

# CITY FIRE DEPARTMENT

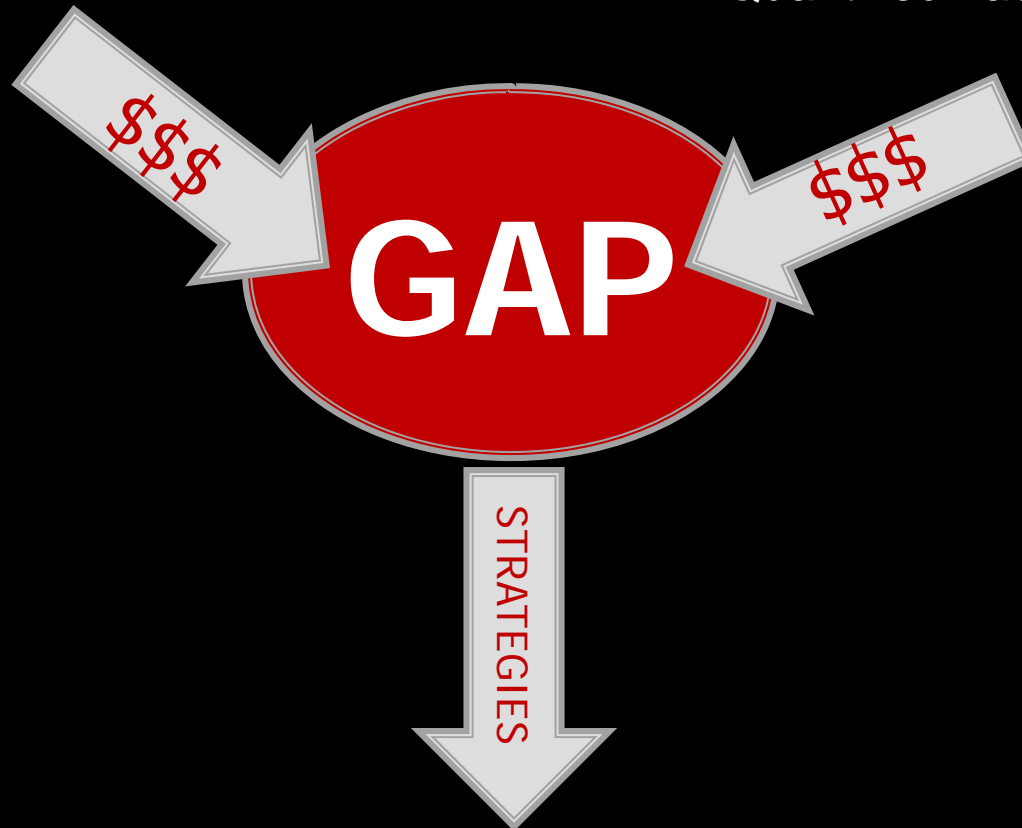


Labor Supply and Demand Gap Analysis  
Fire Department  
April 21-27, 2009

# GAP ANALYSIS SUMMARY

Quantified Labor Supply

Quantified Labor Demand



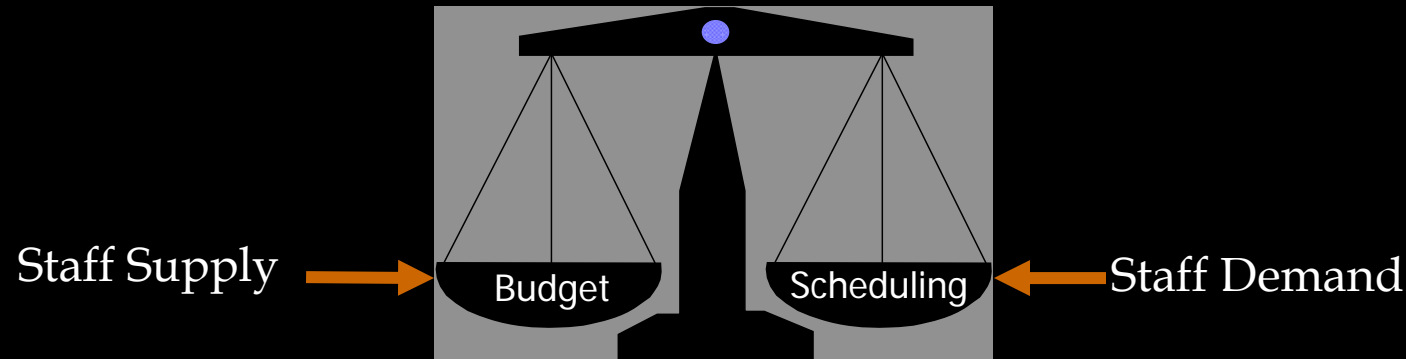
**Apply Strategies That  
Best Resolve Gaps**

# GAP ANALYSIS DELIVERABLES

- Research of Other Shift Schedule Designs Used by Other Similar Fire Departments
- Research Regarding FLSA Overtime as FLSA Relates to Fire Department Operations
- Assess Current Staff Scheduling and Deployment Management Processes, Focused on Cost Effectiveness
- Perform Labor Supply and Demand Gap Analyses
- Develop Recommendations
- Prepare and Present Findings
- Prepare Implementation Plan for Automated Staff Scheduling

# BALANCING LABOR SUPPLY AND DEMAND

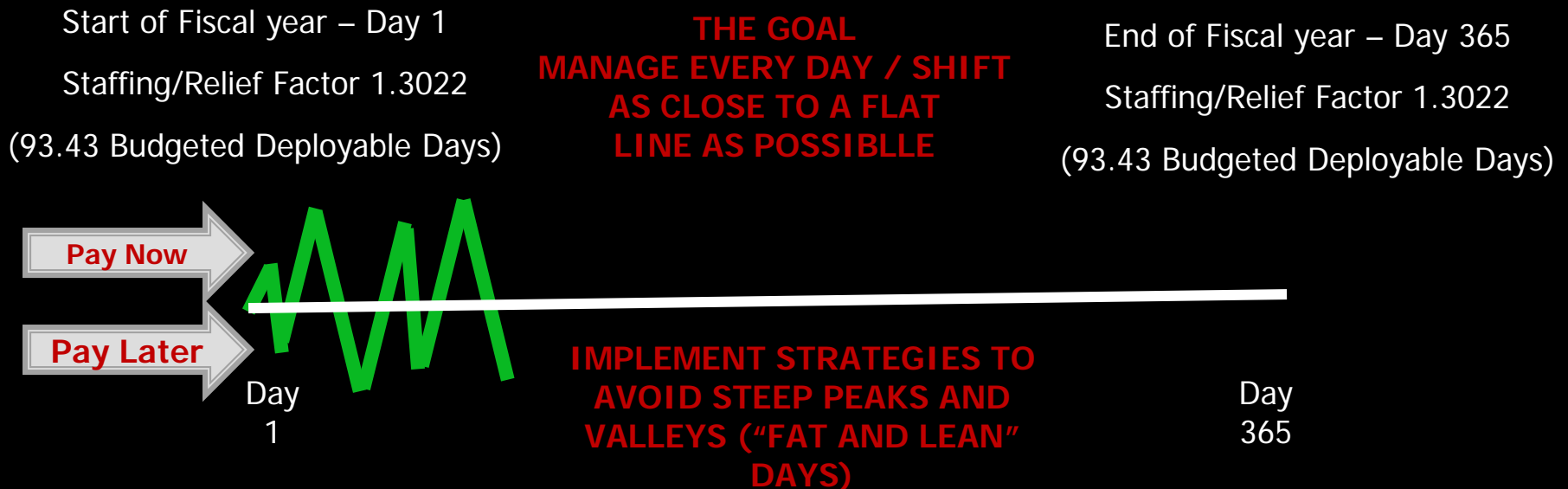
$$\underline{\text{Staff Demand} \times \text{Staffing/Relief Factor} = \text{Staff Supply}}$$



- Staff Supply: Permanent Positions (FTE) + Part-time Staff + Overtime + Premium Pay
- Staff Demand: Work Profiles + Shift Schedules + Special Events – Flexibility
- Staffing/Relief Factor: Base Year Days/ Average Annual Deployable Days

# MANAGING TO OFF-DUTY LIMITS

- Staffing/relief factors determine the number of relief staff (fractional salaries) needed to cover when regular staff (salary) are absent (sick, vacation, Kelly days, etc.).
- Staff "fat and lean" days are budget busters.
- Since the staffing/relief factor is an average spread across an entire year to include each reason of non deployability should be managed as close to a flat line as possible.



# FINDINGS

- Staff supply is in balance with demand when looking across all ranks.
  - District Chiefs under staffed by 1.31 FTE (maximum level of 2)
  - Lieutenants under staffed by 5.44 FTE
  - Driver/Engineers under staffed by 3.76 FTE
  - Fire Fighters over staffed by 10.03 FTE
  
- Overall, staffing/relief factors (average annual deployable days) are within an acceptable range.
  - Average annual deployable days for Lieutenants: 96.63
  - Average annual deployable days for Driver/Engineers: 105.19
  
- Current union agreement is restrictive in ability to manage to off-duty limits and minimizing overtime.
  - 20% scheduled off-duty a day
  - 14 day work period
  - Working up between ranks to fill demand
  - Including Kelly days in determining when overtime applies
  
- Fluctuations in scheduled off-duty has affected mandatory overtime (unable to measure).

# FINDINGS

- Considering limitations imposed by union agreement, overtime appears to be effectively managed.
- Deployment for special events has been effectively managed.
- Current schedule design (one day on/two days off) is efficient and appears to be the preference by suppression staff. Other design strategies could be used but wouldn't be any more efficient.
  - 2 on/4 off is as efficient, reduces commute time, and as easy to administer but not favored by staff (concern it could impact sick time usage)
- Lack of effective information system limits ability to manage schedule and absence issues to the most efficient level.
  - Shift, rank, station, equipment, person

# FINDINGS

## OFF-DUTY LIMITS REVIEW

- Using the 2008 data provided by the fire department, the off duty limit (the number of employees that MUST be off duty (to few is as bad as too many on any given day / shift)) for all staff is 6.36 full time equivalent positions **for all absence conditions and not just planned leaves.**
- The chart below reveals that about 2/3 of the days the fire department is not managing to off duty limits (over or under by a full time equivalent position or more). The "fat and lean" days that are as a result of this management of time off, by itself, can account for a significant percentage of overtime funds expended.

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
1	Taken from Palm Bay Fire Department Excel Workbook	2005	Per Day		2006	Per Day		2007	Per Day		2008	Per Day		2009	Per Day
2	File Name - Fire 2 Leave Tracking	Avg	6.61		Avg	6.32		Avg	6.63		Avg	6.36		Avg	6.38
3															Jan/Mar
4	YEAR	2005	2005		2006	2006		2007	2007		2008	2008		2009	2009
5	OVER/NDER +/- 1	>= 7.61	<= 5.61		>= 7.32	<= 5.32		>= 7.63	<= 5.63		>= 7.36	<= 5.36		>= 7.61	<= 5.61
6	JANUARY	1	19		12	9		10	15		5	13		18	13
7	FEBRUARY	7	11		6	14		9	11		3	15		16	12
8	MARCH	9	13		9	15		12	7		14	9		23	8
9	APRIL	5	17		10	8		9	12		12	9			
10	MAY	8	12		11	13		10	14		10	9			
11	JUNE	11	6		6	11		12	7		16	5			
12	JULY	17	6		15	7		11	8		15	2			
13	AUGUST	12	8		5	13		11	7		9	9			
14	SEPTEMBER	14	4		10	14		6	11		8	14			
15	OCTOBER	17	3		13	12		5	18		8	14			
16	NOVEMBER	16	4		14	7		11	9		8	14			
17	DECEMBER	13	11		13	6		13	9		12	10			
18	ANNUAL TOTALS - OVER/UNDER BY 1	130	114		124	129		119	128		120	123		57	33
19	PERCENTAGE LESS THAN 1	35.6%			34.0%			32.6%			32.9%			63.3%	
20	PERCENTAGE GREATER THAN 1		31.2%			35.3%			35.1%			33.7%			36.7%
21															
22	The analysis of the 2005, 2006, 2007, 2008 and 2009 data contained in the Excel Workbook did not include the leave time off by leave time category (such as sick and vacation) so we needed to do the analysis based on the yearly averages.														

# FINDING

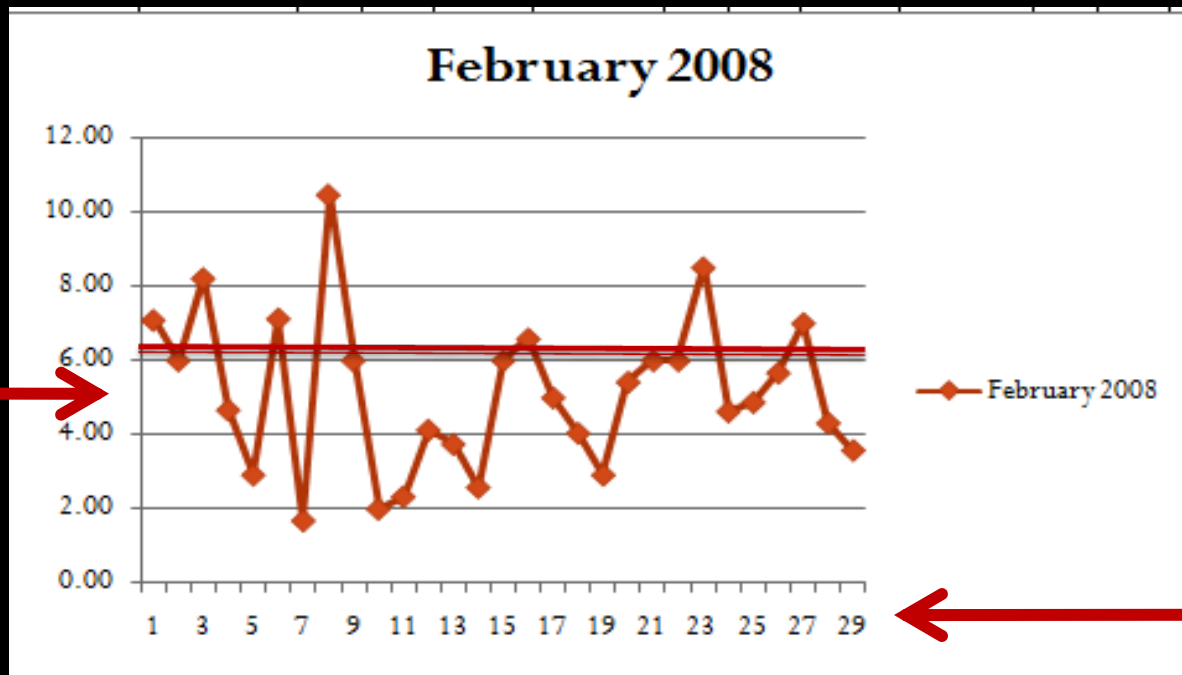
## OFF-DUTY LIMITS REVIEW

### February 2008 - Leave / Absenteeism Flat line Experience

We selected one month during which employees typically use less leave (February in our experience) than during other months we refer to as prime time months (June and July in our experience). The flat line (black horizontal line) is the average of 6.36 employees off duty per day.

The February chart below is consistent with what we have found over the years. When too few employees are planned off duty for vacation as an example those days can not be saved up for use at some other time.

Number of full time equivalent positions



Dates

# FINDINGS

## OFF-DUTY LIMITS REVIEW

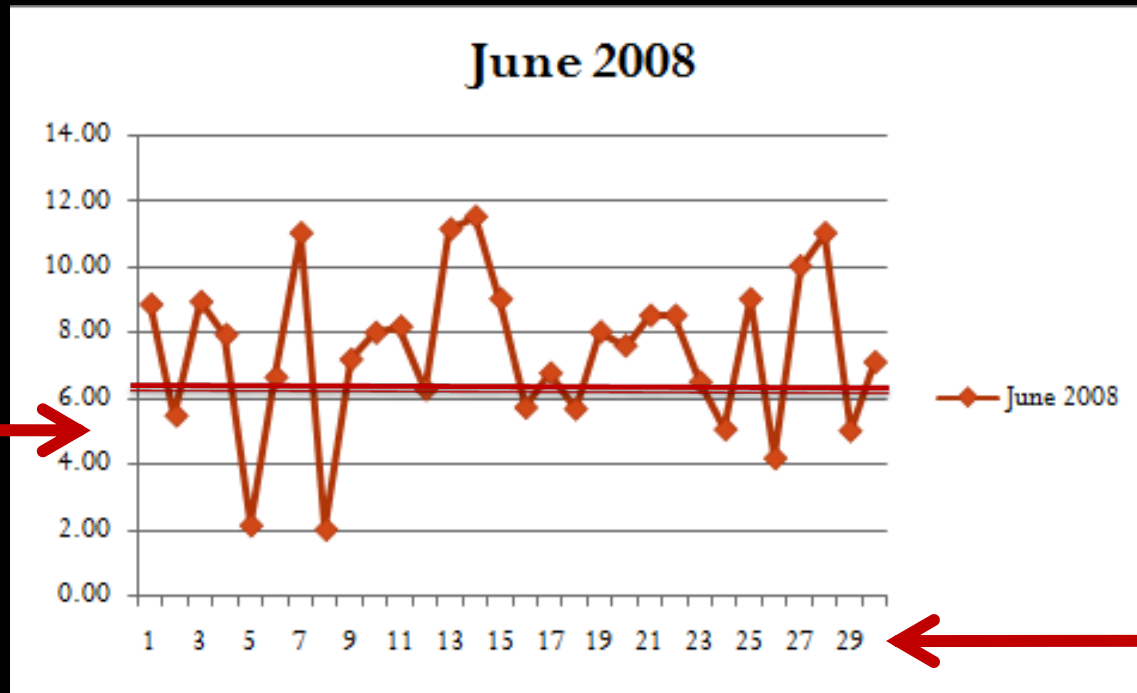
June 2008 - Leave / Absenteeism Flat line Experience

June is one of the months we find are prime time months and during those months more employees request time off. If off duty limits are not carefully calculated and used it is easy to over schedule time off and thus create overtime and or staffing shortages.

To maintain the flat line no more or less than 6.36 full time equivalent employees should be absent.

It is possible to ramp up the number off during prime time by using our "Windows" concept for leave planning.

Number of full time equivalent positions



Dates



# FINDINGS

## OFF-DUTY LIMITS REVIEW

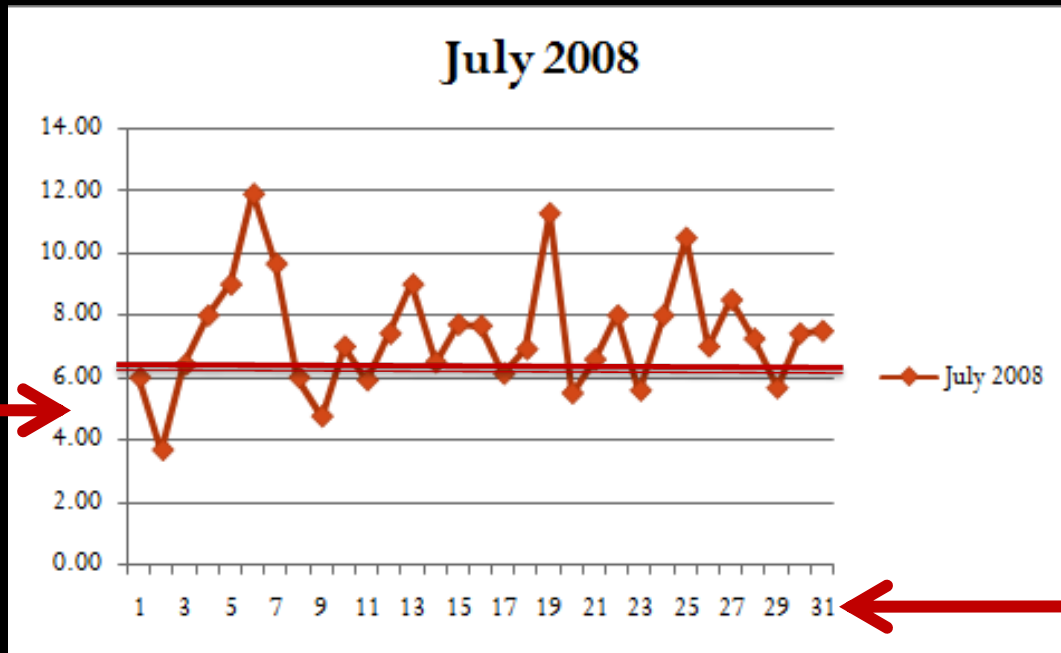
July 2008 - Leave / Absenteeism Flat line Experience

July is one of the months we find are prime time months and during those months more employees request time off . If off duty limits are not carefully calculated and used it is easy to over schedule time off and thus create overtime and or staffing shortages.

Again to maintain the flat line no more or less than 6.36 full time equivalent employees should be absent.

It is possible to ramp up the number off during prime time by using our "Windows" concept for leave planning.

Number of full time equivalent positions



July 2008

Dates

# FINDINGS

## PARAMEDICS

- The fire department states that they need a minimum of 6 paramedics' on-duty every day to maintain our ALS units
- They currently have 12 assigned to A-shift, 13 on B-Shift and 14 on C-Shift
- The total number of paramedics present in the positions of Lieutenant through Firefighter is 39
- Additionally, 5 personnel are in paramedic certification training with a projected completion date of December 2009
- From the data provided to us we were not able to determine the time in hours / days that were used in 2008 for paramedic training. Therefore, the deployable days' factor (staffing factor) and off duty limits targets are more than likely understated
- An internal report recommends that 75% of all firefighter, driver / engineer and lieutenant position be paramedic certified
- Chief Wiggles informed us that the goal that he is working toward is somewhere in the 50% area
- EVEN IF ALL PARAMEDICS WERE SCHEDULED ON LEAVE ON ANY SHIFT OR COMBINATION OF SHIFTS (AT THE PROPER OFF-DUTY LIMIT) THERE ARE MORE THAN ENOUGH PARAMEDICS AVAILABLE TO PROVIDE COVERAGE WITH SURPLUS PARAMEDICS AVAILABLE

# FINDINGS PARAMEDICS

- We assumed a worse-case 1.25 factor (one average salary to pay for the average annual deployable days and 25% of another average salary to pay for the average annual not deployable days).
- The spreadsheet below shows that the fire department has more than enough paramedics to staff all ALS units.
- The number of positions needed includes the positions to cover for paramedic leave / absenteeism requirements of the factor we calculated using fire department data. This does not include the five additional paramedics to be certified in December.

	B	C	D	E	F	G	H	I	J	K	L
3								<b>Paramedics 39</b>			
4	<b>Station</b>	<b>Lieutenant Duty Station Positions</b>	<b>Number of Duty Stations</b>	<b>Shifts Covered</b>	<b>Duty Station Position Category (F, P or S)</b>	<b>Pull or Shut Down %</b>	<b>Position Type (R or NR)</b>	<b>Salary (Relief) Factor</b>	<b>FTE Required</b>	<b>FTE Balance</b>	<b>Duty Station Position Pull &amp; Shutdown</b>
5	1	ALS Engine Company	1	3	F	0.00%	R	1.25	3.75	35.25	0.00
6	1	Ladder Company	1	3	F	0.00%	R	1.25	3.75	31.50	0.00
7	2	ALS Engine Company	1	3	F	0.00%	R	1.25	3.75	27.75	0.00
8	2	Squad	0	0	F	0.00%	R	1.25	0.00	27.75	0.00
9	3	ALS Engine Company	1	3	F	0.00%	R	1.25	3.75	24.00	0.00
10	4	ALS Engine Company	1	3	F	0.00%	R	1.25	3.75	20.25	0.00
11	4	5000 Gallon Tanker	0	0	F	0.00%	R	1.25	0.00	20.25	0.00
12	5	ALS Engine Company	1	3	F	0.00%	R	1.25	3.75	16.50	0.00
13								<b>FTE.s Required</b>	<b>22.50</b>	<b>Duty Station Position</b>	<b>0.00</b>
14								<b>FTE's Balance (+/-)</b>	<b>16.50</b>	<b>Overtime Needed</b>	<b>\$0</b>

# SUPPLY/DEMAND GAP ANALYSIS SUMMARY

Managed Off Duty Limits But Relief Only Within Rank (2008 data)

<b>Gap Analysis: Balanced Off Duty Days and Relief within Rank</b>					
	<b>DISTRICT CHIEF GAP ANALYSIS</b>	<b>LIEUTENANT GAP ANALYSIS</b>	<b>DRIVER / ENGINEER GAP</b>	<b>FIREFIGHTER GAP ANALYSIS</b>	<b>GAP ANALYSIS TOTALS</b>
<b>FISCAL SUPPLY</b>					
Direct Labor	\$477,588	\$1,498,434	\$1,416,192	\$1,673,610	\$5,065,824
Wages Overtime	\$40,000	\$215,000	\$340,000	\$73,957	\$668,957
Fringe	\$167,156	\$524,452	\$495,667	\$585,764	\$1,773,038
Budgeted Premium Pay	\$20,750	\$65,103	\$61,530	\$130,885	\$278,267
<b>Total Fiscal Supply</b>	<b>\$705,494</b>	<b>\$2,302,989</b>	<b>\$2,313,389</b>	<b>\$2,464,215</b>	<b>\$7,786,087</b>
<b>POTENTIAL SUPPLY ADJUSTMENTS</b>					
Potential Savings from Leave Without Pay	\$0	\$283	\$0	\$38,431	\$38,714
Potential Staff Reduction	\$0	\$0	\$0	\$755,355	\$755,355
Potential Overtime Gap	\$1,676	(\$344,879)	(\$509)	(\$56,689)	(\$400,401)
<b>Adjusted Fiscal Supply Gap</b>	<b>\$703,817</b>	<b>\$2,647,585</b>	<b>\$2,313,898</b>	<b>\$1,727,119</b>	<b>\$7,392,419</b>
<b>Potential Adjusted Fiscal Supply Gap (Over/U</b>	<b>\$1,676</b>	<b>(\$344,596)</b>	<b>(\$509)</b>	<b>\$737,096</b>	<b>\$393,668</b>
<b>FULL TIME EQUIVALENT POSITION DEMAND</b>					
Total FTE's - Budgeted Strategy	6.0	21.0	24.0	54.0	105.0
Total FTE's - Potential Operating Requirement	7.3	26.4	27.8	44.0	105.5
<b>POENTIAL ADJUSTED FULL TIME EQUIVALENT POSITION DEMAND</b>					
FTE's Operating Requirement	7.31	26.44	27.76	43.97	105.48
Pull/Shut Down Savings	1.13	0.00	0.00	0.00	1.13
FTE's - Gap	(0.18)	(5.44)	(3.76)	10.03	0.65
<b>POTENTIAL FTE's LABOR SUPPLY AND DEMAND GAP RESOLUTION STRATEGIES</b>					
FTE Under Supply - Additional Positions Including Eve	N/A	\$577,967	\$318,643	N/A	\$896,611
FTE Under Supply - Overtime Including Events	\$17,961	\$480,992	\$299,154	N/A	\$798,106

# RECOMMENDATIONS

- Manage to off-duty limits (three scheduled off every day).
  - Will require annual vacation picks (at least half of scheduled vacation) in conjunction with Kelly day picks
  - Trades are still available for staff to allow some flexibility
  
- Begin further investigation of other major elements of the staffing/relief factor to determine causes for loss of deployable days, particularly between ranks.
  
- Allow for more flexibility in working up in rank to fill scheduling holes and respond to daily absence conditions.
  
- Expand work periods to 28 days for more flexibility to adjust schedules to eliminate overtime.

# RECOMMENDATIONS

- Eliminate Kelly days from the standards for determining overtime. Above recommendations should minimize this issue.
- Implement the scheduling software now to help in managing deployment and begin building an historical database. Make minor software setup adjustments once union agreements have been renegotiated.

# SUPPLY/DEMAND GAP ANALYSIS

Balanced Off Duty Limits with Relief Up Between Ranks (2008 data)

<b>Gap Analysis: Balanced Off Duty Days plus Total Flexibility to Work Up Relief</b>					
	<b>DISTRICT CHIEF GAP ANALYSIS</b>	<b>LIEUTENANT GAP ANALYSIS</b>	<b>DRIVER / ENGINEER GAP</b>	<b>FIREFIGHTER GAP ANALYSIS</b>	<b>GAP ANALYSIS TOTALS</b>
<b>FISCAL SUPPLY</b>					
Direct Labor	\$477,588	\$1,498,434	\$1,416,192	\$1,673,610	\$5,065,824
Wages Overtime	\$21,000	\$65,000	\$60,000	\$522,957	\$668,957
Fringe	\$167,156	\$524,452	\$495,667	\$585,764	\$1,773,038
Budgeted Premium Pay	\$20,750	\$65,103	\$61,530	\$130,885	\$278,267
<b>Total Fiscal Supply</b>	<b>\$686,494</b>	<b>\$2,152,989</b>	<b>\$2,033,389</b>	<b>\$2,913,215</b>	<b>\$7,786,087</b>
<b>POTENTIAL SUPPLY ADJUSTMENTS</b>					
Potential Savings from Leave Without Pay	\$0	\$283	\$0	\$38,431	\$38,714
Potential Staff Reduction	\$0	\$0	\$0	\$1,391	\$1,391
Potential Overtime Gap	\$590	\$964	\$2,783	\$392,311	\$396,648
<b>Adjusted Fiscal Supply Gap</b>	<b>\$685,903</b>	<b>\$2,151,741</b>	<b>\$2,030,606</b>	<b>\$2,481,083</b>	<b>\$7,349,334</b>
<b>Potential Adjusted Fiscal Supply Gap (Over/U</b>	<b>\$590</b>	<b>\$1,248</b>	<b>\$2,783</b>	<b>\$432,133</b>	<b>\$436,753</b>
<b>FULL TIME EQUIVALENT POSITION DEMAND</b>					
Total FTE's - Budgeted Strategy	6.00	21.00	24.00	54.00	105.00
Total FTE's - Potential Operating Requirement	6.00	21.00	24.00	53.98	104.98
<b>POENTIAL ADJUSTED FULL TIME EQUIVALENT POSITION DEMAND</b>					
FTE's Operating Requirement	6.00	21.00	24.00	53.98	104.98
Pull/Shut Down Savings	1.13	0.00	0.00	0.00	1.13
FTE's - Gap	1.13	0.00	0.00	0.02	1.15
<b>POTENTIAL FTE's LABOR SUPPLY AND DEMAND GAP RESOLUTION STRATEGIES</b>					
FTE Under Supply - Additional Positions Including Eve	N/A	N/A	N/A	N/A	\$0
FTE Under Supply - Overtime Including Events	N/A	N/A	N/A	N/A	\$0

# NEXT STEPS

- Assist City in understanding Excel model to further study findings and consider impact of recommendations.
- Prepare and submit implementation plan for scheduling software.
- Conduct conference calls with City to continue discussion of gap analysis and consider strategies for union negotiations.
- Finalize implementation plan, confirm key roles and responsibilities, and schedule start of the project.