Fire and Rescue Service: Examination of Staffing and Overtime

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Jan 29, 2014

CountyStat

CountyStat Principles

- **Require Data-Driven Performance**
- **Promote Strategic Governance**
- **Increase Government Transparency**
- **Foster a Culture of Accountability**

Agenda

- **Welcome and Introductions**
- **Scheduling and Timekeeping Systems**
- **Overtime Use for FY12 and FY13**
- **Sick and Casual Leave Use for FY12 and FY13**
- **Administrative Leave Use for FY12 and FY13**
- **Relationships Between Leave Use and Overtime**
- **Costs of Using Overtime Vs. New Positions**
- **Wrap-up and Follow-up Items**

Meeting Goals

- Demonstrate the scheduling process and capabilities/limitations of TeleStaff

- Identify the relationships between leave use and overtime to target overtime reduction strategies

- Examine the costs associated with hiring new employees versus using overtime

Desired Outcomes

- Increase workforce availability and reduce overtime through management of sick and casual leave

- Utilize the reporting capabilities in TeleStaff, MCTime, and ERP on a regular basis to reduce overtime use and improve absence management

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TeleStaff

- **Scheduling software used by MCFRS and Police**
- **Software is programmed to staff daily rosters according to the collective bargaining agreement and minimum staffing needs**
  - Data about seniority and total overtime hours worked-to-date are loaded into system and will give scheduler a ranked list of candidates when filling an open shift
  - Qualifications for each firefighter are programmed to ensure the right skillset is matched to each open shift
- **Firefighters can sign up for overtime through the system**
  - This automated system allows the scheduler to utilize overtime positions without having to contact each firefighter individually
- **Firefighters can request and get approval of leave through TeleStaff**
  - When leave is approved, it will appear in TeleStaff and show the scheduler that a position needs to be filled

Preparing Daily Schedule

- **Schedulers start building the daily roster 3 days prior to each shift**

- **Employees on their normal shift and not using leave will be preprogrammed into their normal work station**

- **Employees that are not already assigned, but are working a regular shift, are used to plug in any gaps in the roster**

- **Any empty roster slots not filled by floating staff are backfilled with overtime beginning at 10:30AM of the scheduling day**
  - The process is delayed until late morning to give employees time to request leave and overtime

When building the daily roster, the goal for the scheduler is to maximize the use of employees on straight pay in order to limit hiring of overtime

Data in TeleStaff

What is captured:

- Work assignment for career firefighters (shift, assigned apparatus, hours worked)
- Employee data (ID number, rank, normal shift and station assignments, qualifications, etc.)
- Leave used
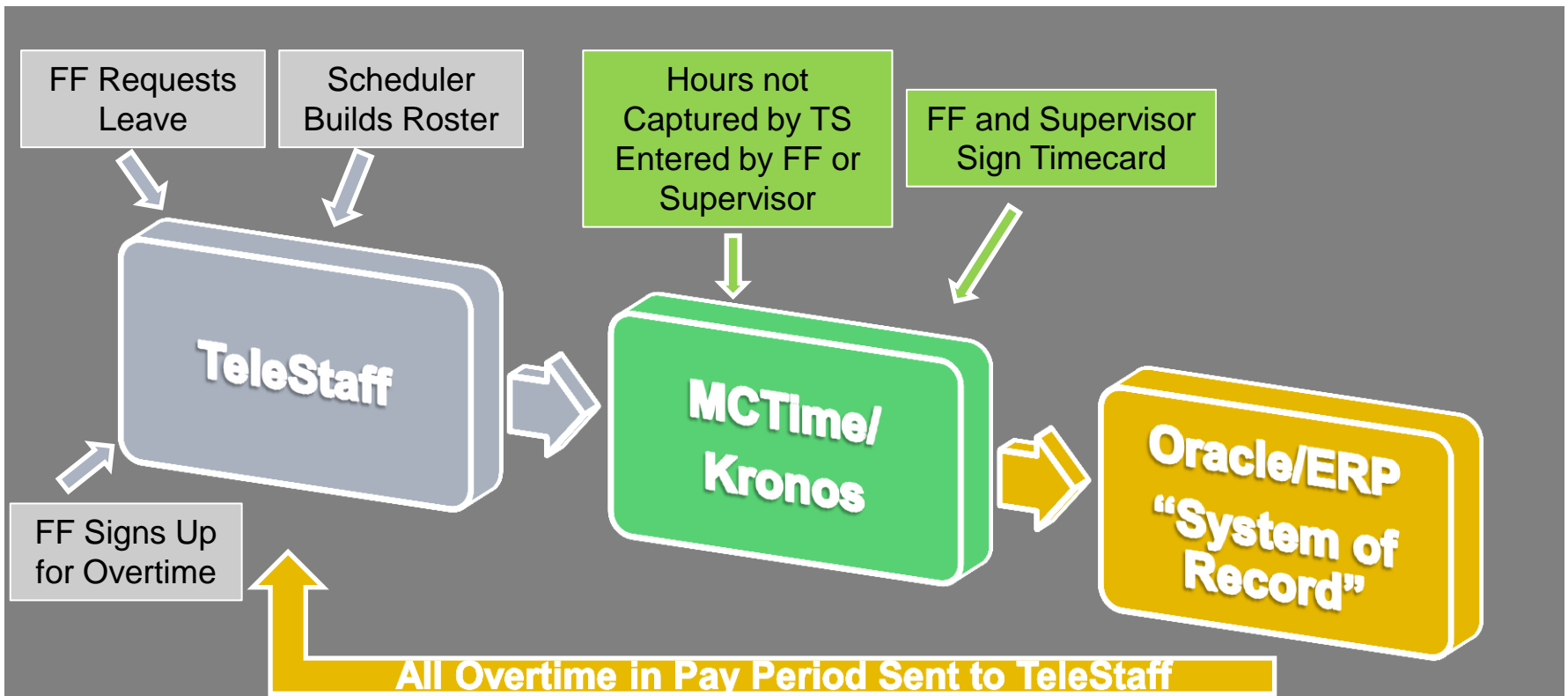- Overtime created by an open slot

What is not captured:

- Hours worked by volunteer firefighters
- All historical data (some data, such as rank, are overwritten when there is a promotion)
- All overtime hours worked by Operations staff
  - System captured 80% of all OT for 48 hours/week employees in FY12 and FY13
  - OT events not captured are usually due to training or teaching at the academy

When overtime is mentioned in this report, this is in reference to the approximately 80% of overtime that was captured in TeleStaff

Relationship Between Systems

FF Requests Leave → **TeleStaff**

Scheduler Builds Roster → **TeleStaff**

FF Signs Up for Overtime → **TeleStaff**

Hours not Captured by TS Entered by FF or Supervisor → **MCTime/Kronos**

FF and Supervisor Sign Timecard → **MCTime/Kronos**

TeleStaff → MCTime/Kronos → Oracle/ERP "System of Record"

All Overtime in Pay Period Sent to TeleStaff

While TeleStaff automates the majority of the data collection for hours worked and leave used in Operations, work done outside of an employee's normal shift must be entered through MCTime. Any corrections that need to be made post-hoc are performed in MCTime or ERP as these systems are used for payroll.

Current Reports from TeleStaff

- **MCFRS sends out a daily report showing leave and overtime use throughout Operations**
  - The report shows use for the prior day
  - The leave and overtime is broken down by Battalion, ECC, and Duty Chief Assignments
  - All leave and overtime hours are shown as a percent of minimum staffing hours

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Overtime and Leave Patterns

- **Due to minimum staffing requirements, when a firefighter takes leave, overtime can be used to fill the open position**
    - The actual ratio of overtime to leave hours is less than 1:1 for most leave types as MCFRS has personnel available to fill some expected leave
    - Schedulers can move personnel between stations and battalions to minimize the need to hire overtime

- **The charts that follow on slides 12 to 27 are for MCFRS Operational employees scheduled to work <u>48 hours per week</u>**

- **The averages displayed in the tables are the average hours of leave or overtime recorded per day and sorted by either day of week or month of year**

The first part of this report section examines overtime, sick, and casual leave separately. The second half examines the relationship between leave and overtime across Operations.

Overtime Worked for FY12 and FY13 by Station*
(as a percent of total overtime worked across all stations)
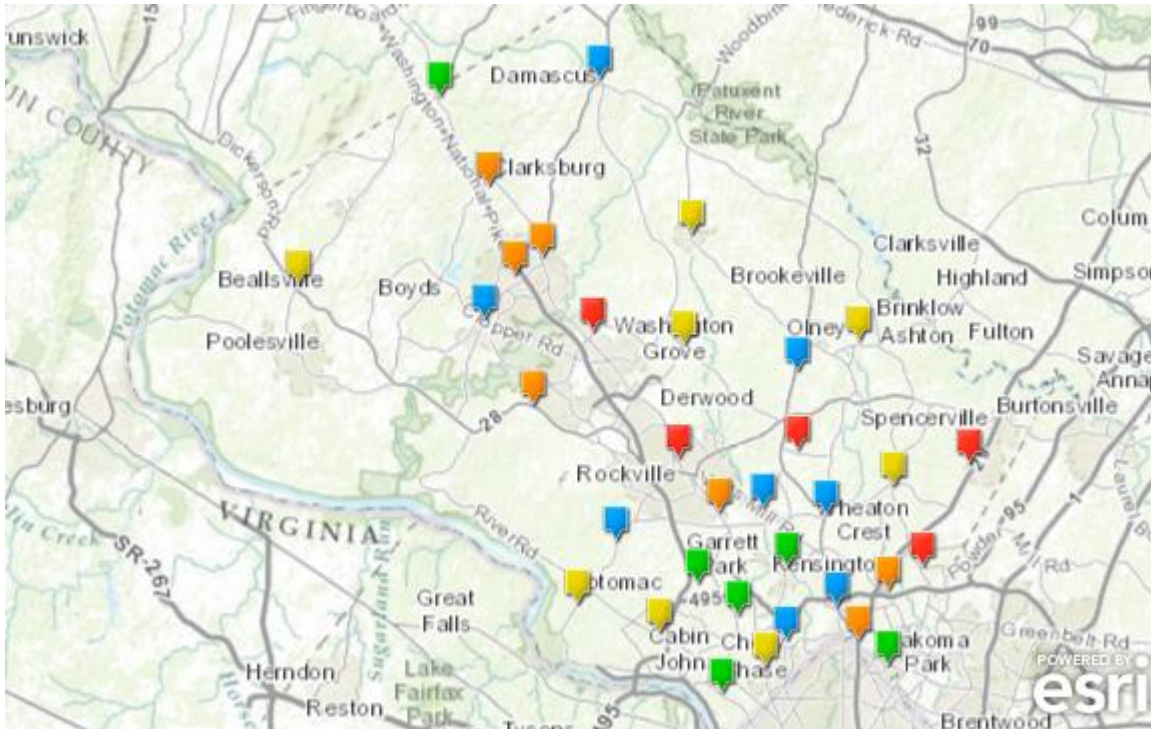
Legend:
Green – 0.91% - 1.60%
Blue – 1.60% - 2.54%
Yellow – 2.54% - 3.20%
Orange – 3.20% - 4.18%
Red – 4.18% - 6.21%

Station overtime was highest along the urban areas of the I-270 corridor, Kensington, and along the Prince George's County border

*Overtime by station was calculated by adding up overtime hours worked by MCFRS 48 hrs./week personnel assigned to specific station apparatuses

Overtime Worked for FY12 and FY13 by Pay Period
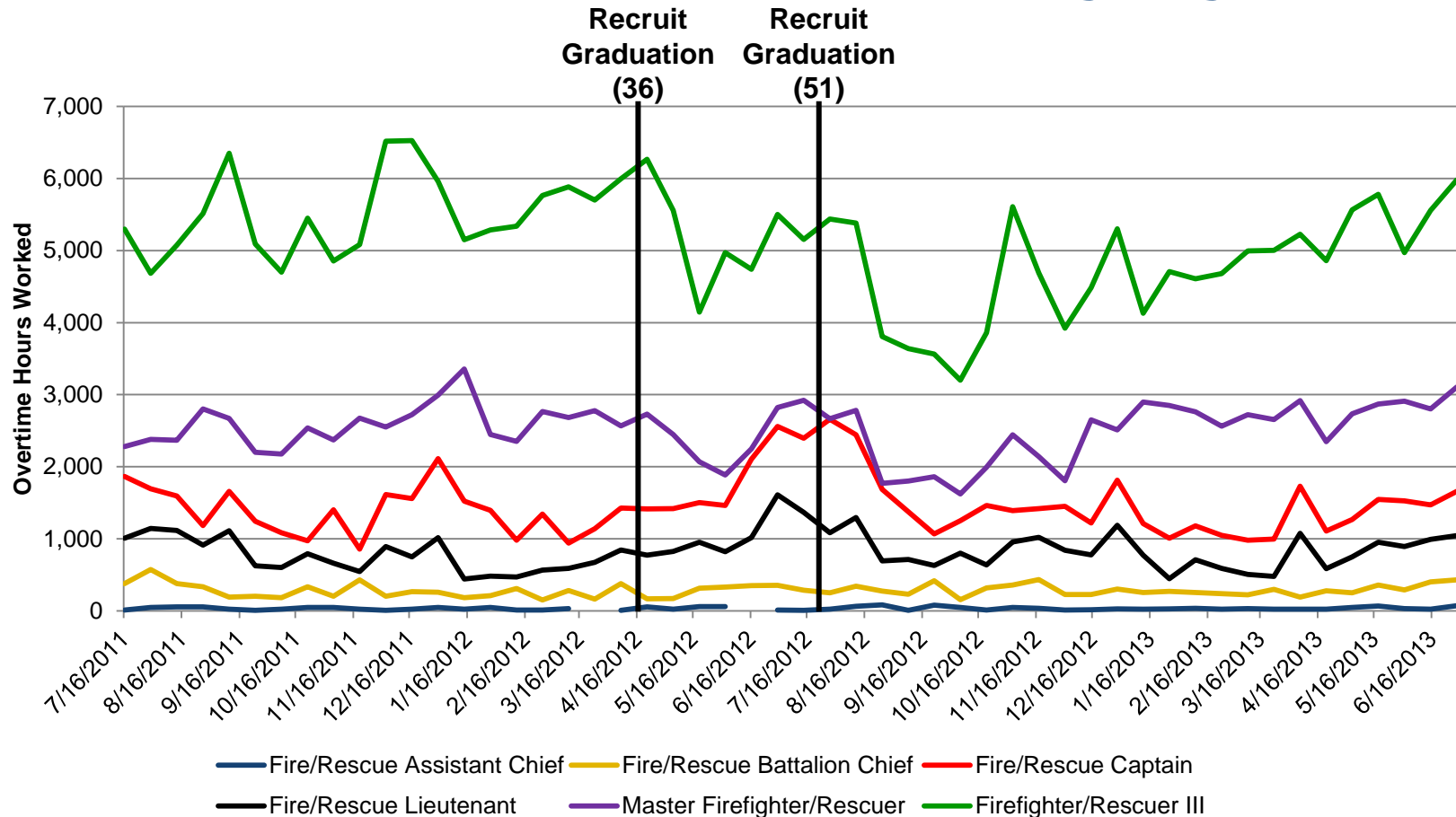
Recruit graduation corresponded with a drop in overtime in the first few pay periods after graduation, but the drop was not sustained

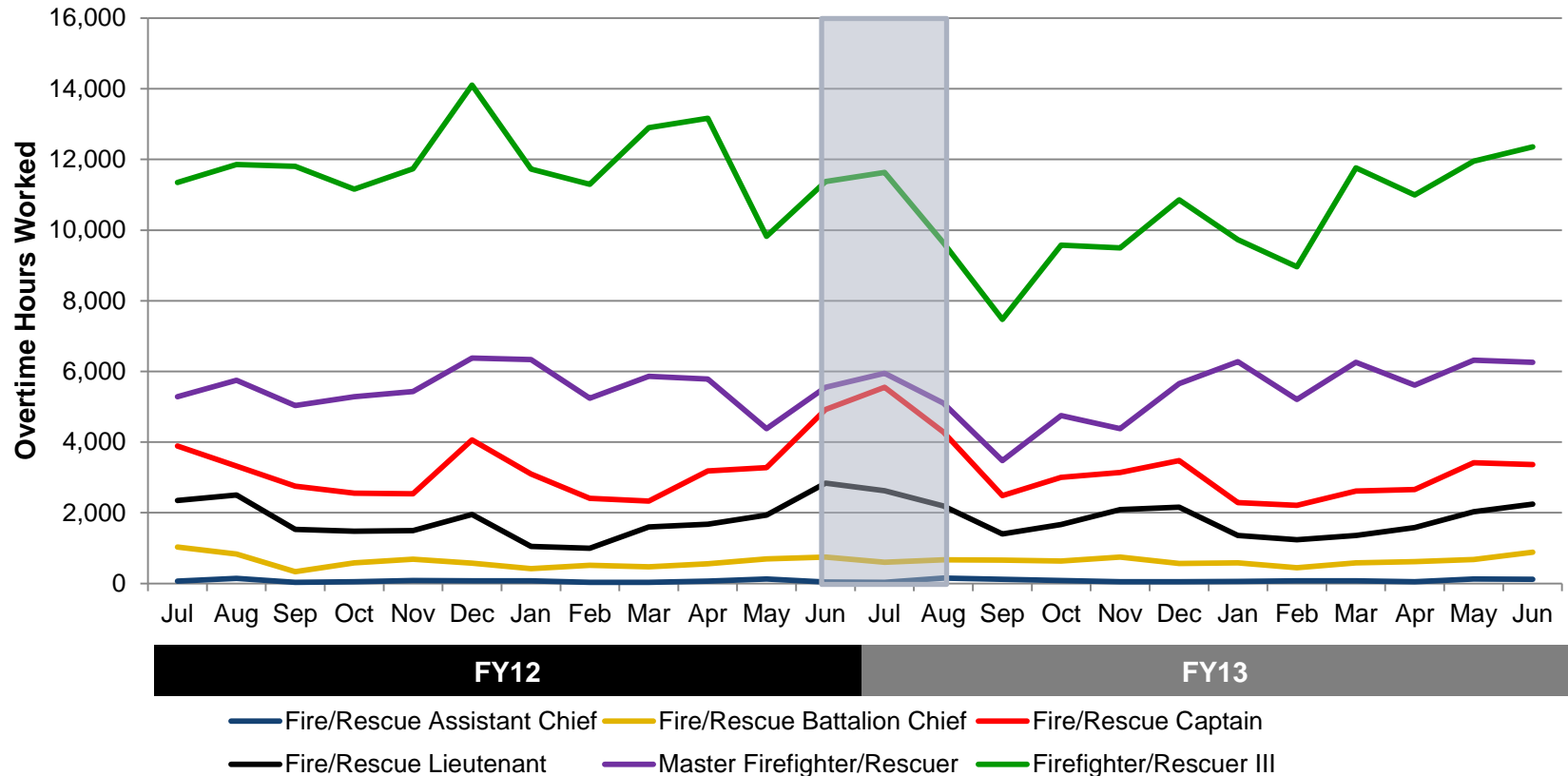Source: TeleStaff (hours); ERP (ranks) *Does not include OT-Upstaff

Overtime Worked in FY12 and FY13 by Month

The peaks in June and July of CY2012 correspond with the Derecho

Overtime and Leave Use by Rank – Captain 48 hrs./week

FY12	
OT/Leave	Total Hours
Overtime Worked	38,337
Admin*	2,258
Annual**	26,969
AWOL/LWOP	0
Comp	5,073
Detailed Off Floor	4,706
Disability***	8,327
FMLA	374
Light-Duty Work#	1,221
Military+	624
Parental	2,926
Personal	3,696
Sick	14,545

FY13	
OT/Leave	Total Hours
Overtime Worked	38,536
Admin*	2,359
Annual**	26,636
AWOL/LWOP	1
Comp	5,646
Detailed Off Floor	6,786
Disability***	10,691
FMLA	539
Light-Duty Work#	69
Military+	0
Parental	734
Personal	4,560
Sick	17,182

Overtime was consistent between FY12 and FY13. Parental leave hours dropped by 2,192 hours while sick leave rose by 2,637 hours.

NOTES:
*Does not include Admin. Disability & Admin. Military
**Includes Leave Picks
***Includes Admin. Disability. If employee was switched off of 48 hrs./week to an alternative schedule, his/her hours will not appear in this chart.
Only includes employees working light-duty on 48 hrs./week shift
+ Includes Admin. Military

Overtime and Leave Use by Rank – Lieutenant 48 hrs./week

FY12	
OT/Leave	Total Hours
Overtime Worked	21,392
Admin*	616
Annual**	18,365
AWOL/LWOP	2
Comp	3,065
Detailed Off Floor	2,222
Disability***	2,906
FMLA	217
Light-Duty Work#	654
Military+	0
Parental	1,461
Personal	2,328
Sick	8,435

FY13	
OT/Leave	Total Hours
Overtime Worked	21,953
Admin*	564
Annual**	17,553
AWOL/LWOP	1
Comp	4,984
Detailed Off Floor	4,463
Disability***	6,218
FMLA	321
Light-Duty Work#	189
Military+	0
Parental	2,602
Personal	3,672
Sick	11,138

From FY12 to FY13, sick leave hours rose 3% and detailed off floor rose by 101%

NOTES:
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**Includes Leave Picks
***Includes Admin. Disability. If employee was switched off of 48 hrs./week to an alternative schedule, his/her hours will not appear in this chart.
Only includes employees working light-duty on 48 hrs./week shift
+ Includes Admin. Military

Source: TeleStaff

CountyStat

Overtime and Leave Use by Rank – Master FF 48 hrs./week

FY12	
OT/Leave	Total Hours
Overtime Worked	66,316
Admin*	4,230
Annual**	40,155
AWOL/LWOP	4
Comp	9,694
Detailed Off Floor	4,350
Disability***	15,308
FMLA	1,012
Light-Duty Work#	1,934
Military+	278
Parental	5,568
Personal	6,384
Sick	26,710

FY13	
OT/Leave	Total Hours
Overtime Worked	65,317
Admin*	6,318
Annual**	37,564
AWOL/LWOP	1
Comp	10,266
Detailed Off Floor	6,654
Disability***	14,160
FMLA	1,219
Light-Duty Work#	224
Military+	48
Parental	2,653
Personal	7,512
Sick	29,631

From FY12 to FY13, sick leave hours rose by 11% and administrative leave rose by 49%

NOTES:
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**Includes Leave Picks
***Includes Admin. Disability. If employee was switched off of 48 hrs./week to an alternative schedule, his/her hours will not appear in this chart.
Only includes employees working light-duty on 48 hrs./week shift
+ Includes Admin. Military

Source: TeleStaff

Overtime and Leave Use by Rank – FF I-III 48 hrs./week

FY12	
OT/Leave	**Total Hours**
Overtime Worked	142,292
Admin*	5,904
Annual**	97,452
AWOL/LWOP	580
Comp	23,864
Detailed Off Floor	21,226
Disability***	40,127
FMLA	4,864
Light-Duty Work#	4,945
Military+	2,304
Parental	17,180
Personal	16,817
Sick	70,299

FY13	
OT/Leave	**Total Hours**
Overtime Worked	124,577
Admin*	8,053
Annual**	86,427
AWOL/LWOP	2,333
Comp	25,426
Detailed Off Floor	27,430
Disability***	40,344
FMLA	2,245
Light-Duty Work#	1,297
Military+	720
Parental	15,546
Personal	21,336
Sick	70,147

Overtime worked by FFs I-III dropped 12% year-to-year. AWOL/LWOP rose by 302% while FMLA use decreased by 54% from FY12 to FY13.

NOTES:
*Does not include Admin. Disability & Admin. Military
**Includes Leave Picks
***Includes Admin. Disability. If employee was switched off of 48 hrs./week to an alternative schedule, his/her hours will not appear in this chart.
Only includes employees working light-duty on 48 hrs./week shift
+ Includes Admin. Military

Source: TeleStaff

Daily Average Overtime Worked for FY12 and FY13 by Month

Month	F/R Captain		F/R Lieutenant		MFF		FF I-III	
	Avg. Hours	% of OT	Avg. Hours	% of OT	Avg. Hours	% of OT	Avg. Hours	% of OT
Jan	87	7.0%	39	5.5%	203	9.6%	346	8.0%
Feb	81	6.0%	39	5.2%	183	7.9%	355	7.6%
Mar	80	6.4%	48	6.8%	196	9.2%	398	9.3%
Apr	97	7.6%	54	7.5%	190	8.7%	403	9.1%
May	108	8.7%	64	9.1%	173	8.1%	351	8.2%
Jun	138	10.8%	85	11.7%	197	9.0%	395	8.9%
Jul	152	12.3%	80	11.5%	181	8.5%	371	8.6%
Aug	123	9.9%	76	10.8%	175	8.3%	347	8.1%
Sep	87	6.8%	49	6.8%	142	6.5%	321	7.2%
Oct	90	7.2%	51	7.3%	162	7.6%	334	7.8%
Nov	95	7.4%	60	8.3%	164	7.5%	354	8.0%
Dec	122	9.8%	66	9.5%	194	9.2%	403	9.4%
Average	105	8.4%	59	8.4%	180	8.3%	365	8.3%

Across all ranks, overtime was low in September. Overtime peaked in the summer for Captains and Lieutenants, while overtime was highest in the winter months for the lower ranks.

= Above Average for All Months at a Statistically Significant Level

= Below Average for All Months at a Statistically Significant Level

Source: TeleStaff

Daily Average Sick & FMLA Leave Use by Month

Month	F/R Captain		F/R Lieutenant		MFF		FF I-III	
	Avg. Hours	% of Total	Avg. Hours	% of Total	Avg. Hours	% of Total	Avg. Hours	% of Total
Jan	41	7.8%	25	7.7%	64	6.7%	193	8.1%
Feb	41	7.1%	26	7.3%	73	7.1%	180	7.0%
Mar	43	8.1%	31	9.6%	83	8.8%	188	7.8%
Apr	50	9.3%	24	7.2%	87	8.9%	193	7.9%
May	50	9.5%	33	10.3%	85	9.0%	194	8.2%
Jun	56	10.2%	28	8.3%	88	9.0%	232	9.4%
Jul	45	8.5%	34	10.5%	82	8.7%	218	9.2%
Aug	48	9.2%	29	9.0%	84	8.9%	211	8.8%
Sep	44	8.2%	27	8.2%	73	7.4%	220	9.0%
Oct	41	7.8%	22	6.9%	72	7.6%	183	7.7%
Nov	34	6.3%	22	6.4%	81	8.2%	194	7.9%
Dec	42	8.0%	28	8.6%	91	9.7%	215	9.0%
Average	45	8.3%	28	8.3%	80	8.3%	202	8.3%

In general, sick and FMLA leave was lowest in the fall and winter and was highest during summer months

■ = Above Average for All Months at a Statistically Significant Level
■ = Below Average for All Months at a Statistically Significant Level

Source: TeleStaff

CountyStat

Daily Average Casual Leave Use by Month

Month	F/R Captain		F/R Lieutenant		MFF		FF I-III	
	Avg. Hours	% of Total	Avg. Hours	% of Total	Avg. Hours	% of Total	Avg. Hours	% of Total
Jan	70	6.0%	58	7.1%	136	7.6%	375	8.5%
Feb	64	5.0%	61	6.9%	127	6.5%	386	8.0%
Mar	72	6.2%	59	7.3%	143	7.9%	381	8.6%
Apr	85	7.0%	60	7.2%	148	8.0%	362	7.9%
May	96	8.2%	70	8.7%	146	8.1%	390	8.8%
Jun	130	10.8%	77	9.3%	155	8.4%	378	8.3%
Jul	156	13.3%	80	9.9%	193	10.7%	336	7.6%
Aug	126	10.8%	77	9.6%	177	9.8%	362	8.2%
Sep	84	6.9%	65	7.8%	145	7.8%	412	9.0%
Oct	87	7.5%	67	8.3%	145	8.0%	377	8.5%
Nov	91	7.5%	74	9.0%	158	8.5%	372	8.2%
Dec	126	10.8%	72	8.9%	157	8.7%	372	8.4%
Average	99	8.4%	68	8.3%	153	8.3%	375	8.3%

For MFFs and above, annual, LWOP, comp., and personal leave peaked during the summer months and were lowest in the first few months of the calendar year. Since FFIIIs tend to get last pick, they do not get leave during desirable months for vacations.

= Above Average for All Months at a Statistically Significant Level
= Below Average for All Months at a Statistically Significant Level

Source: TeleStaff

1/29/2014

CountyStat

Relationship between OT, Sick and Casual Leave by Month

Month	F/R Captain			F/R Lieutenant			MFF			FF I-III		
	OT	Sick	Cas.	OT	Sick	Cas.	OT	Sick	Cas.	OT	Sick	Cas.
Jan	87	41	70	39	25	58	203	64	136	346	193	375
Feb	81	41	64	39	26	61	183	73	127	355	180	386
Mar	80	43	72	48	31	59	196	83	143	398	188	381
Apr	97	50	85	54	24	60	190	87	148	403	193	362
May	108	50	96	64	33	70	173	85	146	351	194	390
Jun	138	56	130	85	28	77	197	88	155	395	232	378
Jul	152	45	156	80	34	80	181	82	193	371	218	336
Aug	123	48	126	76	29	77	175	84	177	347	211	362
Sep	87	44	84	49	27	65	142	73	145	321	220	412
Oct	90	41	87	51	22	67	162	72	145	334	183	377
Nov	95	34	91	60	22	74	164	81	158	354	194	372
Dec	122	42	126	66	28	72	194	91	157	403	215	372

Both Captains and Lieutenants have high OT, sick, and casual leave during summer months

= Above Average for All Months at a Statistically Significant Level
= Below Average for All Months at a Statistically Significant Level

Source: TeleStaff

CountyStat

Daily Average Overtime Worked for FY12 and FY13 by Day of Week

Day of Week	F/R Captain		F/R Lieutenant		MFF		FF I-III	
	Avg. Hours	% of OT	Avg. Hours	% of OT	Avg. Hours	% of OT	Avg. Hours	% of OT
Sundays	103	14.0%	54	13.1%	163	13.0%	408	16.1%
Mondays	114	15.5%	60	14.4%	172	13.6%	352	13.7%
Tuesdays	68	9.2%	35	8.3%	130	10.2%	222	8.7%
Wednesdays	92	12.5%	60	14.4%	149	11.8%	289	11.3%
Thursdays	80	10.8%	50	12.1%	141	11.2%	260	10.2%
Fridays	122	16.7%	73	17.7%	259	20.7%	475	18.7%
Saturdays	156	21.4%	82	20.0%	245	19.6%	545	21.5%
Daily Average	105	14.3%	59	14.3%	180	14.3%	365	14.3%

Across all ranks, overtime was lowest on Tuesdays and Thursdays and highest on Fridays and Saturdays

🟥 = Above Average for All Days at a Statistically Significant Level
🟩 = Below Average for All Days at a Statistically Significant Level

Source: TeleStaff

MCFRS Staffing and Disability Review

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CountyStat

Daily Average Sick & FMLA Leave Use, by Day of Week

Day of Week	F/R Captain		F/R Lieutenant		MFF		FF I-III	
	Avg. Hours	% of Total	Avg. Hours	% of Total	Avg. Hours	% of Total	Avg. Hours	% of Total
Sundays	43	13.8%	33	17.4%	80	14.2%	203	14.4%
Mondays	43	13.8%	23	11.8%	66	11.7%	200	14.1%
Tuesdays	39	12.6%	24	12.3%	69	12.3%	183	12.9%
Wednesdays	39	12.4%	25	12.8%	67	11.9%	183	12.9%
Thursdays	40	12.6%	25	12.7%	77	13.6%	181	12.7%
Fridays	52	16.6%	28	14.5%	96	17.2%	208	14.8%
Saturdays	57	18.2%	35	18.5%	106	19.1%	254	18.2%
Daily Average	45	14.3%	28	14.3%	80	14.3%	202	14.3%

Sick and FMLA Leave use peaked on the weekend and was lowest from Tuesday through Thursday

■ = Above Average for All Days at a Statistically Significant Level
■ = Below Average for All Days at a Statistically Significant Level

Daily Average Casual Leave Use, by Day of Week

Day of Week	F/R Captain		F/R Lieutenant		MFF		FF I-III	
	Avg. Hours	% of Total	Avg. Hours	% of Total	Avg. Hours	% of Total	Avg. Hours	% of Total
Sundays	110	15.9%	78	16.4%	174	16.4%	378	14.5%
Mondays	89	12.7%	66	13.8%	135	12.5%	381	14.4%
Tuesdays	81	11.6%	60	12.5%	121	11.3%	381	14.5%
Wednesdays	86	12.3%	60	12.4%	140	13.0%	369	14.0%
Thursdays	92	13.2%	63	13.2%	149	13.9%	377	14.3%
Fridays	102	14.7%	68	14.4%	167	15.7%	379	14.5%
Saturdays	136	19.6%	83	17.4%	182	17.1%	361	13.8%
Daily Average	99	14.3%	68	14.3%	153	14.3%	375	14.3%

Above FFIII, casual leave was highest on the weekends and lowest during the middle of the week. For FFIIIs, leave was spread evenly throughout the week with Saturday being the lowest day. Since FFIIIs tend to be lowest in seniority, they get last priority when casual leave is approved.

Source: TeleStaff

■ = Above Average for All Days at a Statistically Significant Level
■ = Below Average for All Days at a Statistically Significant Level

CountyStat

Relationship between Overtime, Sick and Casual Leave by Day of Week (in hours)

Day of Week	F/R Captain			F/R Lieutenant			MFF			FF I-III		
	OT	Sick	Cas.	OT	Sick	Cas.	OT	Sick	Cas.	OT	Sick	Cas.
Sundays	103	43	110	54	33	78	163	80	174	408	203	378
Mondays	114	43	89	60	23	66	172	66	135	352	200	381
Tuesdays	68	39	81	35	24	60	130	69	121	222	183	381
Wednesdays	92	39	86	60	25	60	149	67	140	289	183	369
Thursdays	80	40	92	50	25	63	141	77	149	260	181	377
Fridays	122	52	102	73	28	68	259	96	167	475	208	379
Saturdays	156	57	136	82	35	83	245	106	182	545	254	361

Across all ranks, overtime and sick leave were above average on Saturdays. For Captains and Master FFs, overtime and leave were low on Tuesdays and Wednesdays.

Source: TeleStaff

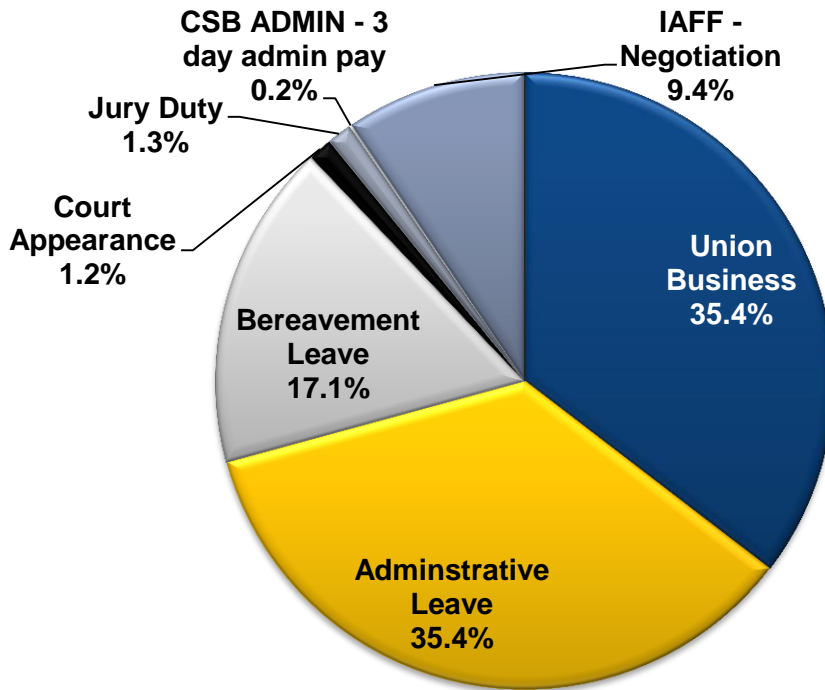■ = Above Average for All Days at a Statistically Significant Level
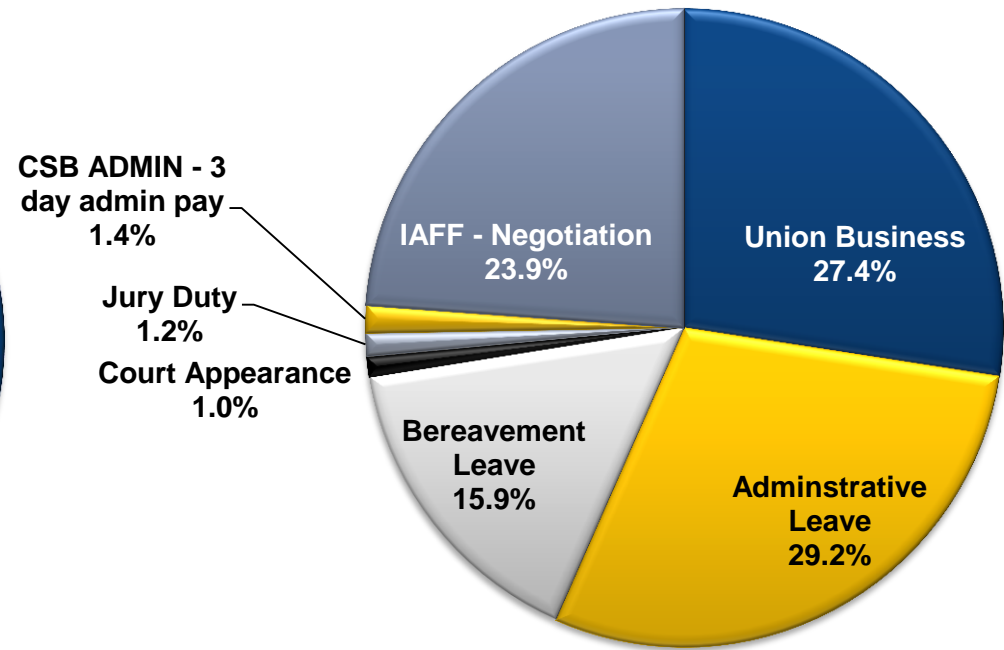■ = Below Average for All Days at a Statistically Significant Level

CountyStat

Administrative Leave* Analysis

FY12: 13,078.25 Hours

- CSB ADMIN - 3 day admin pay 0.2%
- Jury Duty 1.3%
- Court Appearance 1.2%
- IAFF - Negotiation 9.4%
- Union Business 35.4%
- Administrative Leave 35.4%
- Bereavement Leave 17.1%

FY13: 17,732.67 Hours

- CSB ADMIN - 3 day admin pay 1.4%
- Jury Duty 1.2%
- Court Appearance 1.0%
- IAFF - Negotiation 23.9%
- Union Business 27.4%
- Administrative Leave 29.2%
- Bereavement Leave 15.9%

When excluding disability and military administrative leave categories, a plurality in FY12 and a majority in FY13 of administrative leave used by 48 hours/week Operations employees was devoted to IAFF business. During this period, a new collective bargaining agreement was being negotiated.

*Administrative leave categories excluded: disability and military

Source: TeleStaff

CountyStat

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Correlation between Leave Use and Overtime

- **The previous slides showed associations between leave and overtime, but did not show *how much* of that leave resulted in overtime**

- **MCFRS does not capture the exact reason why overtime was used for a particular assignment**
  - A major reason for not capturing this data is that the roster slot filled with overtime may be multiple steps removed from the person taking leave
  - Schedulers will move multiple personnel around the County in order to minimize the use and cost of overtime

- **CountyStat estimated the relationships between leave use, events, and overtime using OLS (ordinary least squares) regression**

Correlation Study Methodology (1/2)

- **Overtime and leave hours captured in TeleStaff were sorted and summarized by scheduling date**

- **The daily hours were further sorted by weekly work hours and by rank**
  - Work hours and rank were imported from ERP and matched to TeleStaff data as ERP contains accurate historical information regarding employee status

- **Information regarding events were added to the daily leave and overtime information**

- **The daily data were entered into a statistical software package for analysis**

Correlation Study Methodology (2/2)

- **The regression formula used:**

$$(overtime)_i$$
$$= (admin)_i + (annual)_i + (LWOP)_i + (Comp)_i$$
$$+ (Detailed\ or\ Training)_i + (Disability)_i + (FMLA)_i + (Kelly)_i$$
$$+ (Military)_i + (Parental)_i + (Personal)_i + (Sick)_i + (Regular)_i + (Event\ OT)_i$$

  - Where *i* was the daily total
  - Leave types were entered by total hours per day
  - Event-driven overtime was a dummy variable (0 = no event, 1 = event) to show how many hours of overtime correlated with events. Days with event-driven overtime were determined by FRS during the 12/18/13 CountyStat session (slide 52).

- **These variables were included as they each theoretically are related to overtime**

- **Use of a regression model takes interaction between leave types into account and estimates the strength and magnitude of the relationship**

How to Read the Correlation Tables

The following two slides show the results of the analysis

- **If there is a star next to the variable, the relationship between the variable and overtime is statistically significant (i.e. the relationship between that leave/event and overtime is strong)**

- **For each category, there is a 95% confidence interval showing the range of overtime hours that correlate with one hour of leave or one day of event-driven overtime**
    - The confidence interval is the range of values where there is 95% confidence that the true value is in this range
    - By using the range of values, one can see how a given leave type affects overtime on the average day

- **For example: On an average day in FY13, one hour of sick leave directly correlated with between 0.59 to 0.97 hours of overtime across the ranks of Captain, Lieutenant, MFF, and FFIII**

Capt, Lieut, MFF, FFIII Working 48 Hrs./Week -- FY12

Leave Type / Event	OT Hours Created (95% Conf. Int.)	Coeff. [Stnd. Error]	Leave Type / Event/	OT Hours Created (95% Conf. Int.)	Coeff. [Stnd. Error]
1 Hour Administrative	-0.261 - 0.440	0.089 [0.178]	1 Hour Light-Duty Work	-0.799 - 0.256	-0.271 [0.268]
1 Hour Annual***	0.157 - 0.460	0.309 [0.077]	1 Hour Military/Admin. Mil.	-1.812 - 0.244	-0.784 [0.523]
1 Hour AWOL/LWOP	-4.826 - 2.239	-1.294 [1.796]	1 Hour Parental***	0.589 - 1.201	0.895 [0.156]
1 Hour Compensatory***	0.408 - 0.909	0.659 [0.127]	1 Hour Personal***	0.594 - 1.069	0.832 [0.121]
1 Hour Detailed Off Floor/Training***	0.151 - 0.573	0.362 [0.107]	1 Hour Sick***	0.639 - 0.934	0.787 [0.075]
1 Hour Disability/Admin. Dis.***	0.246 - 0.735	0.491 [0.124]	1 Hour Regular**	-0.173 - -0.036	-0.105 [0.035]
1 Hour FMLA***	1.632 - 2.896	2.264 [0.321]	1 Day Event Driven OT*	31.764 - 232.538	132.151 [51.042]
1 Hour Kelly Day***	0.600 - 0.816	0.708 [0.055]			

When examining overtime and leave across the four ranks, in FY12 the leave types correlating strongest to overtime were FMLA, parental, personal, and sick

= Positive Correlation with Overtime at a Statistically Significant Level

= Negative Correlation with Overtime at a Statistically Significant Level

Stars show the strength of correlation: * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Capt, Lieut, MFF, FFIII Working 48 Hrs./Week -- FY13

Leave Type / Event	OT Hours Created (95% Conf. Int.)	Coeff. [Stnd. Error]	Leave Type / Event	OT Hours Created (95% Conf. Int.)	Coeff. [Stnd. Error]
1 Hour Administrative***	0.432 - 1.143	0.787 [0.181]	1 Hour Light-Duty Work	-0.691 - 2.233	0.772 [0.743]
1 Hour Annual***	0.561 - 1.056	0.808 [0.126]	1 Hour Military/Admin. Mil.*	0.322 - 4.596	2.459 [1.087]
1 Hour AWOL/LWOP	-1.261 - 1.538	0.139 [0.712]	1 Hour Parental***	0.803 - 1.923	1.363 [0.285]
1 Hour Compensatory***	0.548 - 1.296	0.922 [0.190]	1 Hour Personal***	1.185 - 1.772	1.478 [0.149]
1 Hour Detailed Off Floor/Training***	0.273 - 0.638	0.456 [0.093]	1 Hour Sick***	0.590 - 0.967	0.779 [0.096]
1 Hour Disability/Admin. Dis.	-0.410 - 0.071	-0.17 [0.122]	1 Hour Regular	-0.012 - 0.078	0.033 [0.023]
1 Hour FMLA	-0.622 - 1.546	0.462 [0.551]	1 Day Event Driven OT***	114.957 - 413.638	264.297 [75.931]
1 Hour Kelly Day***	0.604 - 0.893	0.749 [0.073]			

In FY13, administrative leave had a strong correlation with overtime as compared to FY12. On average, one hour of admin. leave correlated with between 0.4 and 1.1 hours of overtime in FY13.

■ = Positive Correlation with Overtime at a Statistically Significant Level

■ = Negative Correlation with Overtime at a Statistically Significant Level

Stars show the strength of correlation: * $p<0.05$, ** $p<0.01$, *** $p<0.001$

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Agenda

- **Welcome and Introductions**
- **Scheduling and Timekeeping Systems**
- **Overtime Use for FY12 and FY13**
- **Sick and Casual Leave Use for FY12 and FY13**
- **Administrative Leave Use for FY12 and FY13**
- **Relationships Between Leave Use and Overtime**
- **Costs of Using Overtime Vs. New Positions**
- **Wrap-up and Follow-up Items**

Structural Overtime

- **Each day, MCFRS uses some amount of overtime to cover personnel on leave or detailed off the floor**
  - In FY12 and FY13, the least amount of overtime used by 48 hours/week employees was 78 on 9/4/12 and 4/16/13
  - The most used was 1,615 on 10/29/12 during Superstorm Sandy
  - The average amount of overtime worked each day was 732 hours

- **Overtime can be reduced by increasing the current workforce's average availability or by hiring new personnel**

- **CountyStat examined how many people would need to be hired to absorb the average amount of overtime hours worked for each year and the potential costs of hiring new personnel**

New Hires Required to Absorb Average Daily OT – FY12

Rank	Daily OT Average*	Average OT Hours per 24-Hr. Shift	Shift Relief Factor**	# FFs Needed to Absorb Average Daily OT
Asst. Chief	2.20	0.09	5.02	0.5
Battalion Chief	20.27	0.84	4.85	4.1
Captain	104.75	4.36	5.15	22.5
Lieutenant	58.45	2.44	4.99	12.2
Master FF	181.19	7.55	4.98	37.6
FF I - III	388.77	16.20	4.62	74.8

Based on the daily average overtime worked by each rank in FY12, MCFRS would need to hire 151.7 new positions to absorb the overtime hours

*Average for overtime hours worked by rank. Numbers are *not* adjusted for hours worked out of class

**Shift relief factor based on CountyStat's MCFRS staffing analysis report dated 1/23/2012

New Hires Required to Absorb Average Daily OT – FY13

Rank	Daily OT Average*	Average OT Hours per 24-Hr. Shift	Shift Relief Factor**	# FFs Needed to Absorb Average Daily OT
Asst. Chief	2.67	0.11	5.02	0.6
Battalion Chief	20.98	0.87	4.85	4.2
Captain	105.47	4.39	5.15	22.6
Lieutenant	60.09	2.50	4.99	12.5
Master FF	178.79	7.45	4.98	37.1
FF I - III	340.88	14.20	4.62	65.6

Based on the daily average overtime worked by each rank in FY13, MCFRS would need to hire 142.6 new positions to absorb the overtime hours. This is 9.1 less positions than the FY12 average.

*Average for overtime hours worked by rank. Numbers are *not* adjusted for hours worked out of class

**Shift relief factor based on CountyStat's MCFRS staffing analysis report dated 1/23/2012

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Cost of New Hire Vs. Overtime

Rank	FY13 Daily OT Average*	# of FFs Needed to Work All OT Hours	Average Cost to Work All Hours as OT**	Average Cost to Work All Hours for New Hire at Average Rank Pay***	Cost Differential of New Hire vs. OT
Captain	105.47	22.6	$7,565.13	$36,282.75	$28,717.61
Lieutenant	60.09	12.5	$3,532.76	$17,727.10	$14,194.34
Master FF	178.79	37.1	$9,590.14	$47,066.37	$37,476.23
FF I - III	340.88	65.6	$13,415.13	$65,627.33	$52,212.20

Because the shift relief factor is greater than one for each rank, there is never a point where adding new positions is cheaper than working overtime. However, additional factors such as safety, operational efficiency, and employee morale should be taken into account when deciding to use overtime versus hiring new firefighters.

*Average for overtime hours worked by rank. Numbers are *not* adjusted for hours worked out of class

**Includes average cost of salary and employer taxes

***Includes costs for the *average* position including costs of salary, benefits, and employer taxes
  Costs of new hire do not include the costs attributed to hiring process and training

Wrap-up

- **Follow-up Items**