can be paid for sleeping while on duty. From the perspective of management, the longer workweek is equitable because it adjusts for the fact that firefighter productivity is low and unlike other city workers firefighters are being paid for their availability to respond to calls.¹ A longer work week for firefighters also creates more equity with other municipal employees – such as police officers – who are expected to be productive throughout their shift and are not paid to sleep and watch TV for part of their workdays.

The expectation that firefighters work a longer workweek than other employees has a long historical precedent. Firefighter work schedules have evolved slowly from the days when a single complement of firefighters ate and slept at the station seven days a week. After World War I the schedules for firefighters was reduced to eighty-four hours by adding a second platoon. Since that time, work schedules have evolved into a range of average workweeks of between 48 and 72 hours with a myriad of options. Although FLSA was passed in 1938 to establish guidelines for employment conditions, it was not until the ruling in the Garcia vs. San Antonio Metropolitan Transit Authority case in 1985, that the act was applied to public employees. Legislation passed in response to the Garcia ruling included special provisions for firefighter compensation to recognize the unique nature of fire operations positions. The average workweek for firefighters over a 28 day period above which overtime or compensatory time needed to be provided was set at 53 hours a week (not the 40 hour work week established for other municipal employees). Essentially, therefore, the FLSA institutionalizes the historical recognition that firefighters are paid more for "availability" than "productivity" and that it is therefore reasonable to expect them to work a longer work week than other municipal employees work.

¹ If one thinks in terms of firefighters being paid to be "on call" the fact that the cost per hour for firefighter services is lower than for positions assigned to a shorter-work week makes sense. Indeed, in most jurisdictions police officers and other staff who are paid to be on call receive relatively low payments unless they are actually called out.

B - GENERAL FINDINGS

General findings are presented in four parts. The first part discusses the 24 hour shift schedule. The second part discusses the approaches fire departments use to address administrative challenges associated with implementing the 24-hour shift schedule. The third part details various shift configurations utilized by fire departments. The final part discusses alternative approaches to compensating firefighters.

24-HOUR SHIFT SCHEDULE

A 24-hour schedule has been and continues to be the dominant schedule² for full-time paid firefighters in most parts of the country. There are administrative, practical, and management reasons that few departments that implement a 24-hour schedule ever change this schedule. From an administrative perspective, the schedule simplifies the implementation of the 53-hour week established by FLSA. Over a 28 day period, a firefighter who works a 24-hour on, and 48 hour off schedule will work an average of 56 hours per week. To comply with FLSA, managers can simply adjust the core schedule – by giving firefighters extra time off or paying overtime. Other shift schedules that would result in a 53 hour week would be much more difficult to manage. Second, the 24-hour schedule has been maintained in most fire departments because the firefighters like it. The schedule accommodates the expectation that they sleep on the job and reduces the number of days they have to report to work each month. (Under most 24-hour shift schedules firefighters report to work only nine or ten days a month two of which are on weekends. By contrast, under North Kingstown's current schedule firefighters report to work 16 days a month – five of which are either Saturdays or Sundays.) The 24-hour schedule also limits commuting time and costs and provides firefighters with a substantial amount of uncommitted time that they can devote to other pursuits (many firefighters use this time to run businesses or work second jobs). Finally, from a management perspective the 24-hour shift supports unit cohesion,³ reduces sick time usage⁴ and reduces the number of transitions between shifts (and time spent on such activities as checking equipment.)

ADMINISTRATIVE CHALLENGES

As discussed, adjusting the 56-hour a week schedule that comes with a 24 hour day to a 53-hour work schedule creates some administrative challenges. A range of approaches to addressing these challenges has been developed. Some departments provide firefighters

² A survey conducted by the National Fire Academy in March 1999 indicated that 61 percent of responding departments worked a 24 hours on- 48 hours off schedule, 10 percent worked a 48 hours on- 96 hours off schedule; 16 percent worked other variations of a 24 hour shift rotation and 12 percent worked a 10-10-14-14 (two 10-hour days on, two 14-hour days on followed by four days off) schedule.

³ "Unit cohesion" refers to firefighter teamwork. This cohesion is nurtured by 24-hour shifts as firefighters live together for a long period, plan and eat meals together, spend free time together and share sleeping quarters.

⁴ Reductions in sick time usage when a 24-hour schedule is implemented is cited in several studies including: Mims, Leanna. (1999) "Overtime Cost Reduction With Alternative Work Schedules", An Applied Research Project for National Fire Academy; and Burton, Alan. (1995, January/February). Schedules, schedules and more schedules. *9-1-1 Magazine*, 18-21.

additional time off (called "Kelly days"⁵) to compensate for the additional hours of work each week. Other departments have developed a compensation structure for firefighters that includes payment for an average of three hours of overtime each week.

SHIFT CONFIGURATIONS

The most prevalent 24-hour shift schedule is a 24-48 schedule in which a firefighter is on duty for one 24-hour shift and then has two days (i.e. 48 hours) off. A second 24-hour shift rotation is called the "3s and 4s" or "California" or "Santa Monica" schedule. Many departments prefer this schedule because it provides for a regular rotation of 96 hours (i.e. four days) off duty. In the "3s and 4s" rotation, firefighters work a nine day rotation of 24 hours on, 24 hours off, 24 hours on, 24 hours off, 24 hours on, 96 hours off. Another 24-hour schedule option employed by many departments is a 12-day rotation of 24 hours on, 24 hours off, 24 hours on, 48 hours off, 24 hours on, 24 hours off, 24 hours on, 96 hours off.

Over the past 10 years, an additional shift schedule has gained increasing popularity, the 48-96 schedule. In this schedule firefighters are on duty for 48 hours (i.e. two days) and then off duty for 96 hours (i.e. four days). Firefighters view this schedule as particularly advantageous because it provides for longer stretches of consecutive days off and reduces commuting time. Municipalities where this schedule has been instituted have experienced reduced use of sick time by employees with a resulting reduction in overtime costs⁶. They have also documented efficiencies in reduced transition between shifts, reduced trips into the community to make purchases and enhanced accountability for supplies and equipment.

ALTERNATIVE APPROACHES TO COMPENSATING FIREFIGHTERS

Resistance to paying firefighters to sleep has been dealt with in some jurisdictions by paying firefighters at a lower hourly rate when they are asleep. Under FLSA, employers may choose to pay firefighters – or other employees who are paid for their availability and allowed to sleep on the job (e.g., overnight staff in a residential care facility) – at a lesser hourly rate for the time spent resting. These calculations can be complicated. In a fire department, for example, fighters would be paid one hourly rate of pay for the hours during which they are expected to be productive, including time spent responding to calls, training, performing inspections, completing pre-fire plans and other documentation and performing other duties in the fire station and a reduced rate of pay, typically comparable to that paid for on-call firefighters and consistent with federal minimum wage, for hours spent sleeping. This provision is an option regardless of whether firefighters are working a 24-shift schedule or a shorter shift schedule.

Please note that making such adjustments is unnecessary in a fire department with a 53-hour work week. In such department's the longer work week takes into account the fact that

⁵ A Kelly day is a day off given to firefighters to reduce their hours worked in a pay period. It is named a "Kelly" day because Captain Kelly of the Chicago Fire Department devised the 24 hours on, 48 hours off schedule.

⁶ Reductions in sick time usage and as a result overtime when a 24 hour schedule is implemented are cited in several studies including: Mims, Leanna. (1999) "Overtime Cost Reduction With Alternative Work Schedules", An Applied Research Project for National Fire Academy; and Burton, Alan. (1995, January/February). Schedules, schedules and more schedules. *9-1-1 Magazine*, 18-21.

The departments that responded to the survey employ an average of 39.4 firefighters – the number of firefighters employed ranges between 21 and 74.

RESPONSES TO CORE SURVEY ITEMS

Survey respondents were asked a series of questions to gather information about their department and the scheduling approaches they used.

The 24-48 schedule (i.e. 24 hours on followed by 48 hours off) was the most common schedule used by these departments.

| | 24/48 | 9 Day Cycle 24 Hour Shift Rotation | 12 DayCycle 24 Hour Shift Rotation |
|-------------------------------------|-------|--|--|
| What is the current shift schedule? | 66.6% | 25.0% | 8.4% |

On average firefighters in benchmark departments worked 53.0 hours per week with 50 percent of departments paying firefighters three hours of overtime per week as part of their negotiated salary (the difference between the 56 hour workweek and the 53 hour FLSA week) rather than providing additional time off in the form of "Kelly" or debit days. The range of hours per week ranged from a low of 48 hours to 56 hours per week. Two departments who currently work 56 hour weeks indicated that over the past two years they had discontinued the use of "Kelly" days and had instituted built in overtime. They did this to eliminate the scheduling challenges associated with using Kelly days to provide additional time off for firefighters. In fact, all departments that worked a 56 hour week with built in overtime indicated that this model was more efficient as the cost of three hours of overtime per week per firefighter was less than the cost of employing additional firefighter positions to provide the coverage needed to replace firefighters not working due to "Kelly" time off⁸.

The level of satisfaction with the 24-hour shift schedule was very high across all departments surveyed. All respondents⁹ indicated the firefighters in their departments were satisfied or very satisfied with the current work schedule. Likewise, 100 percent of respondents indicated their staff would be dissatisfied or very dissatisfied with a 42 hour a week schedule in which they would work two 10-hour days followed by two 14-hour days, followed by four days off. (All survey respondents also indicated that a 10-10-14-14 schedule had never been proposed by firefighters in negotiations.)

⁸ This statement is also supported by both a study completed for the National Fire Academy: Frazier, Gary. (1999) Alternative Work Schedules - Is This The Answer To Increased Efficiency, Safety and Productivity? An Applied Research Project for National Fire Academy and a study completed for the International Association of Firefighters: Forbes, R. K. (1999, April). "Report on shift schedule information".

⁹ Of the twelve benchmark departments interviewed for the survey, nine chiefs, two captains and one lieutenant were interviewed. In all cases, the chief was contacted first. In three cases the chief then transferred the call to the officer responsible for scheduling.

| | Strongly Disagree | Disagree | Neutral | Agree | Strongly Agree | Strongly Disagree/ Disagree | Strongly Agree/ Agree |
|---|-------------------|----------|---------|-------|----------------|-----------------------------|-----------------------|
| To what extent do you agree or disagree with the following statement, "The current work schedule enhances recruitment of new firefighters"? | 0.0% | 0.0% | 25.0% | 75.0% | 0.0% | 0.0% | 75.0% |
| To what extent do you agree or disagree with the following statement "The current work schedule enhances the retention of existing firefighters"? | 0.0% | 0.0% | 16.6% | 75.0% | 8.3% | 0.0% | 83.3% |

RESPONSES TO OPEN-END SURVEY QUESTIONS

Respondents were also asked to answer several open-ended questions to gather information related to mitigating fatigue on 24-hour shifts, training, advantages of 24-hour shift for firefighters, advantages of 24-hour shift for the department and municipality, and disadvantages of the 24-hour shift.

Mitigating Fatigue On 24-Hour Shifts

In response to the question, "What steps do you take to mitigate potential problems with firefighter fatigue associated with working 24-hour day?" three respondents indicated that it is the shift commander's responsibility to ensure firefighters are rotated between EMS apparatus and pumpers/engines and trucks. Two of these respondents also indicate their departments will postpone training or in-service inspections to allow for extra rest time if call volume during the night unduly interrupts sleep or a major fire call occurs which requires additional recovery time. Eight respondents indicated that fatigue is rarely a problem because the volume of calls received at night is low.

Training

In response to the question "In what ways does the 24-hour work schedule enhance training?" respondents indicated the schedule provides flexibility to ensure training can be provided each shift, regardless of call volume. They also indicated that the schedule provides flexibility to perform inspections during evening hours in restaurants and bars to ensure compliance with occupancy and fire exit requirements as downtimes can be staggered throughout the day. Respondents also indicated the schedule enhances on the job training because training can occur naturally throughout the extended shift. Respondents also indicated that with the 24-hour day, weather has less of an impact on training than would be the case if another shift schedule were employed because on very hot days when the weather precludes strenuous training and on snowy, icy days where calls for service is higher during the day due to traffic accidents, training can be scheduled during early evening hours.

Benefits To Firefighters

Respondents indicate the primary benefits of the 24-hour shift to firefighters are reporting to work on fewer days, reporting to work on fewer weekend days, and having more time away from work. Another benefit identified was the decreased time and money spent on commuting. In addition, the ability to work another job and the ability to provide childcare while a spouse is working were identified as benefits.

Benefits To The Department

Respondents identified a number of benefits to the 24-hour shift for the department as a whole. This included team and crew continuity (especially in departments that work the 56-hour week where substitutions for time off are less frequent), fewer shift changes and decreased out of service time for shift change that could delay response time. Another benefit noted was that the longer shift made it easier to move staff between EMS units and suppression units. Doing so facilitates efforts to keep EMS skills sharp, reduces the total number of calls any one firefighter responds to, and helps to optimize both the time and quality of sleep for all firefighters assigned to the shift. Respondents also indicated that the 24 hour shift decreases the time firefighters spend on non-firefighting duties including changing bedding, setting out turnout gear, and shopping for groceries.

Benefits of the 24-hour shift to municipalities is a documented decrease in the use of sick time, decreased overtime expenditures, and minor reductions in laundry costs.

The only disadvantages to the 24-hour shift identified by respondents related to overtime and shift trades. The departments that employ the nine shift and 12 shift rotations indicate they have policies in place that preclude firefighters from work more than 72 consecutive hours. Three departments with 24/48 schedules indicate they break up overtime shifts into 12 hour segments to ensure no firefighter is working more than 36 consecutive hours. Other indicated they have policies related to overtime and shift trades to ensure no firefighter works more than 72 consecutive hours.

D – SUMMARY

Moving to a 24-hour shift schedule and a 56-hour workweek reflects the reality that firefighters are paid for their availability not their productivity and is consistent the schedules employed by fire departments in most parts of the country. Establishing such a schedule facilitates management, enhances equity with other municipal workers, and, after a period of adjustment, will likely be desired by employees. (In more than 26 years of consulting with fire departments, Berkshire Advisors' consultants do not recall a single firefighter working a 24-hour schedule who advocated in interviews for a change to a 10-10-14-14 schedule.) If the North Kingstown Fire Department maintains the 42-hour week, then the perspective that firefighters are paid for availability during low activity periods should be adjusted. One alternative would be to establish the expectation that firefighters work productively on activities that benefit the town during each hour that they work. Under this alternative, firefighters would no longer be allowed to sleep, recreate or watch TV while on duty. Alternatively, different hourly wage rates could be established for time spent on productive activities and time spent being "available."



Response to City Ergonomics Department report on the 24 hour shift.

"The research into fatigue, circadian rhythm, performance and sleep does not support a shift schedule in which workers must potentially be attentive and available for extremely heavily demanding work for 24 consecutive hours."

All independent scientific research conducted specifically on work schedules and their effects on firefighters, have all concluded that the 24 hour shift is better than the rotating night/day cycle and it is healthier than the 10 hour day/ 14 hour night shift schedule.

There are only a handful of studies that were conducted on shiftwork and firefighters. The study of shiftwork and its effects on health is a relatively new field of research, and because emergency personnel comprise such a small portion of the general shiftworking population, there is a very small number of them.

The following are a list of the only known world wide researchers that conducted studies dealing directly with shiftwork and firefighters. Their independent scientific studies were provided to the City of Toronto by Local 3888 in their submission.

Dr. L. Glazner, Columbia University, and UCLA conducted the only large scale study of the effect of shiftwork on firefighters. She is the only researcher to have studied firefighters in North America that worked both the 24 and the 10/14 schedule.

Dr. D. Tepas, University of Connecticut, conducted studies of firefighters in a private northeastern university, on an 8 hour shift and 10/14 schedule.

Dr. M. Haarma, Finnish institute of Occupational Health and Safety, studied the suitability of the 24 hour shift for firefighters.

Dr. T. Motohashi, University of Tokyo, conducted studies on the effects of the 24 hour shift and the rotating 8 hour shift on the circadian rhythm of Tokyo Fire Department paramedics.

"Of all the documents provided by Local 3888 from L.K. Glazner, only one appears in a peer-reviewed journal. Much of the information provided by Local 3888 is testimonial in nature, basically saying "firefighters want this schedule therefore they will be happier and healthier as a result". I have focused primarily upon peer reviewed, scientific research articles in forming my opinion."

The information provided by Local 3888 applied directly to firefighting and shiftwork. As firefighting is a unique occupation, general assumptions and conclusions that normally may apply to the general shiftworking population, as drawn by City Ergonomics department, cannot be applied to firefighters.

All scientific studies on shiftwork rely on subjective scales, which are reported by the subjects. It has been widely reported, by the evidence provided by Local 3888, that

Abstracts

“Shiftwork and its effects on fire fighters” Journal of NYSNA, September 1988

Proceedings

“Health and Circadian Rhythm in Firefighters” National Symposium of Nursing Research , 1988

“Shiftwork in Essential Services”, 15th Intern. Occupational Health Conference, Singapore, 2000

Background

“Firefighting is characterized by very physically demanding bouts of work with longer periods of stand-by where workers must be ready to respond quickly. Many of the physical demands of fire fighting such as lifting, carrying, pushing/pulling and gripping are very heavy, although they maybe performed only very intermittently. The Job Demands Analysis performed by the ergonomics staff at the City rates the following psychological and cognitive demands high for firefighting duties: attention to detail, performance of multiple tasks, exposure to environmental stimuli, emotional situations, responsibility and accountability and memory.”

The same Job Demands Analysis considering all physical, psychological and cognitive demands must be applied to our current shift which due to consecutive nights and current realities will in our opinion magnify the problems.

Firefighting is a unique occupation which has been described by Dr. R. Beaton of the University of Washington, as a High Demand/Low Control occupation, i.e. requiring repeated demands placed on firefighters with little choice of assignments. These job characteristics are the “antecedents to decreased job satisfaction, and increased exhaustion, depression, and burnout. Firefighters are heavily dependent on teamwork to achieve goals.

“Fighting fires is characterized by urgency to complete tasks as quickly as possible. As such timed testing is done in pre-employment testing because speed of firefighter’s response is critical.”

Fighting fires is characterized by urgency to complete tasks as SAFELY as possible. On the fireground, or as a matter of fact in all situations, firefighters constantly have to fight the temptation to RUSH tasks or assignments. Firefighters have to complete tasks as quickly as possible but never losing sight of safety, which requires constant and careful assessment of all surroundings on the fireground. Timed testing in pre-employment is to assess a person’s fitness level, and has nothing to do with evaluating speed response application in the “real firefighting world”

“The majority of operations in firefighting fall into the “extremely heavy” category, physiologically speaking. Ninety percent of operations investigated (Shaw and Gledhill, 1998) fall into this category. “Jobs that include tasks in the heavy, very heavy and extremely heavy categories do not lend themselves to extended hours of work without job redesign to reduce the effort (Ergonomics Group Eastman Kodak, 1986). It is very difficult and in many cases impossible to reduce the effort of many job tasks in firefighting.”

The occupation of firefighting is not only demanding physically, but also emotionally and psychologically. The occupation of firefighting in relation to working schedules needs to be evaluated in light of the careful analysis of the work/life balance requirements of firefighters. Since firefighting is such a unique occupation unlike any other, it cannot be compared or assessed against standards that are normally applied to other occupations. Again, all demand assessments must be applied considering all aspects of both our current shift and the 24 hour to ensure accuracy, not speculation. The associations submitted information is quantified by shift trial results all over North America and decisions rendered by arbitrators and judges. Over 75% of all U.S. firefighters are currently working 24 hour shifts with success and not one department that entered into a trial has reverted to their former shift.

Fatigue

“One of the significant concerns with a 24 hour shift schedule is the accumulation of fatigue during the course of the shift and the lack of recovery time within the shift.”

The 24 hour schedule actually reduces the accumulation of fatigue as there is a break between each shift where firefighters can recuperate. At the present time Toronto firefighters are working stretches of 3 or 4 consecutive nights of 14 hours each, where the cumulative fatigue and sleep debt tend to increase. If adequate sleep is not achieved due to inability to sleep, childcare, etc., we then in reality have firefighters working consecutive 24 hour shifts, thereby increasing fatigue.

“The potential for this is greater in busy halls where there is very little time for naps or sleeping between calls and during large incidents when there are very little opportunities for recovery. If there has been continuous calls or one large incident which does not allow firefighters to get at least two hours of sleep, fatigue may play a major factor in their abilities to perform their job tasks.”

Cumulative fatigue and sleep deprivation is more likely to accumulate over three or four consecutive 14 hour nights. If a large incident (such as the Toronto Hickson fire of 2000) occurs at the beginning or in the middle of the shift, it can be expected that firefighters may book off sick for the remainder of the shift in order to recuperate. This would not happen on the 24 as there would normally be 48 hours off before reporting for duty on the next scheduled shift, instead of having at most 8 hours off as is reality on our present 10/14 shift.

The California Department of Forestry and Fire Protection uses the 24 hour operational shift when fighting large forest fires because they have found that personnel are better rested and more productive than personnel on a 12 hour operational period.

Other large incidents where the operational period was 24:

*San Francisco earthquake of 1996?

*New York, 2001 World Trade Center firefighters normally assigned to a 9 hour day/15 hour night, worked a 24 hour schedule during the disaster.

*Washington D.C., 2001 Plane crash into the Pentagon

*Toronto winter snow storm in 1999 when the Canadian Military were called in

*Many more can be documented if requested

"Fatigue can be defined a few different ways but for the purpose of this discussion fatigue is a state of declining alertness which eventually ends in sleep. Well before performance has declined, there is an increased cost to the operator in maintaining good performance when fatigued. Key deficits include a decrease in the speed with which decisions are made, including making control maneuvers in a vehicle (Hartley, 2001)."

"A comparison of fatigue from lack of sleep and impaired performance due to alcohol intoxication has found that fatigue is at least as dangerous as alcohol on driving performance. Forty subjects were kept awake for 28 hours (a comparable amount of time that firefighters could be up when working a 24 hour shift, and the effect was comparable to alcohol intoxication. Fatigue impairs performance to an extent equivalent to or greater than is currently acceptable for alcohol intoxication. After 17 hours of sustained wakefulness there were performance impairments equivalent to 0.05% blood alcohol concentration, the usual legal driving limits for alcohol in industrialized countries (Dawson and Reid 1997). Another study demonstrated that a blood alcohol concentration of 0.05% doubles the risk of a crash when operating a vehicle (Hartley, 2001)."

On our present shift of 10/14, should there be a large incident, firefighters are expected to be awake for 14 straight hours during the night. Counting clean up time and commuting time, it is plausible that firefighters are expected to be in a state of wakefulness for 17 hours for 3 or 4 consecutive nights. Therefore firefighters would be returning home with a level of impairment noted as above, after each shift and also having to return for consecutive shifts. On the 24-hour shift firefighters would not have to normally return for a minimum of 48 hours. Also, considering documented evidence that many people on rotating shifts can not sleep during daylight hours and the reality that many firefighters currently do not rush home to sleep, the accumulated sleep impairment is greatly magnified on our current shift. Whether on 10/14 or 24 any lengthy operational period requires a rehabilitation cycle to allow physical, psychological and cognitive rest. We currently employ these strategies at emergencies so nothing would change in this regard.

“There are particular concerns with fatigue and driving. Drivers are engaged in a task requiring their continuous attention. Added to this is the increased alertness required when operating an emergency vehicle through city streets, with congestion, and a lot of sensory stimuli. Many motor vehicle accidents can be attributed to fatigue. The American Automobile association examined 221 truck crashes where the truck had to be towed away. It was estimated that fatigue was the primary cause in 40% and a contributory cause in 60% of the crashes (Hartley, 2001). Driving performance is of concern during the shift as well as the commute home after the 24-hour shift. There is a still widely held view that sufficient motivation will overcome fatigue, a position that is no longer tenable (Hartley, 2001).”

Dr. Eve Conter, at the University of Chicago, published the first study to specifically examine the physical health impact of ordinary sleep deprivation. His findings were as follows:

- 1) After 4 hours of sleep for six consecutive nights, healthy young men had blood tests that nearly matched those of diabetics. They had elevated levels of the stress hormone cortisol (which is linked to hypertension and memory impairment). Emergency personnel commonly experience prolonged exposure to cortisol.
- 2) Fit men in their 20's had results which were comparable to 60 year old individuals.
- 3) 6 or 7 hrs sleep instead of four would have similar impacts, but would take longer time to become evident.

Dr. G. Belenski, the US military expert in sleep research concluded that sleep debt decreases the entire brain's ability to function, particularly areas responsible for attention, complex planning, complex mental operations, and judgement.

“The various bodily functions of humans fluctuate in an approximate 24-hour cycle called circadian rhythm. Functions such as body temperature, heart rate, blood pressure, adrenaline production, and metabolism all decrease by night and increase in the day. Circadian rhythms may be desynchronized when humans disrupt the sleep/wake cycle due to night work, travel across time zones or inadequate sleep.”

“Motohashi and Takano, in their “effects of 24 hour shift work with nighttime napping on circadian rhythm characteristics in ambulance personnel” found that the 24 hour shift work altered the characteristics of circadian rhythm of ambulance personnel. Night time naps seemed to have a favorable effect on averting changes in circadian rhythms. The threshold was 100 minutes of calls per night, less than which 43% of workers had circadian desynchronization and more than which 83% of staff experienced circadian rhythms (Motohashi and Takano, 1993). In less busy circumstances/nights, ambulance personnel could sleep for >4 hour continuously, the equivalent of an anchor sleep, which is known to have a stabilizing effect on the circadian rhythm. The ability to sleep explains the lower incidence of changes in ambulance compared to 8 hour discontinuous shift pattern in non-sleep conditions.”

Dr. Motohashi found that even though a 24 hour shift did alter the circadian rhythm of fire personnel, (even if the number of subjects of the study was only 8), the level of

disruption was lower than on an 8 hour rotating shift. According to the criteria outlined by the City Ergonomics department, it should be expected as the opposite, since 8 hour firefighter/paramedics would be expected to sleep before coming to work.

"In their submission, Local 3888 contends that coming on shift early in the morning will ensure that firefighters are well rested unlike coming on night shift in the afternoon when many firefighters are not well rested (due to second jobs, family responsibility, or poor sleep pattern). Firefighters do not sleep during the day shift due to calls, drills, training and routine maintenance (Glazner, unpublished). All of them would be starting the second part of their 24-hour shift without rest having worked the previous hours and having commuted to work. Given that 85% of firefighters live outside of the City (Mecozzi et al, unpublished), their commutes could be long and therefore, the employees could have been up since very early in the morning and may have had inadequate sleep as a result."

Local 3888 did not claim that firefighters on the 24 hour shift would not be fatigued at the end of their shift. What was pointed out is that the level of fatigue and tiredness is less than on the 10/14, when considering the overall state of firefighters' wellness. Again, when making assumptions regarding the levels of fatigue, true facts can only be presented after demand measurables are weighted evenly and studied on both our current 10/14 and the proposed 24. All of the fatigue issues identified by the city Ergonomist are negatively magnified on our current rotating shift due to consecutive nightshifts.

"Currently it is estimated that 50% of shift workers sleep before starting a night shift (Canada Safety Council, fatigue). The 24 hour shift ensures that none would be rested before starting the second phase of their shift unlike starting a shift at 4 pm when approximately 50 % of the firefighters would have rested. In Glazner's "Factors related to injury of shift working firefighters in the northeastern U.S.", an outcome was that fatigue, especially on the night shift accounted for some of the injuries as did disruption of eating schedules. More potential for disruption of eating schedules exists with 24 hour, particularly in case of busy day of calls for first 10-12 hours of the shift. This would, in my opinion, lend support for shorter shifts."

Dr. Glazner studied 500 firefighters on 3 different fire departments on a 10/14 shift schedule. She found that the majority of the injuries on the fireground occurred at the beginning of the 14 hour night shift. The level of serious injuries on the fireground, while on the 10/14, were found to be 3.4 times greater than the national average. She attributes the higher injury rates to firefighters reporting tired for their 14 hour night shift. She found that firefighters could not sleep during the day because of their normal day cycle circadian rhythm, regardless of the type of commitment (family, supplemental income job, department committee meetings, etc.). All three studied fire departments on the 10/14 eventually changed to a 24 hour shift schedule. If in the opinion of the City Ergonomics department, shorter shifts would reduce the incidence of circadian rhythm disruptions, then the findings of Dr. Motohashi would not be valid.

Chief K. Peacock, of the New Zealand Fire Services, contacted Local 3888, after reading the article in the International Journal of Fire Engineers, to confirm the pattern of injuries as outlined by Dr. Glazner. New Zealand firefighters work a form of the 10/14.

Dan Thorpe, of the Oregon Department of Forestry, in his recommendations states, "Greater acceptance should be given to the 24 hour shift concept used by CFD (California Forestry Department). This tool has been successfully used both to minimize injuries and increase production." (Thorpe, 1999).

Other fire departments in the U.S. that have switched to the 24 hour shift, have recorded decreases in injuries. (Superior Court NJ, Township of Teaneck v. Teaneck firemen's Mutual Local 42)

"People should have at least two hours of sleep every 24 hours and preferably a minimum of four in 24 hours (Haarma et al). Even then there are associated performance decrements. The fact is that regardless of motivation, professionalism, training or pay, an individual who is very sleepy can lapse into sleep at any time, despite the potential consequence of inattention (Canada Safety Council)."

In their submission, Local 3888, provided an abstract by Dr. M. Haarma, of the Finnish Institute of Occupational Health, which looked at the sleep recovery of firefighters on a 24 hour shift. Found that recovery time of the firefighters in the studied (24 hour) schedule was acceptable. "1-2 hours of sleep after 20 hours of sleep deprivation has been found to increase the alertness and psychic performance almost to the normal level".

"If there is a concern with accumulated fatigue among firefighters toward the end of four night shifts, this should be addressed by quicker rotations through the shifts. Research supports a quickly rotating shift schedule that includes no more than three and preferably only two consecutive night shifts."

The U.S. Fire Administration, quoting "Plain Language about shiftwork", NIOSH, National Institute of Occupational Safety and Health" (which also has a research branch specifically for firefighters), suggests "avoiding quick shift changes" and when "changing employees' work schedules, all aspects of the worker's job and home life should be considered".

"One of the arguments used to support the 24 hour shift is that workers will come in rested to their night shift, unlike when they come in on nights and may have worked a second job all day. This issue should be addressed by stressing the need for adequate rest prior to a night work shift, not by further accommodating firefighters so they can have 2nd jobs."

Firefighters are highly motivated individuals. The High Demand/Low Control nature of the firefighting occupation places individuals under unpredictable levels of stress. Each individual should find an outlet to release the work stress. For some it may be 2nd jobs, others may include additional family time, hobbies, sports, physical exercise or outdoor

activities. Realities of the fireground, place unimaginable demands for competency on the part of firefighters. Firefighters often bring skills and knowledge that have been acquired from other occupations onto the fireground. For example, a firefighter who works as a part-time truck driver can be expected to be a better fire apparatus driver or a firefighter who is involved in building construction will better understand how a fire will affect the building and where to look for hidden fire. This transfer of knowledge and skills in real, applicable terms, not only benefits fireground safety, but also the public and the city at large. It saves lives and property. As long as the chosen "other activities" do not interfere with the performance of the firefighting duties, they should be considered a positive.

"With the move to a 24 hour shift, one would expect more opportunity for them to have other employment, which may increase the potential for fatigue during their shifts."

This is a purely speculative statement with no evidence to back it up. What is important is that the another part-time employment, will not interfere with the performance of firefighting duties. On the 10 and 14 hour shift it is more probable that firefighters may work during the day and then report for duty for the night shift. Dr. Glazner already has found that the injuries on the fireground occurred at the beginning (18:00 to 22:00 hours). She related that to the fact that firefighters, regardless of activities (2nd job or family commitments) were reporting fatigued for the night shift. Dr. Glazner also reported a positive effect from transferable skills from 2nd jobs or hobbies. The move to the 24 would ensure an undisturbed period of sleep at home before reporting for each shift, which is not possible or a current reality on the night shift of the 10/14.

Shift work and Sleep

"Shift work by its nature is disruptive to the sleep/wake cycle. For night workers who must sleep during the day, the length of sleep is negatively impacted, however sleep is not generally disturbed. That is, night workers do not wake up more than day workers, but their sleep length is typically shorter. Social considerations are just as important as physiological considerations when determining shift schedules. Things to consider: whether the hours of work should be permanent or rotating, the direction of rotation, the rate of rotation, the length of workdays, what days of the week are to be non-workdays, the time of day shifts start, and the temporal regularity of shifts (Tepas, 2001)"

Dr. Tepas states that "It is a lot easier to identify a dangerous schedule than it is to identify a safe one. 24 hour scheduling is still more of an art than a science, but it still should be done by a professional who can take all variables into account".

Dr. Glazner, who is a world recognized researcher into the effects of shiftwork on firefighters, states in her professional opinion, the TFS 10/14 hour shift schedule has serious implications to health and wellness of firefighters.

Dr. Glazner states :

“Beneficial work schedules are of primary importance in ensuring healthy firefighters, throughout their employment and into retirement. It is my opinion that the proposed 24-hour shift would greatly benefit and improve the overall health of firefighters in the City of Toronto, not only in the short, but also in the long term. In my opinion, the schedule being presently worked by Toronto firefighters, presents problems in terms of health and safety not only for firefighters, but also for the public at large.

I would strongly urge and encourage city administrators to consider a trial of the 24-hour schedule to assess the health benefits to Toronto firefighters.”

“In comparing 8, 10, and 14 hour work shifts it was found that subjective measures of sleepiness and mood were shown to increase over the course of the extended work shifts. Despite the increase, the compressed schedule was deemed acceptable because it did not negatively impact on workers who participated to a greater extent than they worked on the non-compressed schedule (Paley et al, 1998). One could be reasonably sure that the subjective levels would continue to increase in the 24 hour situation and that under busy conditions, the impact would possibly be more negative.”

Dr. Tepas and Dr. Paley studied 24 firefighters in a private northeastern U.S. university. Even though they deemed acceptable the switch to the 10-14 hour shift from an 8-hour rotating schedule, they found that firefighters on the 10 and 14 were “substantially sleep deprived. Firefighters on all shifts averaged about 6.5 hours of sleep every 24 hours, and firefighters on night shift averaged only five hours of sleep”. In all the reviewed literature and case studies, the overall subjective levels of fatigue and tiredness have decreased after a switch from the 10 and 14 to the full 24 hour shift. Toronto’s ergonomics department asserts that shorter shifts would be more beneficial, even though actual case studies prove the opposite.

Glazner’s “Effects of Shiftwork on Firefighters” does not appear to be peer reviewed and the subjects are not from a random sample, however the findings are interesting. It is significant to note that the firefighters studied all worked the 10/14 and reported being healthy and not as negatively impacted as one might suppose given shift work. It could be assumed that generally the shift schedule works for them. It is also interesting to note that the average number of night calls per week was only four so this study may have limited applicability to the City of Toronto.”

Glazner’s study was published in the Journal of NYSNA (Journal of the New York State Nursing Association) in September 1988. She also wrote a book titled “Effects of Shiftwork on Health and Circadian Rhythm in Firefighters, 1988, Columbia University, New York, 256 pp. All three New Jersey fire departments studied by Dr. Glazner, eventually abandoned the 10/14 and switched to a full 24 hour shift schedule. The study represented the finding of a sample of 80 firefighters. According to Dr. Glazner the primary reason that firefighters liked the 10/14 shift was because it allowed a second

career. The firefighters in the study qualified for full retirement after 20 years of service, and many were preparing themselves to retire and continue working in a 2nd business or career. Of the 80 firefighters, 75% had second jobs, 65% worked 10 hours or more per week, and 56% worked more than 16 hours per week. When asked if they were satisfied with the present job because it allows time for a second job, 70% were very satisfied. Since the study these departments have switched and remained on the 24.

“Rapid forward rotation of shift schedules is generally recommended in the literature (max 2 or 3 consecutive night shifts). Rapid rotation of shift schedules is more accepted and allows for less disruption to social interactions and more sleep in certain conditions (Ng-A-Tam et al, 1993).”

Quoting the U.S. Fire Administration, “Plain Language about shiftwork”, NIOSH, National Institute of Occupational Safety and Health, suggests “avoiding quick shift changes” and when “changing employees’ work schedules, all aspects of the worker’s job and home life should be considered”.

Summary of Recommendations

“Of all the scientifically sound, peer reviewed research there is no evidence to suggest that circadian desynchronization is greater in 10/14 than 24/72 hour schedule.”

The 24/72 hour schedule was not submitted by Local 3888 as a proposed 24 hour schedule. There were three schedules submitted in the proposal, and it appears the City’s ergonomics department failed to comment on them. There is only a handful of scientific studies that specifically deal with the issues of firefighters and shiftwork. None of them compare current shift schedules with the 24 hr shift because circadian desynchronization is extremely difficult to biochemically measure, due to sample collection difficulties.

It is a fact that Superior Courts in Massachusetts and New Jersey have consistently upheld arbitrator’s awarding of the 24 hr shift and the elimination of the 10/14 schedule. Evidence introduced in court proceedings has proven that the 24 is a safer, less disruptive and more beneficial toward firefighter’s health and work/life balance.

“If there are issues regarding accumulated fatigue in the current shift schedule, a 24 hour shift does not appear to address these issues. There is a major concern with the busy fire halls and large incidents where firefighters may be in a situation of no/little sleep for the entire duration of a shift.”

In the professional opinion of Dr. Glazner, our present shift presents serious problems to our health. The proposed 24 hr schedules do address the issues of cumulative fatigue and circadian rhythm disruptions, by allowing rest periods in between each shift. Deputy Chief Kreis of the Phoenix Fire Department, which is recognized as one of the most progressive fire services, stated that “fatigue on the 24 hour shift is not an issue. In fact we allow firefighters to work 48 straight ours”.

"It appears, from the documents provided by Local 3888, that firefighters know they may be fatigued when working 24 hours but are willing to endure, knowing they will get a lot more time away from the job. The problem with this is that fatigue cannot be overcome with motivation."

"We experience performance decrements in a fatigued state, including decrease in speed of reaction and a decrease in decision making speed which would affect many job tasks such as driving and reacting on scene. While psychosocial issues are very significant in determining shift scheduling, the over-riding issue here is that fatigue within the 24 hour shift and what we know about fatigue is that it cannot be mitigated by motivation or other external incentive. "The fact is that regardless of motivation, professionalism, training or pay, an individual who is very sleepy can lapse into sleep at any time, despite the potential consequence of inattention" (Canada Safety Council, Fatigue)"

Again, the city ergonomist hangs her hat on the fact that firefighters may experience fatigue on the 24 hr shift but does not even consider the comparison of fatigue levels on our current 10/14 shift. All of the fatigue concerns expressed are negatively magnified on our current shift. Currently, the REALITY is Toronto firefighters are often working several 24's consecutively without adequate sleep and are suffering sleep loss impairment toward the end of their shifts. Example—our current 4 night shift—Thursday night through Sunday night—14 hrs per night (56 hours in 4 nights). Many firefighters report for the Thursday nightshift duty already tired from a full day of strenuous activities (childcare, sports, work, hobbies, etc), the level of which the department has no control or knowledge of. Often, these firefighters then experience a busy 14 hr nightshift and head off for another day of work or play instead of home to sleep as we all know they should (studies have shown that a large percentage of the population cannot sleep during daylight hours even if they try). They then return for another nightshift (Friday), hoping for some sleep. Saturday morning they then go home and since many have not seen their families since early Thursday morning it is now family time, not sleep time as it should be. Some are unable to sleep even if they try due to the home or neighborhood noise and activities. Again, they have to head back to work for another nightshift—Saturday and hope for sleep. Sunday morning head home and try to stay awake through church or other family activities until it's time to go back to work for another nightshift. Counting clean up time and commuting time, it is a fact that firefighters are expected to be in a state of wakefulness for 17 hours or more for 4 consecutive nights. We also currently work a 3 days and 3 nights back to back—that's 72 hours in 6 days.

This is a real life example of how accumulated sleep deprivation occurs resulting in sleep debt that can never be recovered. It's easy to say, let's stress to firefighters the importance of getting proper sleep but it is not realistic—they are action oriented people who search for ways to stay active to reduce stress or improve their family economic position and quality of life.

Ergonomist, Jayne Byers states concerns of driving alertness, commuting, slowed decision making, etc in relation to the 24 hr shift but it is clear that all of these concerns are much worse on our current 10/14. If she is truly concerned about these

health and safety issues she should immediately begin a study to identify the hazards of our current shift to ensure the safety of our firefighters.

"If the City of Toronto does agree to change shift schedules, the following is recommended."

1. *"10/14 hour rapidly rotating schedule with a maximum of three, preferably only 2 consecutive night shifts is preferred."*

The shift schedule proposed by the City's ergonomics department, has been regarded as causing the firefighters to be "considerably sleep deprived" (Tepas in Atkinson). The National Institute of Occupational Safety and Health, recommends avoiding quick rotating shift changes. The shiftwork proposed by the City's ergonomics department has been recognized in court proceedings as inferior to the 24 hour shift. The 10/14 does not allow sufficient time for detoxification of the body for products of combustion (I.e. Hydrogen sulfide and hydrogen cyanide) which are absorbed through the skin.

2. *"If the City of Toronto does agree to go to a 24 hour shift schedule, fixed times of two hour sleep per shift are recommended to ensure minimal recovery time for every fire fighter at work."*

If the 24 hour shift is put into effect, then proper rehab guidelines should be developed so as to ensure proper crew rotation and rest.

3. *"Rotation between busy and less busy hall should be considered. An example might be that a crew from a busy hall (i.e. Adelaide) might alternate shifts with a crew from a quieter hall (ie Swansea). The crew would still be working together which would foster teamwork."*

The same issue occurs on our present shiftwork. Some fire trucks run over 5000 calls per year while others run less than 1000. Creative, out of the box solutions would have to be developed to ensure health and safety and effective operational response. Whether on 10/14 or 24 shift, any lengthy operational period or non-stop heavy workload period requires a rehabilitation cycle to allow physical, psychological and cognitive rest. We currently employ these strategies at emergencies.

4. *"A two year pilot study to allow sufficient time to study the effects of a 24 hour shift schedule and to compare factors such as fatigue, on the job as well as commuting home after 24 hour shifts should be done if a 24 hour shift schedule is put in place."*

Dr. Glazner has offered to help develop a questionnaire similar to the one that was used in the New Jersey fire department studies. It uses the Cornell Medical Health

Questionnaire, which has been used by the National Institute of Occupational Safety and Health to study health consequences of shift work.

Fatigue is particularly difficult to assess scientifically since biochemical sampling is difficult to obtain, and physical tests (such as the strength testing of handgrip) are not reliable. A scientifically accepted method of assessing fatigue is the self-reporting of subjective feelings by the firefighters themselves.

Toronto Professional Fire Fighters Association is committed to researching and implementing the shift schedule that best addresses the issues of Firefighter health & safety (short & long term), morale, and work/life balance. We consider this issue a key component to improving the quality of life for our members and their families. We are also dedicated to co-operatively developing an implementation plan to ensure a strong, effective fire service.





Factors related to injury of shiftworking fire fighters in the Northeastern United States

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Abstract

Fire fighters, who provide society with an essential and life-saving service, are subjected to the effects of shiftwork and to the demands (physical and mental) and dangers of their profession, all of which can contribute to injuries. To identify factors involved in injuries to fire fighters, the timing, frequency, types, and places of occurrence of injuries sustained by fire fighters in three different municipal fire departments were examined. Data was obtained from analysis of Workers' Compensation forms. The most frequent injuries involved inhalation of hazardous materials and lacerations. Ninety-two percent of the injuries occurred at the fire scene, and their causes were related to fire fighting duties, such as rescue, extinguishment and overhaul. Although only 54% of fire alarms nationwide occurred from 12:00 to 16:00 and from 18:00 to 24:00 (42% of a 24 hour day), 68% of the injuries sustained by the fire fighters studied occurred during these time periods. Per alarm, at meal time or on the night shift fire fighters were more likely to be injured. Serious injuries were more prevalent at standardly accepted meal-times. The timing of the highest frequencies of injuries suggests that, due to the shiftwork nature of firefighting, both disruption of eating patterns and fatigue increase the risk of work-related injury to fire fighters. By understanding the contribution of factors, especially human ones, such as altered metabolism (due to disruption) and fatigue (due to time elapsed since awakening, alteration/disruption of sleep-wake pattern, or hypoglycaemia), interventions can be developed, which should decrease the incidence of injuries to fire fighters.

Keywords: Fatigue; Fire fighters; Injuries; Shiftwork; Workers' Compensation

1. Introduction

Fire fighters are repeatedly subjected to rapid, unanticipated transitions from the environment of a fire station to the hostile environment of a fire. The work of fire

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fighters encompasses periods of crisis, which require intense physical exertion, mental concentration, and a high level of teamwork, as well as, relatively undemanding, and sometimes even calm, periods of time between alarms. The work environment is also unpredictable, and while fighting a single fire, fire fighters are exposed to numerous safety and health hazards, including extremes of heat, sudden shifts from sedentary activity to high-speed and vigorous activity, and to air contaminants. The unpredictable aspects of firefighting, as well as, working shifts, are considered a principal cause of stress and, most probably, of injuries to fire fighters.

Since fire fighters must be available 24 hours a day, most career fire fighters work shifts (Schirmer and Glazner, 1983). Shiftwork is defined as working outside the daytime hours of 9:00 to 17:00. The "10-14" shift schedule, used by some fire departments in the United States, typically involves an average of 42 hours of work per week and an 8 week cycle for each firefighter. The 10 hour shifts are from 8:00 to 18:00 and the 14 hour shifts from 18:00 to 8:00. Another shift schedule, the "24 hour" shift, utilized by fire fighters involves 24 hours of duty followed by 72 hours off. Injury rates, which in the fire service approach 50% (International Association of Fire Fighters, 1985), effect the safety of fire fighters and the efficacy of the nations' fire service. Therefore, to determine factors that contribute to this high industrial injury rate, the timing, relationship to frequency of alarms, types, and places of occurrence of injuries sustained by fire fighters in the Northeastern United States were examined. Fire fighting in the Northeastern United States (i) often involves high-rise apartment buildings with combustible wood and plastic and industrial/chemical fires, and (ii) it is standard procedure for the fire fighters to enter the buildings during fire suppression.

Although comparison of industrial injuries incurred by different groups of workers and the causes for such injuries is difficult, these injuries appear to occur more frequently at certain times of the day, perhaps because worker performance can be effected by disruptions in circadian rhythms (Folkard, 1990). Sub-optimal worker performance, as measured by mistakes or the efficiency and quality of performing tasks, may contribute to work-related injuries. With telephone operators and gas meter readers, clear circadian patterns in the frequency of their mistakes were observed; the greatest number of mistakes occurred during the late afternoon, early hours of the morning, and at the end of the work shift (Bjerner et al., 1955). Experimentally, performance of simple tasks is worse on night than on day shifts, and the first few days after a sleep-wake cycle has been disrupted there is a drop in the efficiency of workers (Colquhoun et al., 1978). Performance is slower (Wojtczak-Jaroszowa, 1976) and less accurate on night shifts (Bjerner et al., 1955; Folkard, 1990), and appears to be accompanied by more injuries at night (Rutenfranz et al., 1985). Price and Hooley (1976) observed a periodicity to the injuries sustained by shiftworkers and suggested that the frequencies of such injuries increases at night, while Tasto and Colligan (1978) observed no statistically significant difference in injury rates among food processors and nurses who worked permanent day, evening, or night shifts. In chemical manufacturing, more injuries occurred to shiftworkers during the day and night shifts, than during the evening shift, however, the reasons for this have yet to be determined (Novak et al., 1990). Therefore, whether there was a periodicity to injuries of fire fighters, i.e., a connection to the shiftwork nature of their job, or if the high rate of injuries could be

explained by other demographic, human, or work-related factors was examined in this exploratory study.

2. Methods

To identify factors that contribute to the injury of fire fighters who work shifts (i) all injuries reported on Workers' Compensation forms by the 3 fire companies were examined with regard to the timing, relationship to frequency of alarms, type, and place of occurrence of the injuries, as well as compared to the nationally reported data, and (ii) correlations between the injury experience of the fire fighters studied and selected demographic variables (age, socio-economic status, job title, marital status, and working more than 42 hours a week) were examined.

2.1. Subjects

To obtain participants for this study, a letter explaining the purpose of the study and requesting their participation, as well as, preliminary information, was mailed to the chiefs of 49 career fire departments in a Northeastern state, in cooperation with the Paid Fire Chiefs' Association. Of these 49 invitations to participate and preliminary surveys, 15 were returned, a response rate of 30%. A follow-up letter did not result in an increase in response. In the preliminary surveys, the fire chiefs identified the shiftwork pattern of their department, the number of fire fighters in total, and willingness to participate; information which was used to select departments for actual participation in the study. Of the 15 responding fire departments, only the 3 that had over 50 career fire fighters were chosen for this study. These 3 departments worked a "10-14" shift pattern (Table 1), were in different municipalities, and combined had 447 career fire fighters. They were also representative of the 49 departments in the state with regard to the number of fire fighters employed, their regional (North or South) distribution, and the union affiliation (International Association of Fire Fighters or Firemen's Mutual Benevolent Association) of their fire fighters. Of the 15 fire departments that responded, only 3 worked a "24 hour" shift pattern, so the "10-14" shift pattern of the 3 departments used for the study was also representative for fire fighters in that state.

Table 1
The shift schedule patterns of the participating fire companies

| Company | Hours scheduled to work ^a | | | | | | | | | | | | | |
|---------|--------------------------------------|----|----|----|----|----|---|----|----|----|----|----|----|----|
| | Day | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 |
| A | | 10 | 10 | - | 14 | 14 | - | - | - | 10 | 10 | - | 14 | 14 |
| B | | 10 | 10 | 10 | - | - | - | 14 | 14 | 14 | - | - | - | 10 |
| C | | 10 | 10 | 14 | 14 | - | - | - | - | 10 | 10 | 14 | 14 | - |

^a The 10 hour shifts were from 08:00 to 18:00 and the 14 hour shifts from 18:00 to 08:00. Patterns indicated were started on different days for each of the 4 platoons of the companies, to ensure complete coverage.

- indicates that not scheduled to work on that day.

2.2. Collection of data

Information regarding the injuries and demographics of the injured fire fighters was obtained from the First Report of Injury Workers' Compensation forms. This form was used by industrial supervisors in this Northeastern state to report work-related injuries to the Workers' Compensation Bureau. All 171 of the forms filed in 1985 by the 3 fire departments were analyzed to determine the time of occurrence, type, and site of injury and their correlation to demographic variables. The time of occurrence of 165 of these injuries could be assigned to a 2-hour period of the day.

2.3. Analysis

Analysis methods for this descriptive study included frequency distribution, chi square, and one-way analysis of variance (ANOVA) of the data obtained from Workers Compensation forms of 3 fire companies, and comparison of this data with national statistics for fire fighters in the United States.

3. Results

The distribution of injuries, as reported on the First Report of Injury forms by the 3 departments, varied over the 24 hours of the day, with the highest frequencies of injuries (27.8% and 40.6%) occurring from 12:00-16:00 and from 18:00-24:00, respectively (Fig. 1). These time periods, while representing only 42% of a 24-hour period, accounted for 68% of the recorded injuries and, nationwide, 54% of the alarms. Per shift, the hourly average percentage of the total injuries was 3.8 for the 14-hour night

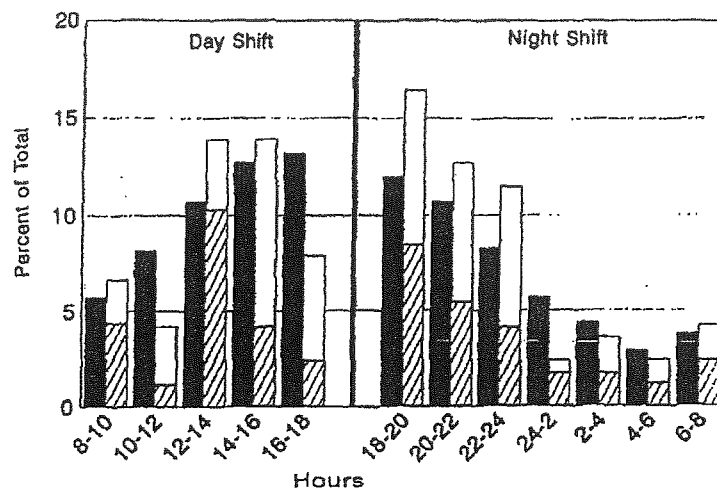


Fig. 1. Injuries and alarms by 2 hour periods. Alarms (solid bars), minor injuries (% of total; open bars), and serious injuries (% of total; hatched bars).

shift and 4.7 for the 10 hour day shift, a difference that was not significant. Since the time distribution of the alarms in the Northeastern state for the period in question was not available, the national data for alarms was used to calculate the injury per alarm values for this study. In the year of the study, nationwide, the hourly average percentage of alarms was 5.1 during the day shift (8:00–18:00) and 3.6 during the night shift (18:00–8:00). There appeared to be, based on percent total of each, an average hourly injury/alarm ratio of 0.92 for the day shift, compared to 1.06 for the night shift. Overall, the correlation (0.8) between alarms and injuries was high. Also, large fires were not observed to have preferentially occurred at any particular time of the day, but rather to have been randomly distributed over the 24 hour period.

Serious injuries were defined as injuries that require more than first aid, i.e., heat exhaustion, fractures, inhalation of hazardous materials, over exertion, and shortness of breath. The incidence of serious and minor injuries reported was about equal, 48 versus 52%. At 8:00–10:00, 12:00–14:00, and 16:00–18:00, 2, 3, and 2 times as many serious as minor injuries were reported. More minor than serious injuries were reported at 10:00–12:00, 14:00–18:00, and 20:00–24:00. However, these differences were not significant, since the number of injuries (serious and minor) reported in these 6 time periods were relatively low.

The injuries reported on the First Report of Injury forms by the 3 fire departments in 1985 were compared to those sustained by fire fighters nationwide (Table 2). While the overall injury rate (38%, 171 injuries per 447 individuals) in the fire fighters studied was lower than the nationwide rate (47%), their percentage of serious accidents (47%) was 3.4 times the national average. Nearly a quarter of the fire fighters studied were seriously injured as a result of their firefighting duties that year. The percentages of serious injuries and of lacerations sustained by the fire fighters studied were significantly different ($p \geq 0.05$) from those of fire fighters nationwide.

All three companies appeared to have an epidemic of injuries on one or more consecutive days. When the primary data was examined, for each fire company participating in this study, this "epidemic" of injuries occurred during one exceptionally large fire that took several days to extinguish and for which fire fighters were called in for duty, even if it was not their assigned shift.

The scene of the fire was the site at which the most injuries occurred (Table 2), both for the fire fighters studied and nationwide. However, the incidence of injuries occurring at the fire house in the studied fire fighters was significantly ($p \geq 0.05$) less than nationwide, probably because 24% more injuries occurred at the fire scene. The occurrence of injuries at sites other than the fire scene and fire house was low nationwide and was not reported on the First Report of Injury forms in the Northeastern state at the time of the study, therefore differences in the frequencies of injuries at these sites could not be assessed.

In this study, the injured fire fighters were male line fire fighters between 20 and 69 years of age. The majority of them were married, were middle class, and/or worked more than an average of 42 hours per week. ANOVA identified no significant relationship between the injuries of the surveyed fire fighters and their age, socio-economic status, marital status, job title, or working more than an average of 42 hours a week. During all shifts and at all times during each shift period, including meal times

Table 2
Injuries of the firefighters studied and nationwide in 1985

| | Percent of total | |
|--|------------------------------|-------------------------------------|
| | Studied (<i>N</i> = 171) | Nationwide (<i>N</i> = 107,000) |
| Type of injury | | |
| Inhalation of hazardous material | 33 | 12 |
| Sprains, strains, or pain | 16 | 39 |
| Lacerations ^b , including contusions, abrasions, or bruises | 10 | 22 |
| Other | 7 | 7 |
| Over exertion | 5 | NA |
| Non-inhalation of hazardous material | 5 | 3 |
| Back, neck, or knee injuries | 4 | NA |
| Stabs or punctures | 2 | NA |
| Soreness, swelling, or numbness | 2 | NA |
| Eye injuries | 4 | 5 |
| Fractures | 4 | 2 |
| Heat exhaustion | 3 | 2 |
| Shortness of breath | 2 | NA |
| Burns | 2 | 8 |
| Cardiac abnormalities | 1 | 1 |
| Injuries due to cold | 0 | < 1 |
| Serious injuries ^{b,c} | 47 | 14 |
| Injury site | | |
| Fire scene | 92 | 68 |
| Fire house ^b | 4 | 13 |
| To/from fire | 2 | 6 |
| To/from false alarm | NA | < 1 |
| While training | NA | 3 |
| While performing physical fitness exercises | NA | 3 |
| Assaulted at any location | NA | < 1 |
| Other | 2 | 8 |

NA = No available data.

^a Source: International Association of Fire Fighters, 1985.

^b Differences between the 2 groups are significant, $p \geq 0.05$.

^c Serious injuries include heat exhaustion, fractures, inhalation of hazardous materials, over exertion, and shortness of breath.

and night shifts, the same number of fire fighters were on duty and available. Therefore, variations in the rate of injury also does not appear to be due to the availability of fire fighters.

4. Discussion

Injuries are predictable entities with known risk factors and can be effectively prevented by primary prevention. To lower the high injury rate of fire fighters, interventions must be adopted that will assist the fire fighters to (i) minimize detrimental

effects due to their work schedules, (ii) cope with the dangerous situations their work subjects them to, and iii) minimize their exposure to harmful agents (Haddon and Baker, 1981; Glazner, 1991). To effectively achieve these goals, factors that contribute to the injury of fire fighters, who are shiftworkers, must be identified.

The conditions experienced by fire fighters are highly variable over 24 hours, therefore there is not an equal probability of an accident occurring at any particular time. As with other types of shiftworkers (Tasto and Colligan, 1978; Novak et al., 1990), the work-related injuries of the fire fighters studied occurred more frequently at certain times of the day (Fig. 1). An apparent circadian pattern to the alarms, with a peak at 16:00–18:00 and a trough at 4:00–6:00, corresponded to the presumed activity of the general populace at these times. However, a circadian pattern of injuries sustained by the fire fighters was not observed. In this study, the highest percentage of injuries and second highest percentage of alarms occurred at the beginning of the night shift, i.e., at 18:00–20:00. This high incidence of injury could be due to disruption of eating. In fact, the main meal of the fire fighters studied was the evening meal. There was also a high incidence of injuries at 12:00–16:00 and at 20:00–24:00. The timings of the high frequencies of injuries to the fire fighters contrast with reported increased incidence of injuries at the end of shifts and in the early morning hours of the day shift for other types of shiftworkers (Bjerner et al., 1955; Colquhoun et al., 1978). This may be because the frequency of injury correlated highly (0.8) with the frequency of alarms. With the studied fire fighters, 29% of the injuries occurred during meal times (12:00–14:00 and 18:00–20:00), even though only 23% of the alarms nationwide occurred during these same times, which suggests that disruption of eating patterns can contribute to an increased incidence of injury.

Although the hourly average percentage of total injuries incurred by the fire fighters during day and night shifts (4.7 and 3.8) was similar, the average hourly injury/alarm ratio was higher on the night shift (1.06 versus 0.92), a difference that is significant ($p \geq 0.05$). This supports that shiftworkers were more likely to be injured at night (Bjerner et al., 1955; Price and Hooley, 1976) and that performance on night shifts is inferior to that on day shifts (reviewed in Monk and Folkard, 1985). The incidence of injury at night was probably not even higher because firefighting is very alerting, and alertness should be protective of injuries (Dahlgren, 1981). The distributions with respect to time of the serious and minor injuries suggests that disruptions at meal-times can contribute to serious injuries. Further studies are needed to understand the basis of this association.

Fatigue, which has been associated with injuries and mistakes of shiftworkers (Bjerner et al., 1955; Colquhoun et al., 1978), may contribute to the injury of fire fighters. Fatigue can result from too much time elapsing since the time of awakening, disruption of the sleep–wake cycle, hypoglycaemia, and/or time elapsed since the beginning of the shift, variables which are not routinely documented or reported. For the fire fighters working a day shift, who came to work directly upon awakening, fatigue was not thought to be a major contributing factor to their injury. However, fatigue due to lack of sleep or disruption of sleep–wake patterns could have contributed to the injuries that occurred during the night shift. On the night shift, fire fighters awoke around 8:00 on the first day and, depending on alarms, might be required to stay awake until the next

morning. The next two or three days, they usually slept from 9:00 until 12:00 or 14:00, and then reported to work by 18:00. The time elapsed since eating could also contribute to fatigue of fire fighters, since hypoglycaemia deprives body systems of their energy source. Assuming that when working a day shift, the fire fighters ate breakfast close to the beginning of their shift, then a hypoglycaemic slump would be expected at 11:00–12:00. However, an increase in injuries was not observed at this time. In contrast, high frequencies of injuries were observed at 14:00–16:00 and 20:00–22:00, which corresponded to the anticipated hypoglycaemic slumps after lunch of the day shift and after dinner of the night shift.

Disruption of sleep–wake cycles results in decreased efficiency (Tepas and Carvalhas, 1990). If decreased efficiency contributes to increases in the incidence of injuries, then disruption of sleep–wake cycles of fire fighters might account for the increased injury/alarm ratio at night. With the surveyed fire fighters, the lowest frequency of injuries occurred at 10:00–12:00 and 24:00–8:00. Therefore, if an increased incidence of mistakes by fire fighters occurred at these times, as observed with other shiftworkers (Bjerner et al., 1955), it did not appear to influence the frequency of injuries of these shiftworking firefighters.

The serious injury rate of the fire fighters studied was significantly higher than the national rate (Table 2), and in particular the incidence of inhalation of hazardous materials and of lacerations. This was probably due to the majority of the studied fire fighters not having adequate breathing protection equipment or gloves. Unexpectedly, even the use of self-contained breathing apparatus has been reported to cause an increase of burns, falls, and smoke inhalation in fire fighters (Heineman et al., 1989). Due to the variety of injuries and the unpredictability of their type and time of occurrence, and to the current lack of prospective studies, at this stage, it is appropriate to combine different types of injuries of fire fighters for analytic purposes.

As expected, the fire scene, where the fire fighters are subjected to extremely hazardous conditions, was the place that most injuries to fire fighters occurred (Table 2). The fire fighters studied had statistically less injuries at the fire house than the national average, which may be because they experienced 24% more injuries at the fire scene.

Although demographic characteristics were expected to effect the incidence of injury of fire fighters, no significant relationship between the fire fighters' incidence of injury and demographic characteristics, such as age, socio-economic status, marital status, job title, or working more than an average of 42 hours a week was identified. In the same sample set, shiftwork was markedly disruptive to the sleep of only some of the fire fighters studied (Glazner, in preparation). Disruption of the fire fighters' eating and lifestyle patterns was not as evident. All the deleterious effects were less, with respect to frequency and severity, than expected. This may be due to the fire fighters' excellent health status, overall fitness, and positive work satisfaction.

Due to the nature of firefighting, and the shift schedule it requires, fire fighters are subjected to substantial and varied risks. By understanding the contribution of factors, especially human ones, such as, altered metabolism, due to disruptions of digestion, and decreased alertness and increased fatigue, due to sleep disruption, interventions can be developed, which should decrease the incidence of injury to fire fighters. Fatigue, especially on the night shift, appeared to account for some of the observed injuries of the

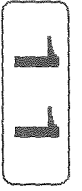
fire fighters. Unexpectedly, disruption of eating schedules also appeared to contribute to their injuries, especially serious ones.

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Shiftwork: Its Effect on Workers

by Linda K. Glazner, PhD, RN, COHN

Shiftwork existed even in ancient Rome. Workers toiled through the night to bring goods and supplies into Rome, since traffic on city streets was limited to the night time hours only. With the advent of the Industrial Revolution and the discovery of electricity, continuous processes were employed to produce goods and supplies and to use expensive machinery. This necessitated workers around the clock.

The terms "shiftwork" and "nightwork" often are used interchangeably. Nightwork is defined as working between 11 p.m. and 6 a.m. or some part of that period. Shiftwork is more broadly defined as occurring when an individual is awake and working while the body, which is diurnal (day oriented), would rather be asleep.

Nightwork, often referred to as the "graveyard shift" or the "lobster shift" in the newspaper industry, is just one type of shiftwork. Shiftwork also includes working any hours outside of the day shift (9 a.m. to 5 p.m., 6 a.m. to 2 p.m., 7 a.m. to 3 p.m., etc.).

Historically, nightwork has been regarded as undesirable and only permissible when strictly necessary. In fact, with the decline of cities during the Middle Ages, the rules of professionals only allowed them to practice during the day. Nightwork was prohibited and could result in a fine.

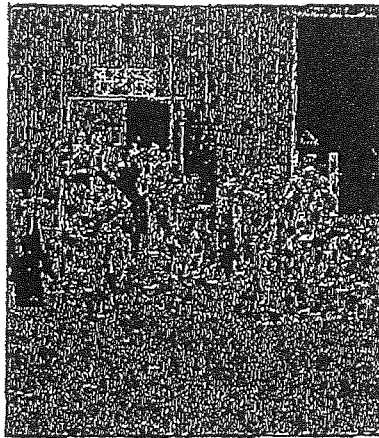


Photo courtesy of David Chenoweth, PhD

During the Renaissance, daywork was related to the availability of sunlight and was the way of life, although mining was characterized by shiftwork. Not until the Industrial Revolution did both a demand and ability for work in the dark exist. In the beginning of the 1800s child labor laws prohibited persons under age 18 from working at night. By the end of the 1800s, laws prohibited women (except in certain occupations such as midwifery) from working at night.

Nightwork, however, is not always seen as a problem. In fact, some workers even choose working nights to solve problems in their out of work

life or to match work with other important lifestyle concerns. Many nurses choose the night shift permanently to maximize time between school, work, and home responsibilities (Alward, 1987).

The prevalence of shiftwork varies from country to country and year to year. During the Industrial Revolution in England, about 7% of the workers were doing shiftwork. An investigation in Denmark in 1975 found that 13% of the workers worked shifts, representing a 17% increase in union shiftwork from 1951. England experienced the same percentage increase in approximately the same 20 year period (Agerfold, 1976). A 1964 Dutch study showed that 24% of workers were on shiftwork (Dirken, 1966). Now more than 20% of the population in America and Europe is engaged in some form of shiftwork (Monk, 1983; Rutenfranz, 1978; Tasto, 1978).

One common circumstance in almost all shiftwork is that men constitute the majority of shiftworkers in the public and private sectors. One glaring exception is in the health field, where the majority of shiftworkers are women.

Shiftwork studies have been conducted in many occupational settings. Examples include studies of

microelectron (1989; Oginski (Wedderburn, (Tepas, 1989), L., Unpublished, 1987, Ne University), 1986; Alward, Tasto, 1978).

Studies have, either as adaptation, meaning that their biological by day and phenomenon hour alteration between day and on its axis. B wave-like rhythmic levels when (Figure).

The wave (amplitude) (phase). If it altered, it is a shift). If the habit, if one cycle with or there is desynchronization maintenance (Trumbull, 1987).

Body temperature most easily in circadian rhythm varies in a through 23 hours of 37°C (+0 early evening early morning unique to be seen in human urine constituents).

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PHYSIOLOGY

One way reacts to shiftwork is that certain conduct experiments.

microelectronic workers (Epstein, 1989; Oginski, 1989), steel workers (Wedderburn, 1976), railway workers (Topas, 1989), firefighters (Glazner, L., Unpublished doctoral dissertation, 1987, New York, NY: Columbia University), and nurses (Adams, 1986; Alward, 1987; Coffey, 1988; Tasto, 1978).

Studies have shown that humans are, either genetically or by natural adaptation, day oriented (diurnal), meaning that they obey the dictates of their biological clock, remaining active by day and resting at night. This phenomenon parallels the regular 24 hour alteration (circadian rhythm) between day and night as the earth spins on its axis. Body functions are in a wave-like rhythm and are at optimal levels when the body is awake (See Figure).

The wave has height and depth (amplitude) and predictability (phase). If the latter characteristic is altered, it is said to be shifted (phase shift). If the shifting is rapid, it is labile; if one body rhythm is out of cycle with other body rhythms, then there is desynchronization. "Normal phase relationship is essential for maintenance of a healthy organism." (Trumbull, 1966).

Body temperature is one of the most easily measured physiologic circadian rhythms. Body temperature varies in a wave-like progression through 23 to 25 hours from a normal of 37°C (+0.5°C), with a peak in the early evening and a trough in the early morning. This pattern is not unique to body temperature; it is also seen in hormonal secretions and in urine constituents.

The circadian rhythm of night workers is the reverse of dayworkers. They have a 12 hour phase shift which seems to cause no problem for the workers. The problem is going from one phase to the other.

PHYSIOLOGICAL EFFECTS/ SLEEP STUDIES

One way to observe how the body reacts to shiftwork is to identify variables that can influence reactions, and conduct experimental laboratory stud-

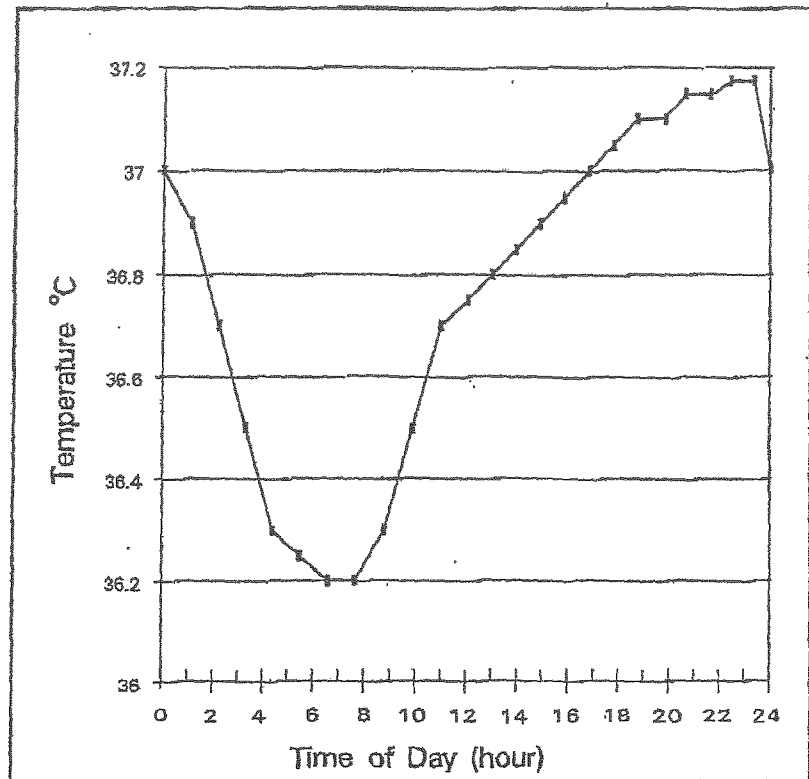


Figure: Circadian rhythm.

ies on these variables. Since shiftwork is closely related to sleep, such studies have examined total sleep deprivation (TSD), performance, and adjustment, and have looked specifically at what happens to the amplitude of the circadian rhythm.

Horne (1978) did a complete summary of all TSD studies from 1896 to 1978 that used biochemical or psychological measures. Those studies that used oral temperature (OT) as a biochemical indicator are summarized in Table 1. Temperature decreases were found in most studies of men deprived of sleep from 40 to 205 hours. These studies suggest that when sleep is lacking, body temperature drops absolutely and individuals' circadian rhythm pattern declines (or flattens).

Further studies done more recently are more complex because they examine the interaction of TSD and performance. They found that lower

oral temperature was associated significantly with maximum nap sleep time, errors on a vigilance test, and sleepiness ratings, and agreed that lack of sleep is associated with dropping of body temperature, flattening of the rhythm, and sleepiness, as well as other factors (Alward, 1987; Monk, 1978; Reinberg, 1978).

Aging

No reports identify the age distribution, sex ratio, or ethnic background of shiftworkers either at a point in time or over time. However, as persons age, they seem less able to adjust to shiftwork and therefore they leave it. Aging also has an effect on adjustment, which will account for leaving shiftwork.

Four possible effects are: cumulative adverse shiftwork effects (since age is usually associated with experience); general decline in the worker's health and ability to cope

Shiftwork

TABLE 1
Selective Summary of Oral Temperature Studies

| Investigator | Year | Subjects | TSD* in Hours | OT† Recordings | Conclusions |
|--------------|------|--------------------------|---------------|----------------|--|
| Patrick | 1986 | 3 men | 90 | 6 | In hours, heart rate, temperature |
| Kleitman | 1923 | 6 men | 40-115 | 3 | Amplitude |
| Murray | 1958 | 15 men | 98 | 2-3 | Temperature |
| Koranyi | 1960 | 6 schizophrenic patients | 100 | 8 | Temperature, but rhythm remains |
| Ax | 1961 | 5 men | 123 | 24 | Temperature |
| Loveland | 1963 | 20 men | 70 | 12 | Trend in OT |
| Scrimshaw | 1966 | 6 men | 48 | 12 | Temperature |
| Naitoh | 1971 | 4 men | 205 | 6 | Temperature until 70th hour, then stabilized |

* TSD = Total sleep deprivation

† = Oral temperature

with stressors; flattening of circadian rhythm; and tendency toward sleep fragility and/or "morningness."

Morningness/Eveningness

This self reported attribute identifies an individual as preferring and performing better in the morning or evening and having physiologic characteristics that are predictable (Horne, 1976).

Morning types, as shown by their body temperature and how they answered on a questionnaire, more strongly notice the lack of sleep and do more poorly on shiftwork. It has even been suggested that flexibility/inflexibility of sleep habits coupled with drowsiness is a better predictor of maladjustment to shiftwork than morningness/eveningness alone.

PSYCHO/SOCIOLOGICAL EFFECTS

In most studies, researchers assume that health is affected by changes in the internal and external environment. These changes impose a stress on the body. The stress may cause a negative or positive health effect. If the effect is positive, then the individual is able to react, accommodate, adjust, or adapt to various internal and external stimuli or stressors. The de-

gree of health effect that one experiences depends on the person's ability to respond to various internal and external environment stressors. If the effect is negative, ill health results.

Moore-Ede (1985) has given the name "Maladaptation Syndrome" to a group of symptoms identified with persons who have difficulty working shift. They believe the seriousness of the problem is underestimated because: shiftworkers who have serious problems adjusting to rotating schedules or nightwork move to day jobs whenever they can find them; shiftworkers tend to visit physicians less than dayworkers; and the health effects of different shift schedules appear to vary considerably.

Shiftworkers have poorer scores on a variety of health indices, and more complaints in three specific areas: sleep-wake disorders, gastrointestinal disorders, and cardiovascular disorders.

Shiftworkers sleep less, and sleep amounts are less when shift time is assigned. However, others have found that shiftworkers who sleep less and begin to sleep later are more satisfied and have less complaints than their peers on shiftwork. All the studies of TSD have found that oral body temperature is altered with in-

creasing lack of sleep. Further, those who are bothered by shiftwork usually cite lack of sleep as their first complaint (Breithaupt, 1977; Maassen, 1978; Reinberg, 1978; Smith, 1978; Tasto, 1978).

Next to sleeping problems, eating problems are the most reported disturbances (Moore-Ede, 1985). Studies have shown that nightworkers eat less or differently and have appetite problems (loss of appetite or desire to overeat).

Eating and sleeping comprise only part of the lifestyle concerns of shiftwork studies. Many studies have examined the social aspects of shiftwork (Moore-Ede, 1985; Tasto, 1978; Van Loon, 1963; Walker, 1978; Wedderburn, 1967). Shiftworkers' time schedules ensure that they are not always off work in the same time space as other members of their family or of most of the community. They may be unavailable at times of high social value (evenings and weekends) and be off at times of low social value.

Shiftwork, therefore, may affect family relationships, impair participation in institutional life, and affect social relationships (Moore-Ede, 1985). On the other hand, possible advantages exist, including the op-

portunity to access in days. Shiftwork community or whom shift with whom (Wedderburn). Drugs, it have been a Tasto (1978) workers use and prescribe them sleep. find increase bacca result ever, other alcohol, cal sumption at daywork.

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portunity to pursue hobbies and interests in daylight hours, and access to facilities open only during weekdays. Shiftworkers may live in a community or socialize with those to whom shiftwork is acceptable and with whom participation is available (Wedderburn, 1967).

Drugs, tobacco, and alcohol also have been a concern in some studies. Tasto (1978) found that nightshift workers use more over the counter and prescription medication to help them sleep. The researchers did not find increased use of alcohol or tobacco resulting from shiftwork. However, others have found increased alcohol, caffeine, and tobacco consumption among workers doing non-daywork.

More is known about poor adjustment to shiftwork than how to predict it. Quality of housing (i.e., how sound proof, single or multiple dwelling) and living arrangements are known factors in adjustment (Wedderburn, 1967). Amount of experience also is a factor in adjustment: those who cannot do shiftwork leave almost immediately and those who can do shiftwork adjust. Clinical evidence suggests that in a population of healthy human adults only a limited number of persons are able to sustain shiftwork.

About 26% of male workers and 16% of female workers are assigned to shifts (Coffey, 1988). After 1 to 4 months of effective shiftworking, 10% suffer—from fatigue, sleep disturbance, and other problems—and leave. Older workers seem less able to adjust to shiftwork and are more likely to leave.

Folkard (1979) developed a questionnaire that correlated well with a range of measures of adjustment. Folkard found that three main factors influenced the ability to predict adjustment to shiftwork: rigidity/flexibility of sleeping habits; ability/inability to overcome drowsiness; and morningness/eveningness.

Monk (1985) suggests that a triad of factors influence a person's ability to adapt to shiftwork. The triad categories are sleep hygiene, circadian

rhythm adaptation, and social and domestic adjustment. Social and domestic adjustment overlap and are not mutually exclusive. Tasto (1978) developed an adaptation score that was a combination of many variables but was especially weighted by complaints of dissatisfaction. The researchers found that rotating workers had lower (poorer) adaptation scores.

Absences

Absences and reports of symptoms of ill health are the usual measures of illness. Absences in shiftworkers are found to be less when compared to dayworkers, except in two studies (Tasto, 1978; Wedderburn, 1967). This may occur because a worker who is ill cannot take shiftwork, and leaves it, thereby becoming a dayworker. However, rotating nightworkers used more sick time than day workers.

In fact, Jhils-Evensen (1958) even suggested a solution to the problem of nightwork. Companies should: a) give preemployment medical examinations; b) not employ on continuous shiftwork persons who have had or show a tendency for psychosomatic complaints; c) transfer those who cannot adapt to shiftwork; d) not employ workers on continuous shiftwork who are older applicants and have not previously done continuous shiftwork (i.e., those over 50 years of age); e) find out about applicants' living conditions before they commence work; f) reject workers living under unsatisfactory housing conditions as unsuitable for shiftwork; and g) improve living conditions of continuous shiftworkers by planning special types of houses built with consideration for insulation, location, location of bedrooms, etc.

All of these are fairly non-specific; however, no mention is made of improving the shift system. Also, it would be hard to believe that industry in the United States would care to (or be able to) not hire workers because of their living conditions. In fact, many of Jhils-Evensen's other suggestions could not be applied in the United States because of poten-

tial legal implications with discrimination charges.

Injuries

Injuries in industry appear to occur more frequently at certain times of the day, perhaps because worker performance is affected by disruptions in circadian rhythms. It is not easy to compare one worker group with another as far as injuries are concerned. However, one study found that most injuries in shiftworkers occurred between 10 p.m. and 2 a.m. Glazner found more injuries in firefighters on the nightshift (Glazner, L. Unpublished doctoral dissertation. New York, NY: Columbia University, 1987). Studies of telephone operators and gas meter readers found clear circadian patterns in the frequency of mistakes; the greatest number of mistakes occurred during late afternoon and early morning hours (or at the end of the work shift) (Bjerner, 1955).

Another study showed experimentally that performance on simple tasks was worse at night than on the day shift and that, for the first few days after the sleep-wake cycle had been disrupted, a sharp drop in worker efficiency occurred that tended to level off after about a week (Colquhoun, 1969).

Other studies have shown a periodicity to injuries and suggested an increased frequency at night (Monk, 1978; Moore-Ede, 1985). Performance has been found to be slower and less accurate on the nightshift. However, the reason for these factors may be poorer maintenance of the equipment.

Brown (1977) used the findings of shiftwork studies to reduce injuries in long distance drivers. He realized that not only the task, but also the vehicle, the environment, and organizational and social factors all contributed to injury rates.

Interesting questions arise out of economic consideration of shiftwork. Is there a pattern in the value of time off work? What shift, if any, has the highest premium paid? Saturday evening was rated as the peak period

Shiftwork

TABLE 2
Morning/Evening Preference

1. Do you prefer:
 - a. the morning to do work that requires the most thinking.
 - b. the evening to do work that requires the most thinking.
2. Do you prefer:
 - a. to go to bed early.
 - b. to sleep late in the morning.
3. If you don't get enough sleep on one night, do you feel:
 - a. tired all day and want more sleep.
 - b. tired but can function as needed.
 - c. it is no problem.

of value for time off for both shiftworkers and dayworkers. Further, both groups valued evenings off more than the daytime, and weekends more than weekdays (Wedderburn, 1976). Others found that shiftworkers had higher income than dayworkers and the shiftworkers who had worked the longest had the highest salary (Walker, 1978).

Shift Patterns

The number of persons working blocks of hours known as the "colonization of time" (working more than 8 hours at a time, thereby having more free time away from work, i.e., working three 12 hour shifts and then having 4 days away from work in a week) has increased substantially. Glazner showed that firefighters were satisfied with their modified rapid rotation as long as they knew their schedule a year ahead (Glazner, L. Unpublished doctoral dissertation. New York, NY: Columbia University, 1987). A small group of workers in a chemical plant even planned their own shift arrangement with positive results (Wedderburn, 1976).

Opportunities for shiftworkers to exercise some control over their work arrangements will be increasing, and this is believed to be favorable for worker and companies. However, the problem still exists to develop research to determine the "best" shiftwork pattern for a specific situation. A pattern that is favorable for

one industry and its workers may not be favorable for another.

This trend is unlikely to cease. At the same time, the hours individuals work have decreased, and this will permit shiftworkers to rearrange working hours and obtain large blocks of free time.

Some studies have found that shiftworkers felt that they were not able to perform effectively the roles of spouse and parent when they worked shifts. Others found, on the other hand, that when shiftworkers requested to leave shiftwork, their family relationships worsened. No explanation was given for this, but perhaps income or the change itself are accountable, at least in the short run (Rutenfranz, 1985).

Field studies also have tried to identify the best shiftwork pattern. Researchers who studied pilots, both governmental and private, concluded that the 4 hours on, 4 hours off cycle demonstrated superiority in maintenance of performance while providing greater capability to withstand stresses such as sleep deprivation. Readjustment time differed depending on whether the flight was east-west or west-east; more time for recovery was needed after a west-east flight. Therefore, the work implication is to schedule rotations which follow the sun. The shift rotation should be morning, evening, and night rather than morning, night, and then evening.

OCCUPATIONAL HEALTH NURSING IMPLICATIONS

Rutenfranz (1985) put into perspective all these areas:

To sum up, the occupational health measures for night and shiftworkers should include all the appropriate actions required to reduce complaints of the workers in order to prevent lowering of well being, and the occurrence of job related diseases. Such measures should not be restricted only to those used in normal occupational health practice, but also should encompass activities outside the workplace such as pressing for amelioration of housing conditions and advising workers on the organization of their social life in relation to shift systems based on physiological criteria.

What does all this mean to occupational health nurses? Occupational health nurses are in a position to influence policy and worker health at all levels of prevention.

Activities that are directed at primary prevention (health promotion and health protection) could include using a questionnaire to predict which workers might be less tolerant of shiftwork. Table 2 offers some possible questions. If the person answers "a" to all three questions, the worker would be less likely to do well on shiftwork. (For more detailed information, Horne [1976] or Folkard [1979] are suggested readings).

Occupational health nurses also can use the knowledge gained from reading other studies on shiftwork and developing policy from these readings. Such policies can include those suggested by Jhlis-Evensen (1958), Rutenfranz (1985), and others, and can include identifying those at risk of poor adjustment and scheduling shiftwork so that it follows the sun.

Activities directed at secondary prevention (early diagnosis, rapid treatment) can include asking questions related to "maladaptation syndrome." Occupational health nurses can assess whether or not more injuries are occurring than expected, and if so, why. Occupational health nurses also can study those workers who are leaving the nightshift to return to daywork and determine if they develop shiftwork related prob-

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Finally, activities directed at terti-
ary prevention (rehabilitation) can
include helping shiftworkers return
to the dayshift or arranging quality
care of those workers who have
symptoms that need management.

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Shiftwork
IN SUMMARY

Shiftwork and Its Effect on Workers. Glazner, L.K. AAOHN Journal 1991; 39(9):416-421.

1. Shiftworkers have more complaints in three specific areas: sleep-wake disorders, gastrointestinal disorders, and cardiovascular disorders.
2. After 1 to 4 months of effective shiftworking, more than 50% of shiftworkers leave shiftwork after suffering from fatigue, sleep disturbance, and other problems. In addition, older workers seem less able to adjust to shiftwork and are more likely to leave sooner.
3. Three main factors influence the ability to predict adjustment to shiftwork: rigidity/flexibility of sleeping habits; ability/inability to overcome drowsiness; and morningness/eveningness.
4. Occupational health nurses can influence shiftwork policy and workers' health through health promotion policies aimed at predicting which workers might be less tolerant of shiftwork, scheduling shiftwork so it follows the sun, and providing early diagnosis and rapid treatment to workers with symptoms that need management.

12

Shift Work and Its Effects on Fire Fighters and Nurses

Glazner, Linda K. Occupational Health & Safety. Waco: Jul 1992. Vol. 61, Iss. 7; pg. 43, 4 pgs

Abstract (Summary)

Studies have shown that humans are either genetically or by natural adaptation day-oriented, meaning that they obey the dictates of their biological clock, remaining active by day and resting by night. There is evidence that shift work can have negative medical, biological, and social effects on the worker. The effects of shift work on the health of fire fighters has shown that maladaptation and negative health effects occurred in some 10% to 20% of firefighters, including disrupted eating, sleeping and social habits. The low incidence of complaints related to shift work in the fire service reflects the fire fighters' ability to adapt to significant stressors. Studies of nurses found that rotating night nurses tended to have the most health complaints and performed less well on vigilance tests as compared to permanent day or permanent night nurses. Nothing is known about female fire fighters and very little about male nurses in hospitals.

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(2710 words)

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Shift work existed even in acient Rome when workers toiled through the night to bring goods and supplies into Rome since traffic on city streets was limited to the night-time hours only. With the advent of the industrial revolution and the discovery of electricity, continuous processes were employed to produce goods and supplies and to utilize expensive machinery that had been purchased. This necessitated workers around the clock.

The terms "shift work" and "nightwork" are often used interchangeably. Night work is defined as working between 11 p.m. and 6 a.m. or some part thereof. Shift work is more broadly defined as occurring when an individual is awake and working while the body, which is diurnal, would rather be asleep. Night work, often referred to as the "graveyard shift" is just one type of shift work. Shift work also includes working any hours outside of the night shift, such as 9 a.m.-5 p.m., 6 a.m.-2 p.m., 7a.m.-3 p.m.

In historical literature, night work is regarded as undesirable and only permissible when strictly necessary. In fact, with the decline of the cities during the Middle Ages, the rules of the professionals only allowed them to practice during the day. Night work was prohibited and could result in a fine. Not until the Industrial Revolution did both a demand and ability for work in the dark exist. Then it was necessary to prohibit children under 18 and women--except in certain occupations, like midwifery--from working at night. Night work, however, is not always seen as a problem. In fact, some workers even choose working nights to be able to solve problems in their out-of-work life or to match work with other important lifestyle concerns. Many of the

permanent night nurses choose this shift to be able to maximize time among school, work and home responsibilities (Alward, 1987).

CIRCADIAN RHYTHM. Studies have shown that humans are either genetically or by natural adaptation day-oriented (diurnal), meaning that they obey the dictates of their biological clock, remaining active by day and resting by night. This phenomenon parallels the regular 24-hour alteration (circadian rhythm) between day and night as the earth spins on its axis. Studies show that these functions are in a wave-like rhythm and are at optimum levels when the body is awake.

One of the most easily measured physiological circadian rhythms is body temperature. Body temperature varies in a wave-like progression through 23-25 hours from a normal of 37 Celsius (± 0.5 C) with a peak in the early evening and a trough in the early morning. This pattern is not unique to body temperature, but is also seen in hormonal secretions and in urine constituents. The circadian rhythm of night workers is the reverse of day workers. There is a 12-hour phase shift which seems to be no problem to the workers. The problem is going from one phase to the other.

One common circumstance in all shift work is that men constitute the majority of shift workers, both in the public and private sectors. One baring exception is in the health field where the majority of shift workers are women. In addition, most shift-work studies have been done in industry and the adaption of male workers to shift work (Carpentier & Cazemian, 1977; Reinberg et al, 1981; Colquhoun et al, 1975). The effects of shift work on the health of workers on families and social life now seems to be sufficiently well established (Bosch, L.H.M., & deLange, W.A.M., 1987). Although shift work studies for nursing exist, studies for firefighting are far from extensive (Glazner, 1992). This article will discuss what knowledge there is on fire fighters and nurses in hospitals.

There is good evidence that shift work has a negative effect on workers. These problems can be conveniently classified into three main interrelated domains: medical, biological and social (Adams et al, 1986). The medical problems associated with shift work include an impairment of both subjective and, to a lesser extent, objective health measures (Breithaupt et al, 1977; Glazner, 1987; Rutenfranz et al, 1985; Tasto et al, 1978). Biological problems center on the disturbance of normal 24-hour (circadian) rhythms in most physiological functions, including the sleep/wake cycle (Akerstedt et al, 1977). Studies of telephone operators and gas-meter readers found clear circadian patterns in the frequency of mistakes; the greatest number occurring in the late afternoon and early morning hours at the end of the shift schedule (Bjerner et al, 1955). Others have shown worker efficiency sharply dropping on the first few days of night work but leveling off after about a week or they have shown a higher rate of injuries at night (Colquhoun et al, 1969; Monk et al, 1978; Moore-Ede & Richardson, 1985). Social problems result from a conflict between the times available to a shift worker for family and social activities, and often limited times at which such activities can be pursued (Walker, 1978; Wedderburn, 1976).

FIRE FIGHTING. Professional fire fighters are an important subgroup of shift workers to study, since there has been little research done on this group, which numbers more than 100,000 nationwide. Fire fighting involves both fire-related (getting to and from the fire scene, rescue, overhaul and extinguishment) and non-fire-related duties (training, equipment maintenance,

inspections and responding to non-fire-related emergencies). Most non-fire duties can be performed during the day or early evening hours and, thus, need not interfere with sleep. However, responding to fires and other emergencies is a 24-hour responsibility which can interrupt sleep. Paid fire-fighter shift patterns tend to be either the "10-14" system, where 10-hour shifts are from 8 a.m. to 6 p.m. and the 14-hour shifts from 6 p.m. to 8 a.m., or the "24-hour" system where 24 hours of duty are followed by 72 hours off (Shirmer and Glazner, 1983).

Fire fighters are subjected to rapid, unanticipated transitions from the friendly environment of the fire station to the hostile environment of a fire. Actual fire fighting requires intense physical mental concentration and a high level of teamwork unpredictable work environment. In a single fire, fire are exposed to numerous safety and health hazards, a extremes of heat, collapsing buildings, falling in burning structures, a sudden shift from sedentary activity (or sleep) to high-speed vigorous activity, and exposure to a variety of air contaminants. The physiologic responses to extreme stress which can be triggered even by the fire alarm within the fire station (Schirmer and Glazner, 1983) include the release of adrenalin into the bloodstream, increasing both the heart rate and blood flow to the large muscles (Selye, 1974). These natural defense mechanisms are usually maintained throughout the crisis.

NURSING. Nursing is a 24-hour-a-day job. Mansfield et al (1989) suggests that hospital nurses' work can be described by an objective measure comprising three relatively independent dimensions that transcend any one clinical setting. The first, general work pressure, is represented by items depicting either sensitive or unpredictable situations nurses face; the second, the routinization of tasks, is measured by items describing the performance of technical "curing" tasks, rather than personalized "caring;" the third, co-worker interdependency, is assessed by items related to the perception of nurses that their job involves team work rather than solitary work. Nursing is physically exhausting and often involved with life and death situations. Nurses work a variety of shifts from the traditional five 8-hour shifts of day, evening or night with a 48-hour period off, to three 12-hour shifts with 96 hours off.

EFFECTS. In comparing results of studies on fire fighters and nurses with those obtained in industrial situations, certain important differences must be borne in mind. First, shift workers in industry have as many duties at night as they do during the day. The productivity is very similar at night. This is not true for either nursing or fire fighting. Nursing during the night, except in certain units--ICUs, for example--requires caring for people who are essentially asleep. Routine tests and visiting by the health-care team or family are less frequent. In the fire service, fire fighters may sleep at night unless there is an alarm. Another difference is that whereas in industry everybody within the firm generally has the same working schedule, this is not true in healthcare, although it is true in the fire service. Still another important consideration is the gender differences. In industry and the fire service, most shift workers are male. In health care, most shift workers are female. Some studies have shown that females have two jobs, leading to a "double exposure" effect.

This effects of shift work on the health of fire fighters has shown that maladaptation and negative health effects occurred in some fire fighters. Like previous shift work studies (Moor Ede & Richardson, 1985; Tasto et al, 1978), shift work was disruptive to the eating, sleeping and social habits of some 10-20 percent of fire fighters. Eating disturbances were self-reported and did not

correspond with physical complaints. The rigidity of sleeping arrangements, the disruption of sleep and, in some cases, commuting contributed to the sleep disturbances. Fire fighters had to modify their sleep patterns in an attempt to obtain sufficient amounts of sleep. Excess use of alcohol was reported by some. Illness complaints generally involved the musculoskeletal system and not other body systems usually detrimentally affected by shift work. In addition, the fire service has a very significant injury rate as compared to other worker groups. In 1984, there were 38 deaths for every 100,000 fire fighters, compared to 30 deaths for every 100,000 police officers (IAFF, 1984; National Safety Council, 1984). This high death rate among fire fighters ranks fourth, closely behind the rate among construction workers.

Glazner (1991) found that there were no more injuries at night in the fire service, but since there were fewer alarms at night, and most injuries occurred during alarms, the rate of injuries/alarms was higher at night. The most frequent injuries were sprains and strains occurring at the fire scene during rescue, extinguishment and overhaul.

The low incidence of complaints related to shift work in the fire service reflects these men's ability to adapt to significant stressors. This in turn may be related to the fire fighters high work-satisfaction scores. These high scores were related to positive attitudes about themselves as workers, the support of people at home and their liking of co-workers. (Glazner, 1977).

Studies of nurses have found that rotating night nurses tend to have the most health complaints and perform less well on vigilance tests (Coffey et al, 1988; Monk and Folkard, 1985; Tasto et al, 1978) as compared to permanent day or permanent night nurses.

Many studies have shown that some loss of sleep is to be expected during night shift among nurses (Bryden & Holdstock, 1973; Folkard et al, 1978; Matsumoto, 1978; Smith, 1979). This, in interaction with the need to work at the low point of the circadian cycle, raises the possibility of a degree of drowsiness in night nurses which may make them less efficient in carrying out their duties.

Injuries to hospital nurses are related to musculoskeletal disorders--back pain or injury--and infections from needle sticks (Estryn-Behar et al, 1989; Glazner, 1992).

A very important issue to remember with all workers, but especially with shift workers, is the phenomenon of healthy worker effect. Workers by definition are healthy because they are able to be at work. If you are not at work, you may be healthy or unhealthy. Therefore, when a small negative health effect is noted, this really may be significant.

As has been noted, both fire fighters and nurses have negative medical, biological and social effects from their work. More studies are needed in both groups. Nothing is known about female fire fighters and very little about male nurses in hospitals. Although the variables that are involved with the negative effects are known to some extent, the changes that would ameliorate these negative effects are not known.

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13

FOCUS: HUMAN FACTORS

Clocking off

Marco Mecozzi, Linda Glazner and Andrew Wong look at the benefits and drawbacks of different shift work systems for firefighters in the USA and Canada

FIREFIGHTERS ARE under a host of different stress-related pressures on their health, not only physically but also emotionally. One of the most commonly recognised occupational stressors is the shift-working nature of the profession. There is sufficient scientific evidence to suggest that the choice of shift work schedule influences the overall health of firefighters, their safety on the fire ground and their well-being off the job.

In North America there are two types of shift schedules: the 24-hour shift and the 10 hour days and 14 hour nights shift. On the 24-hour shift, firefighters spend a full 24-hour period on duty, with a break of one to three days off in between shifts. The 10 and 14 schedule consists of a rotational type of shift, with firefighters working a series of day shifts followed by night shifts. The vast majority of firefighters work a form of the 24-hour shift (ranging from 42 to 56 hours per week). About 20% work a combination of 10-hour days and 14-hour night shifts (also ranging from 42 to 56 hour per week). Of the 25 largest fire departments in the US, 19 of them work the 24-hour shift. The northeast US and Canada are the last pockets of fire departments that work the 10/14 pattern. However, there is some debate over which of these shift systems provides more advantages to the overall health and safety of firefighters.

Rotational shifts (schedules that include rotations from day shifts to night shifts) are more likely to have a negative impact on health than steady shifts (all nights or all days). Emergency workers on rotational shifts have displayed higher susceptibility to the effects of shift work than industrial workers on rotating shifts. These effects are mainly caused by the disruption of the natural 24-hour circadian rhythm of the human body. Fatigue and these rhythm disruptions have been linked to ill health among firefighters, particularly resulting in stress-related illnesses. Excessive stress not only has a negative effect on mental and physical functions, it is also responsible for an increase in cholesterol in the blood, thereby increasing the risk of development of heart disease.

Injuries as a function of shift

A US study carried out by L K Glazner in 1996 examined the relationship between shift work and firefighters' injury patterns in the northeast US. Based on data from fire departments that worked the 10/14 pattern, the study found that injuries occurred more frequently at certain times of the day than others. The highest percentage of injuries and the second largest percentage of alarms occurred at the beginning

of the night shift, that is between 6pm and 8pm. Serious injury rate for the firefighters studied on the 10/14 pattern was 3.4 times higher than the national average. They also experienced 24% more injuries at the fire scene than the national rate.

Further work by the same researcher looked at the injury rate of firefighters in western USA, who worked the 24-hour shift. This study found that the injuries occurred mostly in the evening portion of the shift, and they were, in the vast majority of cases, due to injuries sustained during fitness training at the fire station, rather than at the fire scene. In conclusion, research has demonstrated that the higher injury rates are related to the 10/14 shift.

Fatigue and sleep deprivation

Disruption of the 24-hour circadian rhythm can also result in firefighter fatigue and an increased level of sleep deprivation.

One of the disadvantages of the 10/14 pattern shift is the cumulative fatigue created by the night shift. Although the 24-hour shift may be more tiring at the end of the shift, no two consecutive nights are worked, thereby allowing the firefighters to catch up on their sleep the next night. Recouping is much more difficult by the 24-hour shift.

Research found that the firefighters on the 10/14 pattern worked a 24-hour shift consistently reported much less fatigue and higher job satisfaction than New Jersey firefighters, who work on a 10/14 pattern shift.

In separate work by the University of Connecticut in 1998, a sleep study of firefighters on a 10- and 14-hour shift was undertaken. It found that they were substantially sleep deprived. The research concluded that firefighters on the 10- and 14-hour shift found difficulty in recuperating from the effects of the shift work.

This research also dispelled some of the myths about firefighter fatigue. One myth is that after working the night shift for an extended period of time, firefighters would adjust to the disruptions in sleep. On the contrary, the research found that veteran firefighters were found to have the same problems with sleep as younger individuals. On average, firefighters sleep less than day workers, and therefore cannot find ways to reduce their accumulated sleep loss.

Other work on the sleep and recovery of firefighters on 24-hour shifts by the Finnish Occupational Health and Safety Institute attempted to find out if the amount and quality of

sleep of firefighters was sufficient. It cited another study, which found that the level of alertness and psychic performance rose to the normal level following one to two hours of sleep after 20 hours of sleep deprivation. Therefore, it concluded that the 24-hour shift did not negatively impact firefighters' operational effectiveness.

Furthermore, a Japanese study of firefighters/paramedics of the Tokyo Fire Department, who work a combination of 24-hour shifts and rotational day shifts, found that the studied individuals on the 24-hour shift showed a lower incidence of circadian rhythm disruption than those on the eight hour rotational shift schedule. This suggests that the 24-hour shift is less harmful to the health of firefighters than a rotational shift.

Commuting and off-duty activities

One of the major advantages of the 24-hour shift is the reduction in commuting time and distance. The 24-hour shift halves the commuting time and distance travelled, and can result in savings in vehicle operation, such as fuel and maintenance costs. Risk of accidents is also halved. Commuting distance may also be a factor of promotion or transfer to another station that is further away from home.

Many US firefighters performing voluntary work, pursue personal interests, or have second careers to augment their relatively low pay. The convenience brought about by the large blocks of free time and the nature of the work, which allows rest periods during the night, have given firefighters the opportunities for second and third jobs. In the US, it is estimated that about 40% of firefighters have second jobs. There is evidence that firefighters who are able to supplement their firefighters' income are happier and more fulfilled.

Firefighters appreciate the opportunity to be able to supplement a regular income, which in many cases does not keep up with the increasing cost of living. Their time off also provides the opportunity for activities which will help reduce stress. The 24-hour shift has been shown to be a better system, allowing firefighters to balance life demands better without interfering with their regular firefighting duties.

Duty exchange policies

Fire departments generally allow firefighters to exchange duty days with other firefighters. This is a great convenience, which many firefighters take advantage of. Duty exchanges enable firefighters to modify their work day so as to enable them to participate in social and family functions which would otherwise be missed. This helps counteract the negative effects of regular shift work on their lives. In Boston and New York, firefighters work a form of the 10 and 14 schedule but are allowed to combine shifts into 24-hour periods. The practice is so popular that city officials want the policy changed. In a 10/14 pattern shift, it is possible to work longer continuous shifts, thereby promoting cumulative fatigue. In a 24-hour shift, there is always at least a 24-hour period in between work days.

Meanwhile, fire departments that have switched to a 24-hour shift have reported a decrease in sick leave due to the recuperative time in between shifts. Cumulative fatigue,

disruptions in the circadian rhythm and sleep deprivation have been proven to be responsible for compromising the immune system; due to the nature of fire and medical emergencies, often in infectious and hazardous environments, firefighters are on average more likely to be off work ill than the general population.

Overtime

Under US labour laws, overtime for firefighters and emergency workers does not take effect until after 53 hours of work per week, which gives cities the ability to schedule firefighters on longer weekly shifts without having to pay overtime. Cost is a crucial issue for many fire departments, which rely on regular staffing levels to maintain services without adding new full-time firefighters. Fire departments that have switched to a 24-hour shift have reported a decrease of overtime costs. This is partly because of the lower sick leave usage, which reduces the need for call-backs, and because there is a lower risk of crews having to respond to emergency calls at the time of shift change.

The proponents of the 10- and 14-hour shift point out its advantage in allowing the scheduling of part-time firefighters, so as to cover and augment staffing requirements at peak call times. This is particularly of interest to composite fire departments (with full-time and part-time firefighters), where the use of part-time firefighters could be used to avoid the hiring of additional full-time firefighters.

There is also evidence that the 24-hour shift improves morale among firefighters. Every chief, captain and firefighter of Boston area fire departments noted a boost in morale as the greatest benefit resulting from the change to a 24-hour shift from a 10-hour day and 14-hour night schedule. Better morale was also recognised by New Jersey fire departments which changed their hours to the 24-hour shift. Good morale is essential to the success of a fire department. Without it, in time, the day-to-day operations and management on and off the fire ground will inevitably become inefficient, wasteful and dangerous.

Shift work in general has been proven to have negative effects on the physical, psychological and emotional well-being of firefighters, causing stress and fatigue. One way to reduce occupational stress is to find a better work schedule. Overwhelmingly, firefighters on 24-hour shifts report higher job satisfaction, better work-family balance, more opportunities to be involved in community or social activities, less fatigue, less sleep debt and less serious injuries at fire scenes than those on the 10/14 pattern. Furthermore, the 24-hour shift has been shown to reduce administrative costs, overtime costs, absenteeism, compensation claims and increases in productivity due to the higher morale and motivation of firefighters. □

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14

2013 -- S 0958 SUBSTITUTE A AS AMENDED

LC02310/SUB A/2

STATE OF RHODE ISLAND

IN GENERAL ASSEMBLY

JANUARY SESSION, A.D. 2013

A N A C T

RELATING TO THE CONSOLIDATION OF THE CUMBERLAND, NORTH
CUMBERLAND, CUMBERLAND HILL, AND VALLEY FALLS FIRE DISTRICTS INTO
THE CUMBERLAND FIRE DISTRICT

Introduced By: Senators Pearson, and Picard

Date Introduced: May 22, 2013

Referred To: Senate Finance

It is enacted by the General Assembly as follows:

1 SECTION 1. The Cumberland, North Cumberland, Cumberland Hill, and Valley Falls
2 Fire Districts are hereby merged and consolidated into the Cumberland Fire District in the manner
3 and form as follows:

4 Section 1. Name And Jurisdiction

5 This consolidated fire district shall be known as the Cumberland Fire District and shall
6 have jurisdiction over the entire town of Cumberland. The Cumberland Fire District shall acquire
7 the property, assets and personnel of the Cumberland, North Cumberland, Cumberland Hill, and
8 Valley Falls Fire Districts. The action of consolidating the existing districts into one independent
9 district is done so in accordance with a referendum approved by the qualified voters of the Town
10 of Cumberland by a vote of 10,033 in favor and 2,544 opposed which took place on November 2,
11 2010 and by a resolution adopted by the Cumberland Town Council on May 1, 2013.

12 Section 2. Electors

13 All of the taxable inhabitants or qualified electors of the town of Cumberland, eighteen
14 (18) years of age or older, shall be members of the distinct and independent entity known as the
15 "Cumberland Fire District."

16 Section 3. Governing Body

17 The initial governing body of the consolidated Cumberland Fire District shall be a Fire
18 Committee.

7-1-13

1 Beginning no later than November of 2014, with the regularly scheduled general election,
2 seven (7) members of the Cumberland Fire Committee shall be elected. Each of the five (5)
3 council districts shall elect one member, with two (2) members being elected from the town at
4 large. It shall be a non-partisan election for a two (2) year term. The winning candidates shall be
5 sworn in immediately after the election results are certified. Any vacancy in the membership of
6 the Committee shall be filled by written ballot of a majority of all the members of the Town
7 Council for the remainder of the term of office, provided that the person selected to fill said
8 vacancy shall be a qualified elector from that district. A vacancy in said membership of the
9 Committee shall occur if a member dies, resigns from office, ceases to be a resident and/or elector
10 of the district in which elected, or shall be absent for four (4) consecutive regular meetings or six
11 (6) regular meetings within a twelve (12) month period unless said absence(s) are excused by a
12 majority vote of the whole Committee. Any and all elections, provided for under this act, shall be
13 administered by the state board of elections and the town of Cumberland board of canvassers.

14 Section 4. Bylaws

15 The Committee may adopt bylaws they deem necessary and expedient for carrying out
16 the provisions of this act, provided that they are not in violation of or repugnant to the laws of this
17 state. The Committee may change any provision of the bylaws at any regular or special meeting,
18 provided the proposed change has been noticed on the agenda of the meeting.

19 Section 5. Authorization To Borrow Funds

20 The Cumberland Fire District is hereby authorized and empowered to borrow from time
21 to time such sums of money as may be necessary, provided, however, that no bonded
22 indebtedness may be incurred pledging the credit of the District in excess of one hundred
23 thousand dollars (\$100,000) total in any one fiscal year unless approved by a majority of the
24 electors voting thereon at a general or special election; provided however, that this limit shall not
25 apply to borrowing in anticipation of tax receipts, or receipts of federal or state grant monies, up
26 to the limits set therefor and under the conditions specified in state law. At no time shall the
27 accumulated debt of the district exceed one half of its' annual operating budget.

28 Section 6. Preservation Of Rights Under Existing Labor Contracts

29 In accordance with the provisions of Section 19.1 of Chapter 7, Title 28 of the Rhode
30 Island General Laws, this act of consolidation shall not impair the provisions of any existing labor
31 contracts for persons employed by any of the individual fire districts. Notwithstanding this
32 consolidation, the labor contracts shall continue in full force and effect until their termination
33 dates or until otherwise agreed by the parties or their legal successors.

34 All employees of the Cumberland, Cumberland Hill, North Cumberland and Valley Falls

1 Fire Districts who are so employed by said districts as of the date of the enactment of this Act,
2 shall become employees of the Cumberland Fire District, and shall retain all accumulated rank,
3 benefits and other rights of employment as existed with the several districts without any action by
4 the Committee of the Cumberland Fire District. Nothing contained herein shall prevent the
5 Committee from reducing or eliminating non-contractual positions.

6 The Collective Bargaining Agreements and all other binding commitments and
7 agreements entered into between the Cumberland, Cumberland Hill, North Cumberland and
8 Valley Falls Fire Districts and the Cumberland (IAFF Local 4114), Cumberland Hill (IAFF Local
9 2762), North Cumberland (IAFF Local 2722) and Valley Falls (IAFF Local 2729) Fire Fighters
10 Associations, and any retired members, in effect on the date of enactment of this Act, shall
11 remain in full force and effect and shall be treated from that point forward as entered into
12 between the Cumberland Fire District and the Cumberland (IAFF Local 4114), Cumberland Hill
13 (IAFF Local 2762), North Cumberland (IAFF Local 2722) and Valley Falls (IAFF Local 2729)
14 Fire Fighters Associations.

15 Section 7. Taxes And Tax Collector

16 The Committee shall have power to impose taxes, and provide for assessing and
17 collecting the same, on the taxable inhabitants or property in said district, as they shall deem
18 necessary for purchasing and procuring real estate, and buildings, implements, apparatus and
19 other equipment, and for the payment of the current expenses of said district, the payment of such
20 fire force as they may deem necessary for the protection of the inhabitants of said district from
21 fires and for the preservation of the public peace therein and also for the payment of any
22 indebtedness that has been or may be incurred by said district. The Committee and the District
23 shall be subject to, and bound by, Section 44-5-2 ("maximum levy") of the general laws as if they
24 were a city or town. Such taxes so ordered shall be assessed by the assessors of said district on the
25 taxable inhabitants or property therein according to the last valuation made by the assessor of the
26 town next previous to said assessment, adding, however, any taxable property which may have
27 been omitted by said town assessors or which may have been since acquired. In the assessing and
28 collecting of said taxes such proceedings shall be had by the officers of said district as near as
29 may be, as are required to be had by the corresponding officers of towns in this state in assessing
30 and collecting town taxes. The collector of taxes for the town, by a mutual agreement between the
31 District and the Town Council of the Town of Cumberland, may provide assistance in the
32 collection of the taxes for said district, including, but not limited to, arranging for the fire tax bill
33 to appear on the same bill as the town tax bill. Any and all funds collected by the Town on behalf
34 of the District shall be separately held and accounted for and be held for the exclusive use of the

1 fire district. The collector of taxes for said district shall, for the purpose of collecting taxes
2 assessed for said district, have the same powers and authorities as are now by law conferred upon
3 collectors of taxes for the towns in this state. Said district may provide for such deduction from
4 the tax assessed against any person if paid by an appointed time or for such penalty by way of
5 percentage on the tax if not paid at an appointed time, as they shall deem necessary to insure
6 punctual payments.

7 Section 8. Corporate Status

8 This newly consolidated Cumberland Fire District shall have the right to enter into
9 contracts, to sue and to be sued, and to perform all the functions of a corporation and shall have
10 all general corporate powers permitted by law in accordance with section 7-1.1-4, as amended.
11 The Cumberland Fire District shall possess all the rights, privileges, immunities, and franchises,
12 as well of a public or of a private nature, of the Cumberland, North Cumberland, Cumberland
13 Hill, and Valley Falls Fire Districts; and all property, real, personal and mixed, and all debts due
14 on whatever account, including outstanding taxes, and all other causes in action, and all and every
15 other interest of or belonging to or due to the Cumberland, North Cumberland, Cumberland Hill,
16 and Valley Falls Fire Districts (herein consolidated), shall be taken and deemed to be transferred
17 to and vested in the Cumberland Fire Districts without further act or deed; and the title to any real
18 estate, or any interest therein, vested in the Cumberland, North Cumberland, Cumberland Hill,
19 and Valley Falls Fire Districts shall not revert or be in any way impaired by reason of this
20 consolidation.

21 Section 9. Management

22 The management of the Cumberland, North Cumberland, Cumberland Hill, and Valley
23 Falls Fire Districts shall be assumed by the Cumberland Fire Committee. The Committee shall
24 assume and have all the powers and duties of the Board of Fire Commissioners for each of the
25 four (4) existing fire districts and to the extent that this contravenes the existing public laws
26 relating to each of the four (4) existing fire districts, this act shall control and supersede said prior
27 acts.

28 During the first year, following the election of the Committee, in November, 2014, the
29 Committee shall manage and oversee the four (4) existing budgets of each of the consolidated fire
30 districts, provided, however, that during the budget cycle for the fiscal year beginning on July 1,
31 2015, the Committee shall adopt one budget and one tax rate for the unified district. In all
32 subsequent fiscal years the Committee shall have the power to adopt an annual operating budget.
33 The Committee shall make provision for no less than two (2) public hearings thereon, to be held
34 on separate days, and to be concluded no later than the first Monday in June. Notice of said

1 hearings shall be advertised on at least three (3) separate days in a newspaper or newspapers of
2 general circulation in the Town, the final such advertisement to appear no less than five (5) days
3 prior to the first hearing date. In adopting the final budget, the Committee shall take two (2)
4 separate votes thereon, the second of which shall be taken no less than forty-eight (48) hours
5 following the first. The Committee shall have completed action on the final budget no later than
6 the second Monday in June. Any amendment proposed to the annual budget following its
7 adoption shall specify the source of any funds sought to be appropriated over and above the total
8 in the budget as originally adopted, and shall be considered by the Committee under the following
9 procedure: A budget amendment showing the proposed changes in the affected line items shall be
10 presented to the Committee and shall be referred to a subsequent regular or special meeting for
11 action on its adoption. The Committee shall make provision for two (2) public hearings thereon,
12 to be held on separate days. The second such hearing may be on the date the Committee shall
13 consider adoption of the budget amendment. Notice of the said hearings shall be advertised on at
14 least three (3) separate days in a newspaper or newspapers of general circulation in the Town, the
15 final such advertisement to appear no less than ten (10) days prior to the first hearing date. The
16 Committee shall also cause to be published in a newspaper or newspapers of general circulation
17 in the Town a summary of major expenditure and revenue categories appearing in the budget
18 amendment, compared to current authorized expenditures and revenues, said publication is to
19 appear no less than ten (10) days prior to the first public hearing.

20 Any item or items in the District budget as finally adopted are subject to referendum of
21 the electors of the District in the following manner:

22 (a) Any elector of the District may circulate a petition for the holding of a referendum on
23 such item or items of authorized expenditure provided for in the budget as shall be specifically
24 identified in said petition together with the proposed amount of increase or decrease thereof. Such
25 petition may call for the elimination of an item of expenditure in its entirety, or the insertion of a
26 new item. Any such petition must be filed with the Town Clerk no later than fourteen (14)
27 calendar days following the final adoption of the budget.

28 (b) The Town Clerk shall transmit any such petition received by him or her to the
29 Canvassing Authority which shall verify the signatures thereon forthwith. If the petition shall be
30 certified by the Canvassers to contain the valid signatures of at least four percent (4%) of the
31 electors then registered in the Town, it shall be returned to the Town Clerk.

32 (c) Upon receipt of such certification from the Canvassing Authority, the Town Clerk
33 shall set a date for the holding of a referendum by the electors of the Town on the items specified
34 in the petition, such referendum to take place no later than the third Tuesday following receipt of

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1016

1 such certification.

2 (d) Upon the certification of any such petition for a referendum by the Canvassing
3 Authority pursuant to subparagraph (b) of this Section, if such petition calls for the reduction or
4 elimination of an item or items in the budget as approved, no expenditures shall be made from
5 said item or items, nor shall any of the funds therefrom be obligated, until the referendum thereon
6 has been held and the issue resolved; provided, however, that the Committee may continue to
7 spend and/or obligate funds until the referendum is held and the issue resolved, so long as the rate
8 of expenditure and/or obligation does not exceed that of the previous year during the same period
9 of time.

10 Any and all funds acquired by the Cumberland Fire District hereunder which are held by
11 the Cumberland, North Cumberland, Cumberland Hill, and Valley Falls Fire Districts in accounts
12 restricted by prior voter approval, testamentary bequest or state law (including, but not limited to,
13 the Rhode Island Development Impact Fee Act, R.I.G.L. §45-22.4-1 et seq.) shall be held, used or
14 applied, spent, expended and administered by the Cumberland Fire District in accordance with
15 the restrictions imposed thereon until the funds have been exhausted.

16 Section 10. Existing Boards Of Commissioners

17 The existing boards of commissioners for the Cumberland, North Cumberland,
18 Cumberland Hill, and Valley Falls Fire Districts as created by the General Assembly shall be
19 dissolved, upon the swearing in of the Cumberland Fire Committee, and all of their powers and
20 duties shall pass to the Cumberland Fire Committee not inconsistent with this act. No labor
21 contracts shall be entered into or extended beyond June 30, 2015, until the swearing in of the
22 newly elected Fire Committee. The existing boards of commissioners for the Cumberland, North
23 Cumberland, Cumberland Hill, and Valley Falls Fire Districts shall not approve or adopt a budget
24 that extends beyond June 30, 2015.

25 The existing boards of commissioners for the Cumberland, North Cumberland,
26 Cumberland Hill, and Valley Falls Fire Districts are hereby empowered and authorized to appoint
27 a transitional committee to assist in the transition to a consolidated fire district. Said transitional
28 committee may make recommendations to the four (4) existing boards of fire commissioners and
29 may be empowered by resolution of the existing boards of commissioners to act on their behalf
30 on matters relating to this consolidation.

31 SECTION 2. The Cumberland Town Council shall have the authority, in accordance with
32 the vote of the electors at the general election of November 2, 2010, to implement this
33 consolidation plan through arranging for the election and appropriating such municipal funds and
34 resources necessary to carry out the implementation of this act.

1 SECTION 3. Sections 2, 3 and 10 of Section 1 and Sections 2 and 3 of this act shall take
2 effect upon passage. The remaining sections of this act shall take effect upon the election of the
3 Cumberland Fire Committee. Should any part of this act contravene or be inconsistent with any
4 terms or provisions of the Public Laws which created and/or amended the charters of the
5 Cumberland, North Cumberland, Cumberland Hill, and Valley Falls Fire Districts, the provisions
6 of this act shall control.

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LC02310/SUB A/2

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15

4 District Budgets - 2015
CUMBERLAND FIRE DISTRICT
FY14 MONTHLY EXPENDITURES

| | | APPROVED BUDGET 2014-2015 | JULY 2014 | TOTAL EXPENSES 2014-2015 | VARIANCE 2014-2015 |
|-------------------------------------|------------------------------|--|----------------------|---|-------------------------------|
| OFFICE SUPPLIES | | | | | |
| 1 | Advertising | 500.00 | 0.00 | 0.00 | 500.00 |
| 2 | Office Supplies | 2,000.00 | 0.00 | 43.85 | 1,956.15 |
| 2a | Postage | 700.00 | 0.00 | 98.00 | 602.00 |
| 2b | Bank Fees | 1,250.00 | 0.00 | 0.00 | 1,250.00 |
| 3 | Printing | 250.00 | 0.00 | 0.00 | 250.00 |
| 4 | Tax Expenses | 3,800.00 | 100.00 | 1,141.85 | 2,658.15 |
| 5 | Office Equipment | 1,000.00 | 0.00 | 0.00 | 1,000.00 |
| OFFICE SUPPLIES TOTAL | | 9,500.00 | 100.00 | 1,283.70 | 8,216.30 |
| ADMINISTRATIVE COST | | | | | |
| 6 | Accounting | 6,000.00 | 0.00 | 2,643.50 | 3,356.50 |
| 6b | Payroll Comp Exp | 3,500.00 | 267.78 | 758.02 | 2,741.98 |
| 7 | Clerk | 1,700.00 | 141.67 | 425.01 | 1,274.99 |
| 7a | Stenographer | 200.00 | 0.00 | 0.00 | 200.00 |
| 8 | Commissioners | 10,500.00 | 0.00 | 0.00 | 10,500.00 |
| 9 | Insurance | 71,000.00 | 0.00 | (7.46) | 71,007.46 |
| 10 | Legal | 7,500.00 | 0.00 | 2,915.51 | 4,584.49 |
| 11 | Moderator | 100.00 | 0.00 | 0.00 | 100.00 |
| 11a | Unemployment | 0.00 | 0.00 | 0.00 | 0.00 |
| 12 | Tax Coll/Assessor/Treasurer | 30,500.00 | 3,436.88 | 9,325.90 | 21,174.10 |
| ADMINISTRATIVE COST TOTAL | | 131,000.00 | 3,846.33 | 16,060.48 | 114,939.52 |
| PAYROLL | | | | | |
| 13 | Blue Cross | 142,000.00 | (720.90) | 19,736.86 | 122,263.14 |
| 13a | Health Reimbursement | 15,000.00 | 1,003.53 | 3,807.33 | 11,192.67 |
| 14 | Clothing Allowance | 13,000.00 | 0.00 | 0.00 | 13,000.00 |
| 15 | Delta Dental | 11,500.00 | (42.25) | 1,826.91 | 9,673.09 |
| 16 | Full Time Salary | 699,000.00 | 66,752.21 | 171,114.57 | 527,885.43 |
| 17 | Full Time Pension | 152,000.00 | 14,406.33 | 31,432.42 | 120,567.58 |
| 18 | Longevity Pay | 31,500.00 | 2,997.34 | 13,155.45 | 18,344.55 |
| 19 | Payroll Taxes | 75,500.00 | 8,145.32 | 20,163.75 | 55,336.25 |
| 20 | Other | 0.00 | 0.00 | 0.00 | 0.00 |
| 20a | Military Leave (OT) | 0.00 | 0.00 | 0.00 | 0.00 |
| 20b | VAC (OT to cover Vac) | 83,500.00 | 21,500.49 | 31,654.74 | 51,845.26 |
| 20c | Holiday | 41,000.00 | 3,300.73 | 6,506.70 | 34,493.30 |
| 20d | OT (Overtime) | 14,000.00 | 3,132.66 | 5,140.65 | 8,859.35 |
| 20e | SICK (OT to cover Sick) | 40,000.00 | 2,091.90 | 16,697.61 | 23,302.39 |
| 20f | Sick Time Payout | 5,000.00 | 0.00 | 0.00 | 5,000.00 |
| 21 | EMT/MAIN/EMS/Training | 0.00 | 0.00 | 0.00 | 0.00 |
| 22 | Life Insurance | 1,700.00 | 0.00 | 0.00 | 1,700.00 |
| 23a | Call Force | 20,000.00 | 0.00 | 0.00 | 20,000.00 |
| 23b | Call Force -Chief | 0.00 | 0.00 | 0.00 | 0.00 |
| PAYROLL TOTAL | | 1,344,700.00 | 122,567.36 | 321,236.99 | 1,023,463.01 |
| DUES & CONVENTIONS | | | | | |
| 24 | Chief's Convention | 250.00 | 0.00 | 0.00 | 250.00 |
| 25 | Professional Dues | 500.00 | 0.00 | 0.00 | 500.00 |
| DUES & CONVENTIONS TOTAL | | 750.00 | 0.00 | 0.00 | 750.00 |
| UTILITIES | | | | | |
| 26a | Shared Communications | 2,000.00 | 0.00 | 0.00 | 2,000.00 |
| 26b | Shared Fire Box Service Fees | 0.00 | 0.00 | 0.00 | 0.00 |
| 27a | Electric | 5,750.00 | 618.44 | 1,432.23 | 4,317.77 |
| 27b | Heat | 3,500.00 | 55.24 | 378.72 | 3,121.28 |
| 28 | Telephone | 4,500.00 | 399.56 | 1,124.81 | 3,375.19 |
| 29 | Water | 1,000.00 | 49.20 | 224.95 | 775.05 |
| 30 | Sewer Assessment / Usage | 1,250.00 | 41.11 | 197.84 | 1,052.16 |
| 31 | Hydrant Fees | 49,500.00 | 0.00 | 0.00 | 49,500.00 |
| UTILITIES TOTAL | | 67,500.00 | 1,163.55 | 3,358.55 | 64,141.45 |

**CUMBERLAND FIRE DISTRICT
FY14 MONTHLY EXPENDITURES**

| | | APPROVED BUDGET 2014-2015 | JULY 2014 | TOTAL EXPENSES 2014-2015 | VARIANCE 2014-2015 |
|------------------------------------|---------------------------------------|--|----------------------|---|-------------------------------|
| TRAINING | | | | | |
| 32 | Training | 4,000.00 | 53.46 | 100.00 | 3,900.00 |
| 33 | Education | 4,000.00 | 750.00 | 2,209.25 | 1,790.75 |
| 33A | Professional Development | 500.00 | 0.00 | 0.00 | 500.00 |
| TRAINING TOTAL | | 8,500.00 | 803.46 | 2,309.25 | 6,190.75 |
| BUILDING | | | | | |
| 36 | Station Improvements | 3,000.00 | 0.00 | 0.00 | 3,000.00 |
| 37 | Station Maintenance | 4,000.00 | 0.00 | 498.01 | 3,501.99 |
| BUILDING TOTAL | | 7,000.00 | 0.00 | 498.01 | 6,501.99 |
| APPARATUS | | | | | |
| 39 | Fuel & Oil | 10,000.00 | 554.46 | 1,976.15 | 8,023.85 |
| 40 | Repairs & Maintenance | 16,000.00 | 0.00 | 207.23 | 15,792.77 |
| APPARATUS TOTAL | | 26,000.00 | 554.46 | 2,183.38 | 23,816.62 |
| EQUIPMENT | | | | | |
| 41 | Shared Air Supply / PPE Maint. | 500.00 | 0.00 | 0.00 | 500.00 |
| 42 | Communication Upgrading | 1,000.00 | 0.00 | 0.00 | 1,000.00 |
| 43 | Equipment Repair | 2,000.00 | 0.00 | 661.37 | 1,338.63 |
| 43a | Replacement Items | 2,000.00 | 0.00 | 470.34 | 1,529.66 |
| 44 | New Equipment | 5,000.00 | 0.00 | 7.43 | 4,992.57 |
| 45 | Radio Maintenance | 500.00 | 0.00 | 0.00 | 500.00 |
| 46 | Equipment Upgrade | 2,000.00 | 0.00 | 9.04 | 1,990.96 |
| EQUIPMENT TOTAL | | 13,000.00 | 0.00 | 1,148.18 | 11,851.82 |
| MISCELLANEOUS | | | | | |
| 48 | Physicals | 2,000.00 | 0.00 | 0.00 | 2,000.00 |
| 49 | Employee Support | 1,000.00 | 0.00 | 0.00 | 1,000.00 |
| MISCELLANEOUS TOTAL | | 3,000.00 | 0.00 | 0.00 | 3,000.00 |
| BUDGET TOTALS | | 1,610,950.00 | 129,035.16 | 348,078.54 | 1,262,871.46 |
| ADDITIONAL EXPENSES: | | | | | |
| IMPROVEMENTS /LONG TERM LIA | | | | | |
| | Various station renovations | 0.00 | 0.00 | 0.00 | 0.00 |
| | Grant Expenditures | 0.00 | 0.00 | 0.00 | 0.00 |
| | Emergency Generator w/Transfer Switch | 0.00 | 0.00 | 0.00 | 0.00 |
| | Fire Truck Engine #22 | 0.00 | 0.00 | 0.00 | 0.00 |
| | Fire Truck Engine #23 | 38,098.00 | 0.00 | 0.00 | 38,098.00 |
| | Brush Truck Replacement | 0.00 | 0.00 | 0.00 | 0.00 |
| | Chiefs Truck Replacement | 0.00 | 0.00 | 0.00 | 0.00 |
| | Replenish Contingency Fund | 0.00 | 0.00 | 0.00 | 0.00 |
| IMPROVEMENTS TOTAL | | 38,098.00 | 0.00 | 0.00 | 38,098.00 |
| NON BUDGET ITEMS | | | | | |
| | Fire Prevention | 3,000.00 | 0.00 | 0.00 | 3,000.00 |
| | Handbooks | 0.00 | 0.00 | 0.00 | 0.00 |
| | OT Detail (will be reimbursed) | 0.00 | 0.00 | 0.00 | 0.00 |
| NON BUDGET ITEMS TOTAL | | 3,000.00 | 0.00 | 0.00 | 3,000.00 |
| BUDGET TOTAL CUMB | | 1,652,048.00 | 129,035.16 | 348,078.54 | 1,303,969.46 |

CH 2015,000

NC 1,838,000

VF 1,793,000

x 7,298,000

Combined Budget Before
Consolidation

Cumberland Hill Fire District

Nov. 1, 2014 - June 30, 2015

Approved
2013-2014
Budget

Proposed
Nov 1, 2014 - June 30, 2015

Equipment Upgrading, Maintenance and Repair

| | | | |
|-----------------|---|---------------|---------------|
| 5111 | Vehicle Gas, Oil & Lubricants | 19,000 | 13,300 |
| 5112 | Vehicle Maint. & Repairs | 12,000 | 10,600 |
| 5121 | Upgrading & Purchase of Equipment | 12,000 | 8,400 |
| 5122 | Radio Equip. Upgrade & Repairs & Maint. | 2,000 | 1,400 |
| 5123 | Equipment Supplies & Expendables | 1,500 | 1,050 |
| 5124 | First Aid Equip. Supplies & Expendables | 4,000 | 3,200 |
| Subtotal | | 50,500 | 37,950 |

Fire Station Occupancy Expenses

| | | | |
|-----------------|---------------------------------------|---------------|---------------|
| 5231 | Telephone/Wireless Air Communications | 5,500 | 3,850 |
| 5232 | Electricity | 12,000 | 8,400 |
| 5233 | Heat & Water | 5,000 | 5,000 |
| 5234 | Building Supplies & Expendables | 3,500 | 2,450 |
| 5235 | Building Maint. & Repairs | 15,000 | 10,500 |
| 5236 | Sewer Assessments & User Fees | 600 | 500 |
| Subtotal | | 41,600 | 30,700 |

Salaries, Wages & Benefits

| | | | |
|-----------------|-------------------------------|------------------|------------------|
| 5340 | Firefighter Salaries & Wages | 1,069,680 | 785,543 |
| 5341 | Payroll Tax Expense | 86,000 | 60,200 |
| 5342 | Pension Plan Expense | 132,500 | 50,930 |
| 5343 | Medical Insurance | 360,000 | 240,000 |
| 5344 | Dental Insurance | 21,000 | 14,700 |
| 5345 | Vision Care Allowance | 700 | 700 |
| 5346 | Life Insurance | 2,520 | 2,520 |
| 5347 | Uniforms & Cleaning Allowance | 10,000 | 9,800 |
| 5349 | Manpower Training Expenses | 5,000 | 3,500 |
| 5350 | Part Time Firefighter Program | 0 | |
| 5351 | Health & Welfare Expenses | 1,000 | 700 |
| Subtotal | | 1,688,400 | 1,168,593 |

Administrative Expenses

| | | | |
|-----------------|--|----------------|----------------|
| 5411 | Insurances | 59,600 | 62,733 |
| 5412 | Supplies & Expenses Business Office <i>New</i> | 11,500 | 8,050 |
| 5416 | Supplies & Expenses - Fire Chief | 2,000 | 1,400 |
| 5417 | Contingency Expenses | 5,000 | 5,000 |
| 5418 | Newspaper Advertisements | 1,056 | 700 |
| 5419 | Computer Costs | 3,300 | 2,310 |
| 5420 | Computerized Payroll Processing Fees | 3,500 | 2,450 |
| 5421 | Computerized Accounting Reports | 2,550 | 1,850 |
| 5422 | Commissioners (5) | 7,700 | 1,000 |
| 5423 | Clerk | 1,200 | 0 |
| 5424 | Treasurer | 13,069 | 9,410 |
| 5425 | Business Manager | 36,800 | 26,544 |
| 5428 | Moderator | 225 | 0 |
| 5429 | District Accountant | 2,700 | \$ 2,000 |
| Subtotal | | 150,200 | 123,447 |

Total Operating Budget **1,930,700** **1,360,690**

Capital Funds

| | | | |
|-----------------|-------------------------|---------------|----------|
| | Cumberland Hydrant Fees | 85,000 | - |
| Subtotal | | 85,000 | - |

Grand Total **2,015,700** **1,360,690**

VALLEY FALLS FIRE DISTRICT

| | 2013/2014 | 2014/2015 | Difference |
|-----------------------------------|---------------------|---------------------|------------------|
| 1. Permanent Men Payroll | 698,487.51 | 723,942.73 | 25,455.22 |
| | | (10,000.00) off s | (10,000.00) |
| 2. Overtime | 176,846.40 | 190,000.00 | 13,153.60 |
| 3. Holiday | 55,254.18 | 52,630.75 | (2,623.43) |
| 4. Longevity/Incentive | 42,353.10 | 46,758.11 | 4,405.01 |
| 5. Out of Rank | 1,250.00 | 1,250.00 | - |
| 6. Part time program | 20,592.00 | 20,592.00 | - |
| 7. Call Back | 4,500.00 | 5,500.00 | 1,000.00 |
| 8. Call firefighters | 12,000.00 | 12,000.00 | - |
| 9. Clothing allowance call dept | 500.00 | 500.00 | - |
| 10. District Treasurer | 10,900.00 | 12,650.00 | 1,750.00 |
| 11. Tax Collector | 13,250.00 | 15,000.00 | 1,750.00 |
| 12. Wardens | 7,000.00 | 7,000.00 | - |
| 13. Social Security | 82,537.66 | 86,256.23 | 3,718.57 |
| 14. Pension Fund | 108,213.11 | 157,460.64 | 49,247.53 |
| 15. Health Insurance | 177,869.88 | 153,866.57 | (24,003.31) |
| 16. Dental Insurance | 14,024.76 | 14,030.38 | 5.62 |
| 17. Clothing allowance | 14,235.00 | 14,235.00 | - |
| 18. Tuition | 5,000.00 | 5,000.00 | - |
| 19. Employee welfare program | 550.00 | 550.00 | - |
| 20. Annual Meeting | 618.00 | 618.00 | - |
| 21. Annual meeting-Clerk | 50.00 | 50.00 | - |
| 22. Annual meeting-Moderator | 50.00 | 50.00 | - |
| 23. Truck payment | - | - | - |
| 24. Building repair and upkeep | 7,000.00 | 7,000.00 | - |
| 25. Cleaning | 1,475.00 | 1,475.00 | - |
| 26. Collector & Treasurer Expense | 13,060.00 | 13,060.00 | - |
| 27. Equipment Testing and Certif. | 2,855.00 | 2,855.00 | - |
| 28. Fire Appartus maintenance | 25,000.00 | 25,000.00 | - |
| 29. Fire equipment | 10,000.00 | 10,000.00 | - |
| 30. Fire equipment and repair | 3,000.00 | 4,000.00 | 1,000.00 |
| 31. Cumb. Hydrant fee | 6,600.00 | 6,600.00 | - |
| 32. Pawt. Hydrant fee | 70,113.78 | 70,113.78 | - |
| 33. Fire wardens per Diem | 500.00 | 500.00 | - |
| 34. Fuel | 15,000.00 | 15,000.00 | - |
| 35. Furnishings | 1,000.00 | 1,000.00 | - |
| 36. General repair and upkeep | 1,100.00 | 1,100.00 | - |
| 37. Insurance | 69,300.00 | 72,720.00 | 3,420.00 |
| 38. Clerk | 1,400.00 | 1,400.00 | - |
| 39. Legal fees | 5,000.00 | 5,000.00 | - |
| 40. Medical expense | 2,000.00 | 2,000.00 | - |
| 41. Emergency Medical supplies | 2,000.00 | 2,000.00 | - |
| 42. Miscellaneous Expenses | 3,500.00 | 3,500.00 | - |
| 43. Office expense | 1,000.00 | 1,000.00 | - |
| 44. Radio signal equipment | 2,000.00 | 2,000.00 | - |
| 45. Telephone | 2,475.00 | 2,475.00 | - |
| 46. Training | 2,500.00 | 2,500.00 | - |
| 47. Utilities | 17,500.00 | 17,500.00 | - |
| 48. Fire Alarm | 1,500.00 | 1,500.00 | - |
| 51. Grant Supplement Funding | 2,500.00 | 2,500.00 | - |
| 52. Administrative Assistant | 13,000.00 | 13,000.00 | - |
| 53. Offset Fire Prevention | | (3,500.00) | (3,500.00) |
| TOTAL BUDGET | 1,728,460.38 | 1,793,239.19 | 64,778.81 |

NORTH CUMBERLAND FIRE DISTRICT 2014-2015 BUDGET

page 1/2

| <u>Approved</u> | <u>Actual</u> | <u>2014-2015</u> |
|------------------|--------------------|------------------|
| <u>2014-2015</u> | <u>Expenditure</u> | <u>Remaining</u> |
| <u>Budget</u> | <u>2014-2015</u> | <u>Budget</u> |

Equipment Upgrading, Maintenance and Repair

| | | | |
|--|------------------|---|------------------|
| 6000 Vehicle Gas, Oil & Lubricants | 23,000.00 | - | 23,000.00 |
| 6010 Vehicle Maint. & Repairs | 18,000.00 | - | 18,000.00 |
| 6020 Truck Tires | 1,800.00 | - | 1,800.00 |
| 6030 Upgrading & Purchase of Equipment | 11,000.00 | - | 11,000.00 |
| 6040 Radio Equip. Upgrade & Repairs & Maint. | 2,000.00 | - | 2,000.00 |
| 6050 Equipment Supplies & Repairs | 4,000.00 | - | 4,000.00 |
| 6060 First Aid Equip. Supplies & Expendables | 3,500.00 | - | 3,500.00 |
| | 63,300.00 | - | 63,300.00 |

Fire Station Occupancy Expenses

| | | | |
|--|------------------|---|------------------|
| 6100 Electricity | 7,000.00 | - | 7,000.00 |
| 6110 Heat and Water | 8,000.00 | - | 8,000.00 |
| 6120 Telephone | 5,500.00 | - | 5,500.00 |
| 6130 Building Supplies, Repairs & Improvements | 7,500.00 | - | 7,500.00 |
| 6140 Air Cascade Maintenance | 350.00 | - | 350.00 |
| 6150 Miscellaneous | 1,500.00 | - | 1,500.00 |
| 6160 Capitol Improvements | | - | - |
| Subtotal | 29,850.00 | - | 29,850.00 |

Salaries, Wages & Benefits

| | | | |
|---------------------------------|---------------------|---|---------------------|
| 6200 Payroll | 736,000.00 | - | 736,000.00 |
| 6200 Overtime | 210,000.00 | - | 210,000.00 |
| 6205 Payroll Admin. Assistant | 13,000.00 | - | 13,000.00 |
| 6210 Social security | 78,000.00 | - | 78,000.00 |
| 6220 Pension Plan Expense | 154,000.00 | - | 154,000.00 |
| 6230 Volunteers | 15,000.00 | - | 15,000.00 |
| 6240 Drills and Training | 6,000.00 | - | 6,000.00 |
| 6250 B/C, D/D, Medical & Vision | 237,000.00 | - | 237,000.00 |
| 6260 Uniforms | 11,500.00 | - | 11,500.00 |
| Subtotal | 1,460,500.00 | - | 1,460,500.00 |

NORTH CUMBERLAND FIRE DISTRICT 2014-2015 BUDGET

page 2/2

| | |
|------------------|-------------------|
| <u>Approved</u> | <u>Actual</u> |
| <u>2014-2015</u> | <u>penditures</u> |
| <u>Budget</u> | <u>2014-2015</u> |

Administrative Expenses

| | | | |
|--------------------------------------|-------------------|---|-----------------|
| 6300 Trustees Fees | 8,500.00 | - | 8,500.00 |
| 6310 Clerk Fees | 2,575.00 | - | 2,575.00 |
| 6330 Tax Collector Fees | 15,000.00 | - | 15,000.00 |
| 6340 Treasurer Fee | 17,000.00 | - | 17,000.00 |
| 6350 Insurance | 52,700.00 | - | 52,700.00 |
| 6360 FF Tuiton Reimbursement A | 4,500.00 | - | 4,500.00 |
| 6370 FF Tuiton Reimbursement B | | - | |
| 6380 FP ands EMS Training | 3,000.00 | - | 3,000.00 |
| 6390 Clerk's Expenses | | - | |
| 6400 Printing and Postage | 2,400.00 | - | 2,400.00 |
| 6410 Newspaper Ads | 1,000.00 | - | 1,000.00 |
| 6420 Affiliated Fire Associations | 450.00 | - | 450.00 |
| 6430 Chief's Administartive Expenses | 1,250.00 | - | 1,250.00 |
| 6440 Christmas Party | 250.00 | - | 250.00 |
| 6450 Office Supplies and Expenses | 1,000.00 | - | 1,000.00 |
| 6460 Computerized Tax Bills | 4,000.00 | - | 4,000.00 |
| 6470 Computer Development Program | 1,000.00 | - | 1,000.00 |
| 6480 Professional Fees | 7,500.00 | - | 7,500.00 |
| 6490 Medical Examinations | 1,500.00 | - | 1,500.00 |
| 6500 External Accounting Fees | | - | |
| 6550 Hydrant Fees | 85,000.00 | - | 85,000.00 |
| 6560 Payroll Service | 7,500.00 | - | 7,500.00 |
| Subtotal | 216,125.00 | - | 216,125.00 |

Restricted Funds

| | | | |
|----------------------------|------------------|---|-----------|
| 8500 Truck Lease Interest | 8,368.00 | | 8,368.00 |
| 8510 Truck Lease Principle | 54,000.00 | | 54,000.00 |
| 8520 Tax Refunds | | - | |
| 8530 Tax Collection Fees | | - | |
| 8550 Clarke Settlement | 6,000.00 | - | 6,000.00 |
| Subtotal | 68,368.00 | - | 68,368.00 |

| | | | |
|-------------------------------|---------------------|---|---------------------|
| Total Operating Budget | 1,838,143.00 | - | 1,838,143.00 |
|-------------------------------|---------------------|---|---------------------|

Cumberland Fire Comparative Expenses
For the Most Recent Fiscal Years Ended That Include June 30, 2010 - For Discussion Purposes Only

| | <u>North Cumberland</u> | | <u>Cumberland Hill</u> | | <u>Cumberland</u> | | <u>Valley Falls</u> | | <u>Total</u> | |
|-------------------------------------|-------------------------|--------|------------------------|--------|-------------------|--------|---------------------|--------|------------------|--------|
| Salary, wages, & benefits: | | | | | | | | | | |
| Payroll | 1,023,224 | 52.1% | 925,187 | 49.5% | 868,996 | 54.1% | 933,400 | 58.8% | 3,750,807 | 53.4% |
| B/C, M/M, D/D, & Vision Care | 241,764 | 12.3% | 268,059 | 14.3% | 171,128 | 10.7% | 186,524 | 11.7% | 867,475 | 12.3% |
| Pension | 179,001 | 9.1% | 138,795 | 7.4% | 141,688 | 8.8% | 65,151 | 4.1% | 524,635 | 7.5% |
| Social Security & Medicare | 82,473 | 4.2% | 79,097 | 4.2% | 72,289 | 4.5% | 77,740 | 4.9% | 311,599 | 4.4% |
| Total Salary, wages, & benefits | <u>1,526,462</u> | 77.8% | <u>1,411,138</u> | 75.5% | <u>1,254,101</u> | 78.1% | <u>1,262,815</u> | 79.5% | <u>5,454,516</u> | 77.6% |
| Operating Expenses | | | | | | | | | | |
| Call Firefighters | 8,624 | 0.4% | 13,424 | 0.7% | 22,539 | 1.4% | 31,727 | 2.0% | 76,314 | 1.1% |
| Tax Collection Costs | 13,092 | 0.7% | 35,545 | 1.9% | 0 | 0.0% | 12,418 | 0.8% | 61,055 | 0.9% |
| Uniforms | 12,440 | 0.6% | 12,371 | 0.7% | 9,900 | 0.6% | 14,369 | 0.9% | 49,080 | 0.7% |
| Trustees fees | 12,803 | 0.7% | 7,700 | 0.4% | 10,500 | 0.7% | 7,000 | 0.4% | 38,003 | 0.5% |
| Collector's / Business Manager Fees | 14,376 | 0.7% | 32,857 | 1.8% | 0 | 0.0% | 11,749 | 0.7% | 58,982 | 0.8% |
| Treasurer's fee | 17,001 | 0.9% | 11,089 | 0.6% | 32,595 | 2.0% | 9,400 | 0.6% | 70,085 | 1.0% |
| Insurance | 48,939 | 2.5% | 38,011 | 2.0% | 49,381 | 3.1% | 46,795 | 2.9% | 183,126 | 2.6% |
| Small Equipment & Repairs | 32,773 | 1.7% | 43,410 | 2.3% | 41,567 | 2.6% | 24,931 | 1.6% | 142,681 | 2.0% |
| Hydrant Fees | 83,667 | 4.3% | 83,820 | 4.5% | 49,500 | 3.1% | 73,375 | 4.6% | 290,362 | 4.1% |
| Utilities | 15,370 | 0.8% | 17,933 | 1.0% | 11,876 | 0.7% | 15,288 | 1.0% | 60,467 | 0.9% |
| Telephone | 4,622 | 0.2% | 3,858 | 0.2% | 4,376 | 0.3% | 2,503 | 0.2% | 15,359 | 0.2% |
| Legal Fees | 32,865 | 1.7% | 25,456 | 1.4% | 1,519 | 0.1% | 8,750 | 0.6% | 68,590 | 1.0% |
| Outside Accountant | 0 | 0.0% | 2,500 | 0.1% | 4,600 | 0.3% | 0 | 0.0% | 7,100 | 0.1% |
| Drills & Training | 10,769 | 0.5% | 6,235 | 0.3% | 20,414 | 1.3% | 8,949 | 0.6% | 46,367 | 0.7% |
| Building Repairs | 4,751 | 0.2% | 13,307 | 0.7% | 10,888 | 0.7% | 5,739 | 0.4% | 34,685 | 0.5% |
| Gas, Diesel & Oil | 19,530 | 1.0% | 10,905 | 0.6% | 8,694 | 0.5% | 10,236 | 0.6% | 49,365 | 0.7% |
| Various Operating Expenses | 29,027 | 1.5% | 21,358 | 1.1% | 19,170 | 1.2% | 13,080 | 0.8% | 82,635 | 1.2% |
| Total Operating Expense | <u>360,649</u> | 18.4% | <u>379,779</u> | 20.3% | <u>297,519</u> | 18.5% | <u>296,309</u> | 18.7% | <u>1,334,256</u> | 19.0% |
| Payments for New Equipment & Loans | 76,121 | 3.9% | 77,170 | 4.1% | 54,034 | 3.4% | 29,411 | 1.9% | 236,736 | 3.4% |
| Total Expenses | <u>1,963,232</u> | 100.0% | <u>1,868,087</u> | 100.0% | <u>1,605,654</u> | 100.0% | <u>1,588,535</u> | 100.0% | <u>7,025,508</u> | 100.0% |

NCFD

JUNE YEAR TO DATE

| | May YTD | June Actual | June YTD | 2009/2010 BUDGET | PERCENT REMAINING caution |
|--|---------------------|---------------------|---------------------|---------------------|---------------------------------|
| 4000 - TAXES COLLECTED | 1,698,571.10 | 11,313.85 | 1,709,884.95 | 1,721,314.00 | 0.66% |
| 4010 - INTEREST INCOME | 1,170.74 | 36.18 | 1,206.92 | 4,479.00 | 73.05% |
| 4030 - GAIN ON SALE OF TRUCK | 18,350.00 | 0.00 | 18,350.00 | 15,000.00 | -22.33% |
| 4040 - TAXES STATE RI- EXCISE TAX | 83,468.52 | 27,822.76 | 111,291.28 | 112,000.00 | 0.63% |
| 4070 - MISC. | 3,701.80 | 0.00 | 3,701.80 | 7,220.00 | 48.73% |
| 4100 - VARIOUS FEES | 6,009.96 | 1,932.00 | 7,941.96 | 2,400.00 | -230.92% |
| 4150 - FIRE DETAIL FEES | 0.00 | 0.00 | 0.00 | 0.00 | #DIV/0! |
| | <u>1,811,272.12</u> | <u>41,104.79</u> | <u>1,852,376.91</u> | <u>1,862,413.00</u> | <u>-3.33%</u> |
| 6000 - GAS, DIESEL, AND OIL | 16,752.79 | 2,777.50 | 19,530.29 | 13,500.00 | -44.67% |
| 6010 - TRUCK REPAIRS | 12,945.01 | (4,724.63) | 8,220.38 | 18,900.00 | 56.51% |
| 6020 - TRUCK TIRES | 557.00 | 0.00 | 557.00 | 1,800.00 | 69.06% |
| 6030 - UPGRADING & PUR NEW EQUIPMENT | 11,225.14 | 6,723.09 | 17,948.23 | 12,600.00 | -42.45% |
| 6040 - RADIO EQUIPMENT & REPAIRS | 2,417.20 | 0.00 | 2,417.20 | 2,700.00 | 10.47% |
| 6050 - SUPPLIES & REPAIRS TO EQUIPMENT | 3,631.30 | 0.00 | 3,631.30 | 3,600.00 | -0.87% |
| 6060 - FIRST AID EQUIP & EMS SUPPLIES | 1,614.75 | 220.65 | 1,835.40 | 1,800.00 | -1.97% |
| 6100 - ELECTRICITY | 6,364.28 | 627.22 | 6,991.50 | 6,750.00 | -3.58% |
| 6110 - HEAT & WATER | 7,915.70 | 463.68 | 8,379.38 | 9,900.00 | 15.36% |
| 6120 - TELEPHONE | 4,446.60 | 175.92 | 4,622.52 | 4,320.00 | -7.00% |
| 6130 - BULD SUPPLIES, REPAIRS, & BMR | 4,327.65 | 423.87 | 4,751.52 | 6,000.00 | 20.81% |
| 6140 - AIR CASCADE MAINTENANCE | 350.00 | 0.00 | 350.00 | 450.00 | 22.22% |
| 6150 - MISCELLANEOUS | 2,293.25 | 0.00 | 2,293.25 | 2,160.00 | -6.17% |
| 6160 - MAINT. & UPGRADE SCHOOL HOUSE | 0.00 | 0.00 | 0.00 | 0.00 | #DIV/0! |
| 6200 - PAYROLL | 941,591.97 | 81,631.56 | 1,023,223.53 | 1,050,000.00 | 2.55% |
| 6210 - SOCIAL SECURITY & MEDICARE | 74,697.84 | 7,775.24 | 82,473.08 | 82,000.00 | -0.58% |
| 6220 - PENSION | 167,704.45 | 11,296.71 | 179,001.16 | 170,000.00 | -5.29% |
| 6230 - VOLUNTEERS | 5,794.53 | 2,830.24 | 8,624.77 | 6,600.00 | -30.68% |
| 6240 - DRILLS AND TRAINING | 394.00 | 1,751.85 | 2,145.85 | 5,000.00 | 57.08% |
| 6250 - B/C, M/M, D/D, & VISION CARE | 219,264.93 | 22,499.56 | 241,764.49 | 228,000.00 | -6.04% |
| 6260 - UNIFORMS | 11,256.51 | 1,184.40 | 12,440.91 | 13,000.00 | 4.30% |
| 6300 - TRUSTEES FEES | 0.00 | 12,802.50 | 12,802.50 | 12,803.00 | 0.00% |
| 6310 - CLERKS FEE | 0.00 | 2,938.00 | 2,938.00 | 2,938.00 | 0.00% |
| 6330 - COLLECTORS FEE | 13,178.00 | 1,198.00 | 14,376.00 | 14,376.00 | 0.00% |
| 6340 - TREASURERS FEE | 15,584.25 | 1,416.75 | 17,001.00 | 17,000.00 | -0.01% |
| 6350 - INSURANCE | 48,939.00 | 0.00 | 48,939.00 | 47,000.00 | -4.13% |
| 6360 - F/F TRAINING TUITION REIMBUR-A | 3,040.00 | 0.00 | 3,040.00 | 1,980.00 | -53.54% |
| 6370 - F/F TRAINING TUITION REIMB - B | 0.00 | 0.00 | 0.00 | 0.00 | #DIV/0! |
| 6380 - F/F TRAINING & EMS EXPENSES | 4,018.22 | 2,800.00 | 6,818.22 | 6,480.00 | -5.22% |
| 6400 - PRINTING & POSTAGE | 2,054.18 | 203.83 | 2,258.01 | 2,340.00 | 3.50% |
| 6410 - NEWSPAPER ADS | 155.94 | 183.00 | 338.94 | 1,620.00 | 79.08% |
| 6420 - AFFILIATED FIRE ASSOCIATION | 888.57 | 130.48 | 1,019.05 | 900.00 | -13.23% |
| 6430 - CHIEF'S ADMINISTRATIVE EXPENSE | 522.97 | 632.97 | 1,155.94 | 1,350.00 | 14.37% |
| 6440 - CHRISTMAS EXPENSE | 2,011.35 | 0.00 | 2,011.35 | 225.00 | -793.93% |
| 6450 - OFFICE SUPPLIES & EXPENSE | 2,387.04 | 0.00 | 2,387.04 | 1,350.00 | -76.82% |
| 6470 - COMPUTER DEVELOPMENT PROGRAM | 1,913.94 | 365.37 | 2,279.31 | 1,800.00 | -26.63% |
| 6480 - PROFESSIONAL FEES | 22,535.00 | 10,330.00 | 32,865.00 | 2,700.00 | -1117.22% |
| 6490 - MEDICAL EXAMINATIONS | 1,060.00 | 0.00 | 1,060.00 | 1,350.00 | 21.48% |
| 6500 - MODERATOR'S FEE | 0.00 | 0.00 | 0.00 | 0.00 | #DIV/0! |
| 6530 - TAX COLLECTION EXPENSES | 3,078.87 | 7.00 | 3,085.87 | 0.00 | #DIV/0! |
| 6550 - HYDRANT FEES | 83,667.00 | 0.00 | 83,667.00 | 85,000.00 | 1.57% |
| 6560 - PAYROLL SERVICE | 6,154.57 | 493.00 | 6,647.57 | 5,500.00 | -20.86% |
| 8500 - TRUCK LEASE | 11,234.00 | 906.67 | 12,140.67 | 12,121.00 | -0.16% |
| 8520 - TAX REFUNDS | 1,272.11 | 0.00 | 1,272.11 | 0.00 | #DIV/0! |
| 8530 - TAX COLLECTION FEES | 100.00 | 0.00 | 100.00 | 0.00 | #DIV/0! |
| 8550 - LEGAL FEES-TAX SALE | 10,034.50 | 0.00 | 10,034.50 | 0.00 | #DIV/0! |
| | <u>1,729,374.41</u> | <u>170,064.43</u> | <u>1,899,438.84</u> | <u>1,857,913.00</u> | <u>-2.24%</u> |
| | <u>81,897.71</u> | <u>(128,959.64)</u> | <u>(47,061.93)</u> | <u>4,500.00</u> | <u>16.70%</u> |

A New equipment & repairs - 32773

B Utilities - 15370.

C Drills & Training - 10769.

Cumberland Hill Fire District 2009 - 2010 Proposed Budget

11/9/2009

Approved
2008-2009
Budget

Actual

Under
Over

Proposed
2009-2010
Budget

Equipment Upgrading, Maintenance and Repair

| | | | | | |
|------|---|---------------|---------------|--------------|---------------|
| 5111 | Vehicle Gas, Oil & Lubricants | 14,000 | ✓ 10,905 | 3,095 | 12,000 |
| 5112 | Vehicle Maint. & Repairs | 11,000 | C 13,644 | (2,644) | 11,000 |
| 5121 | Upgrading & Purchase of Equipment | 20,000 | C 19,766 | 234 | 15,000 |
| 5122 | Radio Equip. Upgrade & Repairs & Maint | 4,000 | C 1,996 | 2,004 | 3,000 |
| 5123 | Equipment Supplies & Expendables | 2,500 | C 3,736 | (1,236) | 2,500 |
| 5124 | First Aid Equip. Supplies & Expendables | 4,000 | C 4,268 | (268) | 5,000 |
| | Subtotal | 55,500 | 54,315 | 1,185 | 48,500 |

Fire Station Occupancy Expenses

| | | | | | |
|------|---------------------------------|---------------|---------------|--------------|---------------|
| 5231 | Telephone | 3,600 | ✓ 3,858 | (258) | 3,600 |
| 5232 | Electricity | 9,000 | B 10,204 | (1,204) | 9,500 |
| 5233 | Heat & Water | 7,500 | B 6,700 | 800 | 7,500 |
| 5234 | Building Supplies & Expendables | 3,500 | D 3,067 | 433 | 3,500 |
| 5235 | Building Maint. & Repairs | 5,000 | D 5,340 | (340) | 5,000 |
| 5236 | Sewer Assessments & User Fees | 900 | B 1,029 | (129) | 1,000 |
| | Subtotal | 29,500 | 30,198 | (698) | 30,100 |

Salaries, Wages & Benefits

| | | | | | |
|------|-------------------------------|------------------|------------------|-----------------|------------------|
| 5340 | Firefighter Salaries & Wages | 860,000 | ✓ 892,092 | (32,092) | 938,000 |
| 5341 | Payroll Tax Expense | 75,000 | ✓ 79,097 | (4,097) | 80,000 |
| 5342 | Pension Plan Expense | 148,000 | ✓ 138,795 | 9,205 | 142,000 |
| 5343 | Medical Insurance | 247,015 | A 242,711 | 4,304 | 278,000 |
| 5344 | Dental Insurance | 15,530 | FA 16,674 | (1,144) | 18,500 |
| 5345 | Vision Care Allowance | 700 | A 650 | 50 | 700 |
| 5346 | Life Insurance | 2,520 | A 2,340 | 180 | 2,100 |
| 5347 | Uniforms & Cleaning Allowance | 12,400 | ✓ 12,371 | 29 | 11,000 |
| 5348 | Call Firefighter Stipends | 18,000 | ✓ 13,424 | 4,576 | 14,000 |
| 5349 | Manpower Training Expenses | 8,000 | ✓ 6,235 | 1,765 | 8,000 |
| 5350 | Part Time Firefighter Program | 36,000 | ✓ 33,095 | 2,905 | 36,000 |
| 5351 | Health & Welfare Expenses | 3,500 | A 5,684 | (2,184) | 3,500 |
| | Subtotal | 1,426,665 | 1,443,168 | (16,503) | 1,531,800 |

(A) Health - 268059
 (B) Utilities - 17933
 (C) New Equip. Repair - 43410
 (D) Building Repair - 13307
 (E) Loan - 104655

Interest ?

| | | <u>Proposed</u> <u>2008-2009</u> <u>Budget</u> | <u>Actual</u> | <u>Over</u> <u>Under</u> | <u>Proposed</u> <u>2009-2010</u> <u>Budget</u> |
|---|--------------------------------------|--|------------------|-----------------------------|--|
| Administrative Expenses | | | | | |
| 5411 | Insurances | 41,800 | ✓38,011 | 3,789 | 46,034 |
| 5413 | Supplies & Expenses - Tax Collector | 10,500 | ✓8,639 | 1,861 | 10,500 |
| 5414 | Office Supplies & Expenses | 2,000 | 4,580 | (2,580) | 2,000 |
| 5415 | Supplies & Expenses - Treasurer | 1,000 | 678 | 322 | 1,000 |
| 5416 | Supplies & Expenses - Fire Chief | 3,000 | 2,219 | 781 | 3,000 |
| 5417 | Contingency Expenses | 6,000 | 3,334 | 2,666 | 5,000 |
| 5418 | Newspaper Advertisements | 500 | 988 | (488) | 550 |
| 5419 | Computer Costs | 3,300 | 3,196 | 104 | 3,300 |
| 5420 | Computerized Payroll Processing Fees | 2,400 | 2,228 | 172 | 3,000 |
| 5421 | Computerized Accounting Reports | 2,550 | 2,550 | - | 2,550 |
| 5422 | Commissioners (5) | 7,700 | ✓7,700 | - | 7,700 |
| 5423 | Clérk | 1,200 | 1,200 | - | 1,200 |
| 5424 | Treasurer | 11,087 | ✓11,089 | (2) | 11,530 |
| 5425 | Business Manager | 32,857 | - 32,857 | - | 34,171 |
| 5426 | Assistant Tax Collector | 500 | 160 | 340 | 500 |
| 5428 | Moderator | 225 | 225 | - | 225 |
| 5429 | District Accountant | 2,500 | ✓2,500 | - | 2,700 |
| | Subtotal | 129,119 | 122,154 | 6,965 | 134,960 |
| Restricted Funds | | | | | |
| 5510 | Health Benefits Fund <i>ND</i> | 20,000 | 20,000 | - | 20,000 |
| 5520 | Fire Truck Replacement Sinking Fund | 95,000 | <i>E</i> ✓95,000 | - | 95,000 |
| 5540 | Major Building Repairs | 9,000 | <i>D</i> ✓4,900 | 4,100 | 5,800 |
| 5550 | Loan Repayment Command Vehicle | 9,654 | <i>E</i> 9,655 | (1) | - |
| | Subtotal | 133,654 | 129,555 | 4,099 | 120,800 |
| | Total Operating Budget | 1,774,438 | 1,779,390 | (4,952) | 1,866,160 |
| Special Funds | | | | | |
| | Cumberland Hydrant Fees | 85,000 | ✓83,820 | 1,180 | 85,000 |
| | Subtotal | 85,000 | 83,820 | 1,180 | 85,000 |
| | Grand Total | 1,859,438 | 1,863,210 | (3,772) | 1,951,160 |
| <i>A in 1000</i> <i>unbudgeted Expenses \$ 25,456</i> <i>26,906</i> <i>20,000</i> <i>(23,495)</i> <i>1,868,081</i> | | | | | |
| Page 120 of 135 | | | | | A Lambi |

Cumberland Fire District
FY10 Monthly Expenditures

| ACCOUNT | | APPROVED BUDGET 2009-2010 | Preliminary y/e figures 2009-2010 | Variance 2009 | Proposed BUDGET 2010-2011 |
|-------------------------------|--------------------------------------|---------------------------------|---|------------------|---------------------------------|
| OFFICE SUPPLIES | | | | | |
| 1 | ADVERTISING | 1,000.00 | 693.39 | 306.61 | 1,000.00 |
| 2 | OFFICE SUPPLIES | 1,500.00 | 1,951.99 | -451.99 | 1,500.00 |
| 2a | POSTAGE | 1,500.00 | 984.52 | 515.48 | 1,500.00 |
| 2b | BANK FEES | 1,800.00 | 1,424.16 | 375.84 | 1,500.00 |
| 3 | PRINTING | 500.00 | 526.60 | -26.60 | 500.00 |
| 4 | TAX EXPENSES | 3,000.00 | 2,948.50 | 51.50 | 3,000.00 |
| 5 | OFFICE EQUIPMENT | 1,000.00 | 2,838.72 | -1,838.72 | 2,000.00 |
| | Office Supplies total: | 10,300.00 | 11,367.88 | -1,067.88 | 11,000.00 |
| ADMINISTRATIVE COST | | | | | |
| 6 | ACCOUNTING | 5,000.00 | 4,600.00 | 400.00 | 5,000.00 |
| 6b | PAYROLL COMP EXP | 2,500.00 | 2,453.35 | 46.65 | 2,500.00 |
| 7 | CLERK | 1,700.00 | 1,701.57 | -1.57 | 1,800.00 |
| 7a | STENOGRAPHER | 200.00 | 180.00 | 20.00 | 200.00 |
| 8 | COMMISSIONERS | 10,500.00 | 10,500.00 | 0.00 | 10,500.00 |
| 9 | INSURANCE | 39,000.00 | 49,381.00 | -10,381.00 | 49,000.00 |
| 10 | LEGAL | 5,000.00 | 1,519.74 | 3,480.26 | 3,000.00 |
| 11 | MODERATOR | 100.00 | 100.00 | 0.00 | 100.00 |
| 11a | UNEMPLOYMENT | 0.00 | 0.00 | 0.00 | 0.00 |
| 12 | TAX COLL/ASSESS/TREASURER | 30,000.00 | 32,594.50 | -2,594.50 | 32,000.00 |
| | Admin. Cost Total: | 94,000.00 | 103,030.16 | | 104,100.00 |
| PAYROLL | | | | | |
| 13 | BLUE CROSS | 156,000.00 | 157,183.88 | -1,183.88 | 159,085.00 |
| 14 | CLOTHING ALLOWANCE | 9,900.00 | 9,900.00 | 0.00 | 9,900.00 |
| 15 | DELTA DENTAL | 12,000.00 | 10,786.38 | 1,213.62 | 11,843.00 |
| | FULL TIME SALARY | 639,000.00 | 629,475.89 | 9,524.11 | 630,000.00 |
| | FULL TIME PENSION | 143,000.00 | 141,687.92 | 1,312.08 | 145,000.00 |
| 18 | LONGEVITY PAY | 27,000.00 | 27,314.44 | -314.44 | 29,000.00 |
| 19 | PAYROLL TAXES | 70,000.00 | 72,289.88 | -2,289.88 | 72,000.00 |
| 20 | OTHER | 0.00 | 0.00 | 0.00 | 0.00 |
| 20a | MILITARY LEAVE (OT) | 0.00 | 0.00 | 0.00 | 0.00 |
| 20b | VAC (OT to cover Vac) | 67,000.00 | 83,019.16 | -16,019.16 | 65,000.00 |
| 20c | HOLIDAY | 38,000.00 | 36,978.96 | 1,021.04 | 37,000.00 |
| 20d | OT (overtime) | 44,000.00 | 40,439.85 | 3,560.15 | 52,000.00 |
| 20e | SICK (OT) to cover Sick | 46,000.00 | 47,631.40 | -1,631.40 | 50,000.00 |
| 20f | SICK TIME payout | 3,000.00 | 4,135.68 | -1,135.68 | 5,000.00 |
| 21 | EMT/MAIN/EMS/TRAINING | 8,600.00 | 7,600.00 | 1,000.00 | 8,000.00 |
| 22 | LIFE INSURANCE | 1,700.00 | 1,560.00 | 140.00 | 1,560.00 |
| 23a | CALL FORCE | 20,000.00 | 20,039.54 | -39.54 | 20,000.00 |
| 23b | CALL FORCE -Chief | 2,500.00 | 2,500.00 | 0.00 | 2,500.00 |
| | Payroll Total: | 1,287,700.00 | 1,292,542.98 | | 1,297,888.00 |
| DUES & CONVENTIONS | | | | | |
| 24 | CHIEF'S CONVENTION | 800.00 | 700.00 | 100.00 | 800.00 |
| 25 | PROFESSIONAL DUES | 700.00 | 564.00 | 136.00 | 900.00 |
| | Dues & Conventions Total: | 1,500.00 | 1,264.00 | | 1,700.00 |
| UTILITIES | | | | | |
| 26a | SHARED COMMUNICATIONS | 500.00 | 0.00 | 500.00 | 1,000.00 |
| 26b | SHARED FIRE BOX SERVICE FEES | 500.00 | 0.00 | 500.00 | 500.00 |
| 27a | ELECTRIC | 5,000.00 | 5,056.21 | -56.21 | 5,000.00 |
| 27b | HEAT | 6,000.00 | 3,844.20 | 2,155.80 | 6,000.00 |
| 28 | TELEPHONE | 4,500.00 | 4,376.14 | 123.86 | 4,500.00 |
| 29 | WATER | 1,700.00 | 1,457.60 | 242.40 | 1,500.00 |
| | SEWER ASSESSMENT/USAGE | 1,000.00 | 1,519.11 | -519.11 | 1,500.00 |
| | HYDRANT FEES | 49,500.00 | 49,500.00 | 0.00 | 49,500.00 |
| | Utilities Totals: | 68,700.00 | 65,753.26 | | 69,500.00 |

② Health Ins 171128

④ OT-

⑤ Call - 22539

⑤ Prof fees - 5164

⑤ Utilities 11876

⑤ Training - 20414

⑤ New Eg. rep - 4567

Interest?

Cumberland Fire District
FY10 Monthly Expenditures

| ACCOUNT | | APPROVED BUDGET 2009-2010 | Preliminary y/e figures 2009-2010 | Variance 2009 | Proposed BUDGET 2010-2011 |
|-----------------------------------|---------------------------------------|---------------------------------|---|------------------|---------------------------------|
| TRAINING | | | | | |
| 32 | TRAINING | 8,000.00 | 4,423.84 | 3,576.16 | 8,000.00 |
| 33 | EDUCATION | 4,000.00 | 3,390.21 | 609.79 | 4,000.00 |
| 33A | PROFESSIONAL DEVELOPMENT | 5,000.00 | 5,000.00 | 0.00 | 5,000.00 |
| Training Total: | | 17,000.00 | 12,814.05 | | 17,000.00 |
| BUILDING | | | | | |
| 36 | STATION IMPROVEMENTS | 6,000.00 | 6,508.05 | -508.05 | 7,000.00 |
| 37 | STATION MAINTENANCE | 5,000.00 | 4,380.39 | 619.61 | 5,000.00 |
| Building Total: | | 11,000.00 | 10,888.44 | | 12,000.00 |
| APPARATUS | | | | | |
| 39 | FUEL & OIL | 13,000.00 | 8,693.46 | 4,306.54 | 13,000.00 |
| 40 | REPAIRS & MAINTENANCE | 15,000.00 | 23,907.25 | -8,907.25 | 15,000.00 |
| Apparatus Total: | | 28,000.00 | 32,600.71 | | 28,000.00 |
| EQUIPMENT | | | | | |
| 41 | SHARED AIR SUPPLY/PPE MAINT | 500.00 | 450.00 | 50.00 | 600.00 |
| 42 | COMMUNICATION UPGRADING | 2,000.00 | 2,774.88 | -774.88 | 2,200.00 |
| 43 | EQUIPMENT REPAIR | 2,000.00 | 2,237.01 | -237.01 | 2,000.00 |
| 43a | REPLACEMENT ITEMS | 3,000.00 | 2,832.77 | 167.23 | 3,000.00 |
| 44 | NEW EQUIPMENT | 5,000.00 | 3,872.94 | 1,127.06 | 10,000.00 |
| 45 | RADIO MAINTENANCE | 500.00 | 786.00 | -286.00 | 500.00 |
| 46 | EQUIPMENT UPGRADE | 5,000.00 | 4,707.20 | 292.80 | 5,000.00 |
| Equipment Total: | | 18,000.00 | 17,660.80 | | 23,300.00 |
| MISCELLANEOUS | | | | | |
| 48 | PHYSICALS | 1,500.00 | 684.00 | 816.00 | 1,500.00 |
| | EMPLOYEE SUPPORT | 1,000.00 | 914.75 | 85.25 | 1,000.00 |
| Miscellaneous Total: | | 2,500.00 | 1,598.75 | | 2,500.00 |
| Budget Totals: | | 1,538,700.00 | 1,549,521.03 | | 1,566,988.00 |
| ADDITIONAL EXPENSES: | | | | | |
| IMPROVEMENTS/LONG TERM LIA | | | | | |
| | Various station renovations | 0.00 | 0.00 | 0.00 | |
| | FEMA Grant (Town Wide soft match) | 3,000.00 | 104.00 | 2,896.00 | 3,000.00 |
| | Emergency Generator w/ trnsfr. Switch | 0.00 | 0.00 | 0.00 | |
| | Fire Truck Engine #22 | 0.00 | 0.00 | 0.00 | |
| | Fire Truck Engine #23 | 38,098.00 | 38,098.00 | 0.00 | 38,098.00 |
| | Brush Truck Replacement | 5,000.00 | 0.00 | 5,000.00 | 5,000.00 |
| | Chiefs Truck Replacement | 5,000.00 | 15,936.06 | -10,936.06 | 5,000.00 |
| | Replenish Contingency Fund | 0.00 | 0.00 | 0.00 | |
| Total Improvements | | 51,098.00 | 54,138.06 | -3,040.06 | 51,098.00 |
| NON BUDGET ITEMS | | | | | |
| | Fire Prevention | 2,600.00 | 2,001.22 | 598.78 | 2,400.00 |
| | Handbooks | 0.00 | 0.00 | 0.00 | |
| | OT Detail (will be reimbursed) | 0.00 | | | 0.00 |
| Total Non Budget Items | | 2,600.00 | 2,001.22 | 598.78 | 2,400.00 |
| TOTAL BUDGET | | 1,592,398.00 | 1,605,660.31 | -13,262.31 | 1,620,486.00 |
| FEMA REVOLVING | | 0.00 | 0 | | 0.00 |

Valley Falls Fire District
Profit & Loss
June 15, 2009 through June 14, 2010

Interest ?

Expense

| | | |
|----------------------------------|---------------------------|--------------------------------|
| 01. Permanent Men Payroll | 671,246.91 ^x | |
| 02. Overtime | 117,652.31 ^x | (A) B/C - 186524 |
| 03. Holiday | 50,126.80 ^x | (B) Call Firefighters - 37468. |
| 04. Longevity/Incentive | 40,398.20 | |
| 05. Out of Rank | B 1,304.67 | (C) Uniforms - 14369 |
| 06. Part time Programs | 48,235.00 | |
| 07. Call Back | D 5,740.44 | (D) Equipment repairs - 24931 |
| 08. Call Firefighters | B 30,424.33 | |
| 09. Clothing Allowance Call Dep | C 182.00 | |
| 10. District Treasurer | 9,399.98 ^x | (E) Hydrant - 73375 |
| 11. Tax Collector | 11,749.92 ^x | (F) Training - 8949 |
| 12. Fire Wardens | 7,000.00 | (G) Build Repair - 5739. |
| 13. Social Security | 77,740.68 ^x | |
| 14. Pension Fund | 65,151.21 ^x | |
| 15. Health Insurance | A 172,185.55 ^x | |
| 16. Dental Insurance | A 14,338.31 ^x | |
| 17. Clothing Allowance | C 14,187.52 ^x | |
| 18. Tuition | F 6,154.00 ^x | |
| 19. Employee Welfare Programs | 625.00 | |
| 20. Annual Meeting | 608.80 | |
| 21. Annual Meeting-Clerk | 50.00 | |
| 22. Annual Meeting-Moderator | 50.00 | |
| 23. Truck Payment | 29,411.34 ^x | |
| 24. Building Repair & Upkeep | G 3,757.67 ^x | |
| 25. Cleaning | 0.00 | |
| 26. Collector & Treasurer Expen | 12,418.64 ^x | |
| 27. Equip. Testing & Cert. | 2,622.31 | |
| 28. Fire Apparatus Maintenance | D 14,025.12 ⁺ | |
| 29. Fire Equipment | D 8,054.05 ⁺ | |
| 30. Fire Equipment Repair | D 2,852.41 ⁺ | |
| 31. Cumberland Hydrant Fee | E 6,600.00 ⁺ | |
| 32. Fire Hydrant Fee | E 66,775.50 ⁺ | |
| 33. Fire Wardens Per Diem | 500.00 | |
| 34. Fuel | 10,236.43 ^x | |
| 35. Furnishings | 500.00 | |
| 36. General Repair & Maintenance | G 1,982.13 ^x | |
| 37. Insurance | 46,795.00 ⁺ | |
| 38. Clerk | 900.00 | |
| 39. Legal Fees | 8,750.00 ⁺ | |
| 40. Medical Expenses | 1,897.75 | |
| 41. Emergency Medical Service | 1,378.59 | |
| 42. Miscellaneous Expense | 2,136.20 | |
| 43. Office Expense | 938.48 | |
| 44. Radio Signal Equipment | 731.48 | |
| 45. Telephone | 2,503.62 ^x | |
| 46. Training | F 2,795.00 ^x | |
| 47. Utilities | 15,288.39 ⁺ | |
| 48. Fire Alarm System | 145.00 | |
| 50. Contingency Fund | 18,413.67 | |
| Total Expense | 1,606,960.41 | |
| Net Ordinary Income | 214,448.57 | |

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North Cumberland Fire Department
Reconciliation of Cash Balances
From June 30, 2010 through June 30, 2014

| | |
|---|-------------------------------------|
| Cash Balances at June 30, 2010 | \$262,637 |
| Add: Cash Surplus earned during 2011 fiscal year | 85,548 |
| Less: Cash Surplus used (spent) during 2011 fiscal year | 0 |
| Add: Proceeds received from refinancing of Fire Truck | 160,000 |
| Less: Truck Proceeds used to offset tax rate | <u>0</u> |
| Cash Balances at June 30, 2011 | 508,185 |
| Add: Cash Surplus earned during 2012 fiscal year | 108,990 |
| Less: Cash Surplus used (spent) during 2012 fiscal year | <u>0</u> |
| Cash Balances at June 30, 2012 | 617,175 |
| Add: Cash Surplus earned during 2013 fiscal year | 215,940 |
| Less: Cash Surplus used (spent) during 2013 fiscal year | <u>0</u> |
| Cash Balances at June 30, 2013 | 833,115 |
| Add: Cash Surplus earned through <u>June</u> April 30, 2014 | 31,823 218,772 |
| Less: Cash Surplus used (spent) during 2014 fiscal year | <u>0</u> |
| Cash Balances at <u>June</u> April 30, 2014 | 864,938 1,051,887 |

NORTH CUMBERLAND FIRE DISTRICT

| | 30-Jun-13 | 31-May-14 | 30-Jun-14 | Comments |
|---------------------------------------|-----------------------|-----------------------|-----------------------|--|
| ASSETS | | | | |
| Citizens Checking Account | \$38,533.87 | \$58,493.63 | \$93,222.29 | |
| Citizens Money Market Account | 3,720.01 | 3,057.30 | 32,345.96 | |
| Navigant Credit Union | 746,562.39 | 873,761.42 | 719,318.14 | |
| Navigant Credit Union - | 25,425.79 | 1,000.00 | 1,000.00 | CD expired and funds moved to NCU money market account |
| Cumberland MEFCU - 6 month CD | 18,708.15 | 18,886.10 | 18,886.10 | |
| Cumberland MEFCU - share account | 35.17 | 35.23 | 35.25 | |
| Petty Cash - Chief | 100.00 | 100.00 | 100.00 | |
| Petty Cash - Tax Collector | 30.00 | 30.00 | 30.00 | |
| Total Savings/Cash | 833,115.38 | 955,363.68 | 864,937.74 | |
| OTHER CURRENT ASSETS | | | | |
| Prepaid Expense | 33,187.40 | 0.00 | 4,818.51 | RI tax refund deposited in 7/14 |
| Taxes Receivable | 272,956.89 | 305,813.45 | 281,532.07 | Reflects all taxes owed as of 6/14 |
| Total Other Current Assets | 306,144.29 | 305,813.45 | 286,350.58 | |
| FIXED ASSETS | | | | |
| Land and Building - estimated value | 350,000.00 | 350,000.00 | 350,000.00 | |
| Equipment - estimated value | 82,500.00 | 82,500.00 | 82,500.00 | |
| Auto Equip T-5 1993 Quint. | 329,708.00 | 329,708.00 | 329,708.00 | |
| Auto Equip B-51 Ford F-550 | 41,021.00 | 41,021.00 | 41,021.00 | |
| Auto Equip C-55 98 Jeep Cherokee | 0.00 | 0.00 | 0.00 | |
| Auto Equip C-5 06 Expedition | 35,819.00 | 35,819.00 | 35,819.00 | |
| Pierce PUC | 567,465.00 | 567,465.00 | 567,465.00 | |
| Office Equip & Furn - estimated value | 9,200.00 | 9,200.00 | 9,200.00 | |
| Total Fixed Assets | 1,415,713.00 | 1,415,713.00 | 1,415,713.00 | |
| TOTAL ASSETS | \$2,554,972.67 | \$2,676,890.13 | \$2,567,001.32 | |
| LIABILITIES AND EQUITY | | | | |
| Current Liabilities: | | | | |
| Accrued Expenses | 73,226.13 | 3,889.67 | 43,294.70 | Includes Chief's and Deputy Chief's salary (net owed) through June |
| PEBSO - Deferred Comp | 485.00 | 435.00 | 465.00 | |
| Union Dues | 780.00 | 660.00 | 660.00 | |
| RI State Pension | 4,323.60 | 4,614.02 | 4,410.88 | |
| Total Current Liabilities | 78,814.73 | 9,598.69 | 48,830.58 | |
| Long Term Liabilities: | | | | |
| Restricted - FPA | 37,273.39 | 39,922.10 | 40,612.10 | Represents funds in Fire Protection Account |
| Reserve For Uncollected Taxes | 272,956.89 | 305,813.45 | 281,532.07 | Reflects all taxes owed as of 6/14 |
| Lease Obligation - Pierce PUC | 246,452.91 | 202,494.20 | 198,389.62 | Reduction due to principal payments |
| Total Liabilities | 635,497.92 | 557,828.44 | 569,364.37 | |
| EQUITY | | | | |
| Retained Earnings | 1,727,126.41 | 1,919,474.75 | 1,919,474.75 | |
| Net Income | 192,348.34 | 199,586.94 | 78,162.20 | Reflects aggregate income (loss) through June |
| Total Equity | 1,919,474.75 | 2,119,061.69 | 1,997,636.95 | |
| TOTAL LIABILITIES AND EQUITY | \$2,554,972.67 | \$2,676,890.13 | \$2,567,001.32 | |







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FLSA & Firefighters

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While many of the "regular rules" of the FLSA apply to fire protection employees, there are some "special rules," as well. These include "special 7(k) work periods" which may increase the FLSA overtime thresholds, and some peculiar regulations governing "sleep time."

Special "7(k) Work Periods."

Public-sector (government) fire departments may establish special "7(k) work periods" for sworn firefighters, which can increase the FLSA overtime "thresholds" beyond the normal 40 hour week. Firefighters covered by these special work periods are entitled to FLSA overtime only for hours worked in excess of a threshold set by the Department of Labor on a chart. For example, in a 28 day work period, fire fighters would be entitled to FLSA overtime only for hours actually worked over 212 during that 28 day period (in essence, a 53 hour work week). "7(k)" refers to the section of the FLSA in which these special rules are contained, 29 USC §207(k). Most fire fighters who work "platoon schedules" will be classified by their employers as "7(k) eligible" and compensated accordingly.

The special work periods and overtime rules are available only for employees who meet the statutory definition of "employees in fire protection activities" which is contained at §203(y):

'Employee in fire protection activities' means an employee, including a firefighter, paramedic, emergency medical technician, rescue worker, ambulance personnel, or hazardous materials worker, who

(1) is trained in fire suppression, has the legal authority and responsibility to engage in fire suppression, and is employed by a fire department of a municipality, county, fire district, or State, and

(2) is engaged in the prevention, control, and extinguishment of fires or response to emergency medical situations where life, property, or the environment is at risk.

Thus, to qualify for §7(k) pay as a fire protection employee under this statutory definition, an employee must (a) work for a (government) fire department, (b) be trained in fire suppression, (c) have the legal authority to fight fires, (d) have the responsibility to fight fires, (e) and either actually engage in fire suppression work of the type defined or non-fire related emergency responses.

There is at least one court decision which has held that arson investigators employed at fire departments are not eligible for §7(k) pay as "employees in fire protection." Arson investigators may be eligible for § 7(k) pay as "employees in law enforcement activities," using the different thresholds permitted for these employees. (See, [FLSA and Police Officers](#).) Some EMS employees may be eligible for §7(k) pay as employees in fire protection activities, however some EMS workers may be "40 hour week" employees. (See, [FLSA and Paramedics](#).)

Private fire protection employers are not permitted to use the special §7(k) work periods, and employees of private fire companies must be paid FLSA overtime for all hours worked over 40 per week. A private fire company means a fire protection unit of private industry. A public sector fire company means that the employer is the government. Employees of "volunteer" fire departments probably count as public sector employees.

Hours Worked.

For FLSA purposes, "hours worked" means time when the employee is actually performing services for the employer. These are the only hours which must be included when determining if FLSA overtime is due. Thus, for example, "Kelly days" or other paid leave days do not count as hours worked for FLSA purposes. "Sleep time" and meal breaks may or may not count as FLSA hours

exceed the applicable FLSA overtime threshold -- 40 hours per week or whatever the applicable "chart" hours are for a 7(k) work period. So long as employees receive at least minimum wage for FLSA hours worked under the FLSA overtime threshold, there is generally no federal violation. "FLSA overtime" may therefore be different from "contract overtime."

FLSA hours worked include not only "on the clock" hours worked, but also "off the clock" hours worked, so long as the employer "knows or has reason to believe" that the employee is performing this "extra" work and permits it to happen. The following may constitute compensable FLSA hours worked when performed during off the clock time: Care and maintenance of work equipment (e.g., arson dogs, trucks and engines, hoses, uniforms), work performed before or after regular shifts, job-related paperwork performed at home, job-related telephone calls from home, (most) training time.

Overtime Rate.

An employee's FLSA overtime rate should be calculated to include not only "base pay" but also various "wage augments" such as "longevity pay" and "shift differentials." These must be included only for calculating the employee's FLSA overtime rate, and need not be included for any other pay purposes.

Sleep Time.

The FLSA permits employers to exclude up to 8 hours from work time when shifts are exactly 24 consecutive hours (private sector) or more than 24 hours (public sector), as "sleep time." To permit a sleep time exclusion requires that there be an "agreement" with the employees. An employee who takes a job which has a sleep time exclusion in place will be deemed to have "agreed" to it. There must also be adequate sleeping facilities, and the employees must normally have the opportunity to obtain 5 hours of sleep. The 5 hours need not be consecutive, and if an employee does not have the opportunity to get at least 5 hours of sleep no sleep time exclusion is permitted. Any time during the sleep period when an employee is actually performing work must be counted as work time.

Meal Periods.

Unpaid meal periods may be excluded from FLSA hours worked, so long as the employee actually gets to take an "uninterrupted" meal break. Minor interruptions will be tolerated, but if an employee "works through lunch" the time must be included as FLSA hours worked. Merely being "on call" during a meal period is not sufficient to require meal breaks to be included as FLSA hours worked.

"On Call" or "Stand By" Time.

On call or stand by time need not generally be included as FLSA hours worked. An employer may require employees to "remain available" to be called into work without having to pay FLSA wages for that time. The only exception is if the employer places restrictions on the use of stand by or on call time which make it virtually impossible for the employee to use the time for any personal purposes. Such situations are very rare. "If you can watch TV when you are on call, you probably are not entitled to FLSA compensation for the time." Any work an employee does during on call or stand by status must be compensated appropriately.

Schedule Adjustments.

The FLSA permits employers to adjust schedules to avoid FLSA overtime, so long as the adjustments occur within a work period. Thus, a fire company may, consistent with the FLSA, require an employee "not to work" within a work period, for the purpose of avoiding the employee reaching the FLSA overtime threshold during that work period. However, an employer is not permitted to "average" FLSA hours worked from work period to work period. Stated another way, the FLSA is generally not concerned with an employee's actual schedule within a work period. The employer may, consistent with the FLSA, require an employee to work pretty much when it wishes. The FLSA generally governs only how an employee must be paid for FLSA overtime worked during a work period. The employee's FLSA hours worked "vest" at the end of the last day of the work period. At that point, the total FLSA hours worked (during that work period) are added, and any FLSA hours worked over the FLSA threshold must be compensated as overtime. Overtime owed for FLSA hours worked during one work period may not be offset by "hours not worked" during some other work period. Note that local law, employment contracts, or collective bargaining agreements may independently restrict an employer from requiring schedule adjustments, irrespective of the FLSA.

Compensatory Time.

Government employers are permitted to pay some FLSA overtime with "comp. time" in lieu of cash wages. To be permitted to pay FLSA overtime with comp. time instead of cash, there must be an "agreement" with the employees before the FLSA overtime work is performed. If the employees are represented by a union, this agreement must be collectively bargained. If not, it may be a "condition of employment" (at least for new hires) or contained in individual agreements. Comp. time in lieu of cash wages for FLSA overtime must be paid at the appropriate FLSA overtime rate -- time and one-half. Employees must be permitted to use their accrued FLSA comp. time pretty much when they want to (on reasonable notice), but an employer may require an employee to "burn" accrued FLSA comp. time. An employer may not prohibit an employee from using accrued FLSA comp. time unless the time off would create a real disruption in operations. A desire by the employer to avoid having to call in another employee for shift coverage are not sufficient reasons to deny comp. time requests, as that is a financial reason and not an operational hardship.

The FLSA comp. time rules apply only to "FLSA comp. time." This is "time" awarded in lieu of cash wages for hours worked which would be required to be treated and paid as overtime under the FLSA. Some employers grant comp. time to employees for other purposes or on other schedules. The FLSA comp. time rules do not apply to this kind of comp. time.

"Moonlighting" and "Dual Employment."

Employees may not "volunteer" to do similar work for the same employer without the time being counted as FLSA work time. Firefighters may not perform "additional" fire related activities for their employers without that time being included as hours worked for FLSA pay computation purposes. Also, employees who work "two jobs" for the same employer must aggregate their total hours worked for FLSA pay purposes. For example, a fire fighter who works 40 hours as a firefighter and an additional 20 hours as an animal control officer has a total of 60 FLSA hours worked. Employees are permitted to work "moonlighting" jobs -- for separate employers -- without the hours being aggregated. Employees may sometimes work for "joint employers," such as when they are assigned to a "task force." In such cases, each employer is equally liable to be sure FLSA wages are paid properly.

See, also, [Paramedics.](#)

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**TOWN OF CUMBERLAND, RI
PROPOSED GENERAL FUND
EXPENDITURE BUDGET
FISCAL YEAR 2015 / 16**

Town RESCUE - 025 Budget

As of 5/5/2015

| Account # | Account Description | FY 2013 | | FY 2014 | | FY 2015 | | FY 2016 | | |
|-------------------|-------------------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|-----------------|
| | | Revised Budget | Actual Expended | Revised Budget | Actual Expended | Revised Budget | YTD Expended | Request Budget | Mayor Proposed | Council Adopted |
| 1-101-025-1010-20 | Regular Salaries Rescue | 961,713 | 1,001,095 | 1,023,762 | 1,054,454 | 1,065,072 | 891,306 | 1,113,153 | 1,113,153 | |
| 1-101-025-1019-20 | Rescue Holiday Pay | 63,629 | 73,347 | 70,114 | 71,083 | 74,495 | 46,440 | 77,474 | 77,474 | |
| 1-101-025-1020-20 | Overtime | 175,000 | 181,179 | 200,000 | 197,365 | 200,000 | 193,692 | 204,000 | 200,000 | |
| 1-101-025-1040-20 | Longevity Rescue | 51,888 | 52,112 | 58,989 | 56,038 | 65,524 | 65,465 | 71,792 | 71,792 | |
| 1-101-025-1050-20 | Clothing/Cleaning | 30,600 | 31,211 | 32,300 | 29,889 | 32,300 | 25,005 | 32,300 | 32,300 | |
| 1-101-025-1060-20 | Maintenance Agreements | 4,000 | 7,379 | 6,000 | 10,918 | 9,500 | 10,981 | 11,000 | 11,000 | |
| 1-101-025-1080-20 | Special Services | 1,500 | 1,229 | 1,000 | 1,434 | 1,000 | 0 | 1,000 | 1,000 | |
| 1-101-025-2010-20 | Repairs Building | 6,050 | 6,007 | 5,000 | 3,155 | 1,500 | 1,168 | 1,000 | 1,000 | |
| 1-101-025-2020-20 | Repairs Equipment | 3,342 | 2,045 | 2,000 | 1,431 | 2,000 | 509 | 0 | 0 | |
| 1-101-025-2030-20 | Repairs Office Equipment | 58 | 58 | 0 | 190 | 0 | 0 | 0 | 0 | |
| 1-101-025-2035-20 | Repairs Vehicles | 23,600 | 23,951 | 25,000 | 24,085 | 25,000 | 15,823 | 25,000 | 25,000 | |
| 1-101-025-2060-20 | Postage | 1,000 | 255 | 600 | 82 | 600 | 166 | 500 | 500 | |
| 1-101-025-2070-20 | Office Supplies | 3,600 | 1,993 | 0 | 320 | 0 | 52 | 0 | 0 | |
| 1-101-025-2080-20 | Operating Supplies | 20,000 | 21,102 | 22,400 | 33,021 | 22,400 | 26,643 | 28,000 | 28,000 | |
| 1-101-025-2088-20 | Lease Payment Rescue Vehicles | 0 | 0 | 0 | 0 | 42,000 | 42,000 | 92,000 | 91,364 | |
| 1-101-025-2090-20 | Janitorial Supplies | 2,000 | 1,253 | 0 | 780 | 0 | 0 | 0 | 0 | |
| 1-101-025-2100-20 | Fuel and Oil | 25,000 | 33,228 | 32,000 | 31,282 | 32,000 | 18,974 | 33,000 | 33,000 | |
| 1-101-025-2110-20 | Heating/Air Conditioning | 8,000 | 4,087 | 6,000 | 5,238 | 6,000 | 3,011 | 6,000 | 6,000 | |
| 1-101-025-2120-20 | Electricity | 6,000 | 6,343 | 6,000 | 6,484 | 6,000 | 5,832 | 6,000 | 6,000 | |
| 1-101-025-2130-20 | Telephone | 3,100 | 2,469 | 3,100 | 3,230 | 3,100 | 1,672 | 3,000 | 3,000 | |
| 1-101-025-2131-20 | Cell phones | 3,000 | 2,905 | 3,600 | 3,037 | 3,600 | 2,126 | 3,600 | 3,600 | |
| 1-101-025-2140-20 | Water | 0 | 467 | 500 | 720 | 500 | 191 | 500 | 500 | |
| 1-101-025-2160-20 | Travel and Conventions | 700 | 0 | 700 | 0 | 700 | 0 | 700 | 700 | |
| 1-101-025-2170-20 | Education and Training | 3,446 | 9,135 | 5,000 | 2,664 | 5,000 | 981 | 5,000 | 5,000 | |
| 1-101-025-2170-20 | Rescue Education P/R | 5,782 | 0 | 0 | 2,414 | 0 | 4,155 | 0 | 0 | |
| 1-101-025-2176-20 | College Reimbursement | 1,072 | 1,072 | 3,000 | 0 | 4,500 | 4,155 | 3,000 | 3,000 | |
| 1-101-025-2180-20 | Dues and Subscriptions | 5,100 | 503 | 4,000 | 1,090 | 1,500 | 171 | 2,000 | 2,000 | |
| 1-101-025-3016-20 | Efficiency Savings | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| 1-101-025-4011-20 | Furniture, Equip & Fixtures | 0 | 0 | 1,000 | 552 | 1,000 | 0 | 1,000 | 1,000 | |
| 1-101-025-4030-20 | Radio & Computer Equipment | 4,000 | 1,768 | 5,000 | 8,144 | 5,000 | 771 | 5,000 | 5,000 | |
| 1-101-025-4038-20 | Technological Upgrades | 1,000 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| 1-101-025-4042-20 | Personal Equipment | 47,050 | 41,084 | 47,500 | 36,098 | 1,000 | 800 | 0 | 0 | |
| 1-101-025-4052-20 | Testing for Employment | 2,000 | 0 | 2,000 | 0 | 2,000 | 0 | 2,000 | 1,000 | |
| | RESCUE | 1,463,230 | 1,507,275 | 1,566,565 | 1,585,197 | 1,613,291 | 1,362,087 | 1,728,019 | 1,722,383 | 0 |

TOWN OF CUMBERLAND, RI
PROPOSED GENERAL FUND
EXPENDITURE BUDGET
FISCAL YEAR 2015 / 16

RESCUE - 025

| | |
|----------------------------------|------------------|
| <u>Permanent Services</u> | |
| 1 Director | 75,346 |
| 1 Paramedic Director | 56,449 |
| 1 Paramedic - Captain Paramedic | 54,429 |
| 1 Paramedic - Captain EMT | 54,000 |
| 6 Paramedics - Lt | 321,321 |
| 7 PVT / Paramedic | 316,061 |
| 2 Paramedics | 105,354 |
| 2 EMT / PVT | 92,832 |
| 1 Clerk | 37,361 |
| Clothing Allowance | 32,300 |
| Health Club Allowance | 3,000 |
| Longevity | 71,792 |
| Total Permanent Services | 1,220,245 |

| | |
|---|----------------|
| <u>Employee Benefits - Informational Purposes Only</u> | |
| Employee Co-Share | 35,000 |
| Health | 315,948 |
| Dental | 16,896 |
| FICA | 114,690 |
| Pension | 135,684 |
| Life Insurance | 6,210 |
| Total Benefits | 589,428 |

Voter Referendum, November 2010

- Shall the Cumberland Town Council be empowered to **implement improved** fire services **delivery** in Cumberland through the conduct of a comprehensive feasibility Planning Assessment with input from key stakeholders, service providers, personnel of the current four (4) fire districts and members of the public leading to the establishment of a state-of-the-art fire services delivery agency by January 1, 2013? This consolidated agency could be an independent or municipal Town or regional fire and rescue services agency.

- Approve: 10,033
- Reject: 2,544