

# Resources for developing a "Staffing Plan"

The following pages are drawn from the 3rd Edition *Staffing Analysis* book that was developed with NIC funding. The sections on "Coverage Plan" are provided here, along with forms. **The Coverage Plan is consistent with the PREA definition of a "Staffing Plan."**

All of the staffing analysis documents, forms, and computer programs are available at no cost at: [staffinganalysis.org](http://staffinganalysis.org)

## TABLE OF CONTENTS

3rd Edition, Jail Staffing Analysis,  
Rod Miller, John E. Wetzel, James Hart

Foreward.....	iii
Table of Contents.....	iv
Preface.....	v

### PART I: Introduction and Overview

1. Defining "Staffing Analysis".....	1
2. Jail Staffing Issues.....	1
3. Symptoms vs. Causes: The Overtime Example.....	2
4. When to Use This Document.....	3
5. Benefits Derived from Conducting a Staffing Analysis.....	4
6. Who Should be Involved?.....	4
7. Jail Characteristics and Staffing Considerations.....	6
8. The Staffing Analysis Process.....	8

### PART II: Step by Step Instructions

1. Describe the setting.....	11
2. Chart activities.....	19
<b>Included..... 3. Develop a coverage plan .....</b>	<b>25</b>
4. Evaluate the coverage plan.....	39
5. Develop schedules and calculate efficiency.....	44
6. Calculate Net Annual Work Hours (NAWH).....	57
7. Prepare a budget.....	72
8. Write the report.....	75
9. Implement and monitor.....	77

GLOSSARY.....	80
---------------	----

### APPENDIXES

<b>Included...</b> Appendix A: <b>Project Manager's Guide. Excerpt</b> .....	85
Appendix B: The Myth of Staffing Ratios.....	133
Appendix C: More on Net Annual Work Hours (NAWH).....	135
Appendix D: Staffing and the Courts.....	139
Appendix E: Standards.....	145
Appendix F: Using the Staffing Analysis Methodology to Analyze Overtime- A Case Study.....	161
Appendix G: Increasing Staff Efficiency by Managing Inmate Behavior.....	167
Appendix H: Evaluation Checklist.....	175
<b>Included.... Appendix I: Forms</b> .....	181
Appendix J: More on Scheduling and Scheduling Tools.....	187
Appendix K: Research on the Effects of Shift Work.....	199

**The complete 3rd Edition, along with forms and Excel programs may be downloaded at no cost at: [staffinganalysis.org](http://staffinganalysis.org)**

### Step 3: Develop a Coverage Plan

The third step in the staffing analysis process focuses-- in great detail-- on the needs for staff at each hour of the day. Most readers will come into this step with an existing staff deployment plan, whether in effect in a current facility or outlined during the design process of a new facility that is under development.

This step yields the most value if you *ignore* current staffing patterns and schedules. Start with a blank piece of paper (or in this case, floor plan) and approach facility operations with a fresh perspective.

At the end of this step you will have a detailed “coverage plan” that describes:

- What types of employees are needed.
- Where they are needed.
- When they are needed.

A coverage plan describes the net numbers and types of employees who must be deployed at specific times in order to maintain safety and security and to implement policies and procedures. (App. A)

The coverage plan has three distinct elements:

- a. Relieved posts and positions.
- b. Non-relieved posts and positions.
- c. Additional “details” that will require employee time throughout the year.

The third element (details) is new to this edition of the workbook. Although it was mentioned in earlier editions, the authors found that few jails effectively document and analyze such details, and as a result their budget request is often underestimated.

#### Think Outside the Schedule

It is important to “think outside the schedule” as you develop a coverage plan. Look at each need and its duration in terms of the actual time frames, not the arbitrary times defined by 8- or 12-hour schedules.

For example, one county identified the need for an additional officer on Thursday nights for two hours to help with the weekly admission of federal prisoners. The staffing analysis team initially balked about even recording that need on the coverage plan because it was too short. But once they were persuaded to put it down, they later found creative and efficient ways to meet the need, in large part by stringing together other small amounts of coverage to create a post.

The authors have seen many staffing analysis teams tend to ignore small, seemingly ad hoc coverage needs. What we have learned in the 20 years since the NIC process was introduced is:

- Nothing is too small to consider
- Everything goes *somewhere*

Take the two-hour Thursday night example. That coverage need adds up to more than 100 hours per year. Failing to consider it somewhere in the staffing analysis process results in one of two outcomes:

1. The coverage need is not met, or
2. The need is met using overtime, which has not been anticipated

Putting the 2-hour block into the coverage plan places it on the radar. If it is not met through the relieved coverage plan, it can be added to the number of hours needed to cover the intermittent details. Either way, the budget request anticipates the need and provides for it.

**a. Relieved Posts and Positions**

The foundation for any jail operation begins with posts and positions that are staffed consistently throughout the week. *Consistently* should not be confused with continuously. A post that is staffed 24 hours daily for all seven days of the week is a continuous post. A post that is staffed Monday and Wednesdays from 0800 to 1800 would be considered consistent if staffing practices ensure that someone is deployed to the post at those times (i.e. the post is relieved).

The second edition workbook provided a coverage form (Form C). This has been replaced by computer-based tools, the “autopost” forms present as Excel files.<sup>4</sup> The Coverage Autopost program begins with the entry of coverage information into form shown in Table II-2.

[Download the Excel files at: staffinganalysis.org](http://staffinganalysis.org)

**Table II-2: Coverage Autopost Format**

Code Number	Post Description	Start Time (0000-2400)	End Time (0000-2400)	Employee Classif.	Mon	Tues	Wed	Thurs	Fri	Sat	Sun

Each post or position is assigned a code number, which is often used to show the location of the post on a floor plan of the facility. The post is described briefly, its start and end times are

<sup>4</sup> Although using the computer-based tools produces a more complete and detailed set of products, an alternative method of completing this step manually is provided in the toolkit that accompanies this workbook.

entered, and the type of employee (classification) is recorded. Each day of the week the post operates is identified. Table II-3 shows an excerpt from a completed coverage form.

**Table II-3: Excerpt of Sample Coverage Form**

Code Number	Post or Description	Start Time (0000-2400)	End Time (0000-2400)	Employee Classif.	Mon	Tues	Wed	Thurs	Fri	Sat	Sun
IN-01	Booking Officer 1	0000	2400	CO1	x	x	x	X	X	x	x
IN-02	Booking Officer 2	0000	2400	CO2	x	x	x	X	X	x	x
IN-03	Booking Officer 3	0000	0630	CO1					X	x	
MC-01	Master Control 1	0000	0630	CO1	x	x	x	X	X	x	x
MC-02	Master Control 2	0800	1600	CO1	x	x	x	X	x		
A-1	Hsg Pod A Officer 1	0000	2400	CO1	x	x	x	X	X	x	X
B-1	Hsg Pod B Officer 1	0600	2300	CO1	X	X	X	X	X	X	x
C-1	Hsg Pod C Officer 1	0000	2400	CO1	x	x	x	X	X	x	X
D-1	Hsg Pod D Officer 1	0600	2300	CO1	X	X	X	X	X	X	x
MAX-1	Max Sec Unit 1	0000	2400	CO1	x	x	x	X	X	x	X
MAX-2	Max Sec Unit 2	0000	2400	CO1	x	x	x	X	X	x	X
SS-1	Shift Super. 1	0000	2400	SGT	x	x	x	X	X	x	X

The sample in Table II-3 depicts several variations that are worth noting:

- 2 officers (a CO1 and a CO2) are provided in intake 24/7.
- A third CO1 is provided in booking on Friday and Saturdays from midnight until 0600.
- One officer is provided in master control 24/7.
- A second master control officer is provided for peak periods of operation (0800 - 1600) on weekdays.
- Housing pods A through D are direct supervision units, with an officer in each pod during all hours that inmates are out of their cells.
- When inmates are locked down (2300 to 0600) one officer provides cell checks for two pods.
- According to policy, the maximum security unit requires two officers 24/7.

The coverage plan form uses one line for one employee. Sometimes several lines are required to show the various coverage times and days of the week.

The Coverage Autopost program analyzes the data that is entered and creates a seven day coverage chart, as shown in Table II-4.

**Table II-4: Excerpt of Coverage Chart**

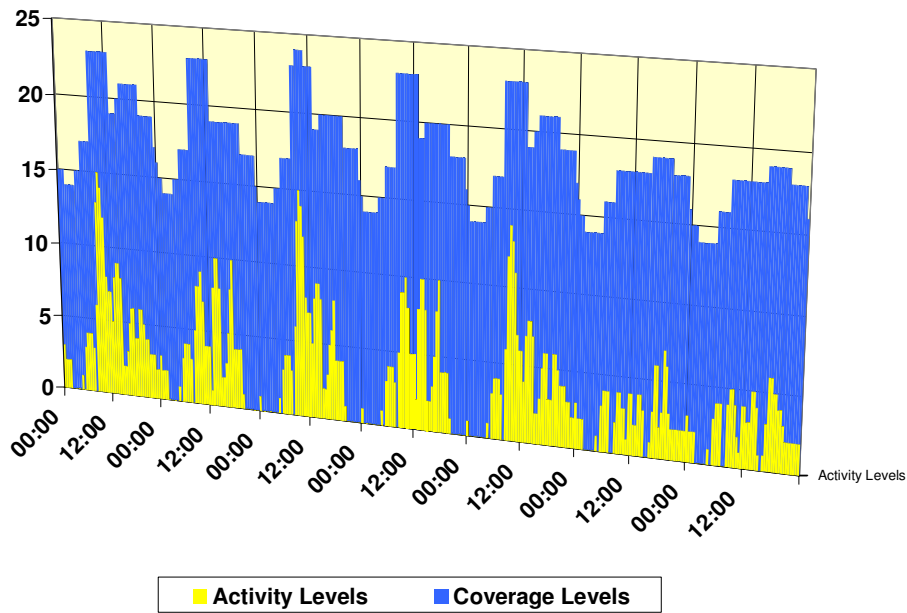
Time of Day	IN-01	IN-02	IN-03	MC-01	MC-02	A-1	B-1	C-1	D-1	MAX-1	MAX-2	SS-1	Total
Monday													
00:00	1	1		1		1		1		1	1	1	8
00:30	1	1		1		1		1		1	1	1	8
01:00	1	1		1		1		1		1	1	1	8
01:30	1	1		1		1		1		1	1	1	8
02:00	1	1		1		1		1		1	1	1	8
02:30	1	1		1		1		1		1	1	1	8
03:00	1	1		1		1		1		1	1	1	8
03:30	1	1		1		1		1		1	1	1	8
04:00	1	1		1		1		1		1	1	1	8
04:30	1	1		1		1		1		1	1	1	8
05:00	1	1		1		1		1		1	1	1	8
05:30	1	1		1		1		1		1	1	1	8
06:00	1	1		1		1	1	1	1	1	1	1	10
06:30	1	1		1		1	1	1	1	1	1	1	10
07:00	1	1		1		1	1	1	1	1	1	1	10
07:30	1	1		1		1	1	1	1	1	1	1	10
08:00	1	1		1	1	1	1	1	1	1	1	1	11
08:30	1	1		1	1	1	1	1	1	1	1	1	11
09:00	1	1		1	1	1	1	1	1	1	1	1	11
09:30	1	1		1	1	1	1	1	1	1	1	1	11
10:00	1	1		1	1	1	1	1	1	1	1	1	11
10:30	1	1		1	1	1	1	1	1	1	1	1	11
11:00	1	1		1	1	1	1	1	1	1	1	1	11
11:30	1	1		1	1	1	1	1	1	1	1	1	11
12:00	1	1		1	1	1	1	1	1	1	1	1	11

The coverage chart graphically depicts the hours and days that each post is staffed during the week. The total number of employees at each half hour is shown in the far right column.

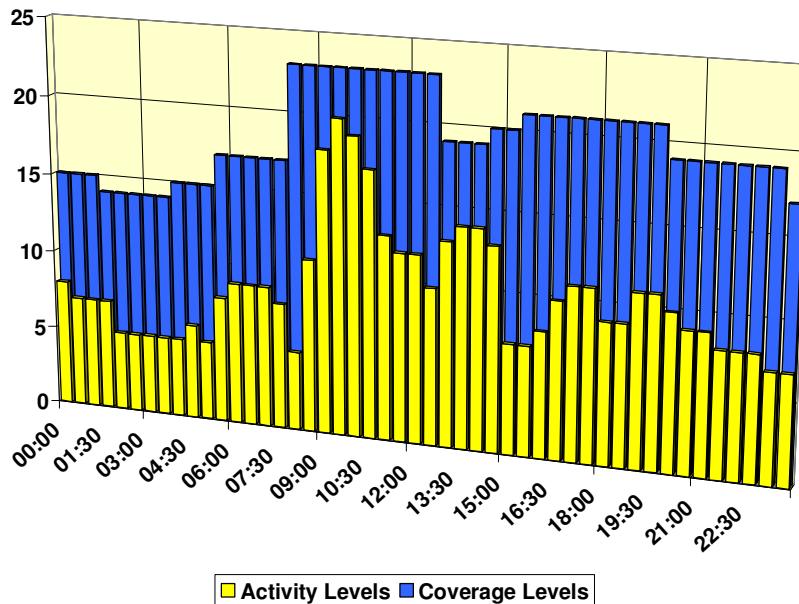
The Autopost Coverage program automatically generates a seven-day coverage graph, showing the total number of employees for each half-hour of the week (see Figure II-8). The graph in Figure II-8 also depicts the activity levels that were charted in Step 2.

The program also generates coverage charts and graphs for each day of the week (see Figure II-9).

**Figure II-8: Sample Seven-Day Coverage and Activity Graph**



**Figure II-9: Sample Coverage and Activity Graph, Monday**



The best coverage plans are developed by a team of stakeholders, informed by the findings from Step 1 and Step 2. Figure II-10 shows one such team working on a draft coverage plan. The floor plan for one level of the facility is projected on the white board, showing the housing units, numbers and types of inmates, and other key information. The location of posts are drawn on the floor plan as they are identified. The hours and days of operation are recorded on a flipchart and are eventually entered into the Autopost program.

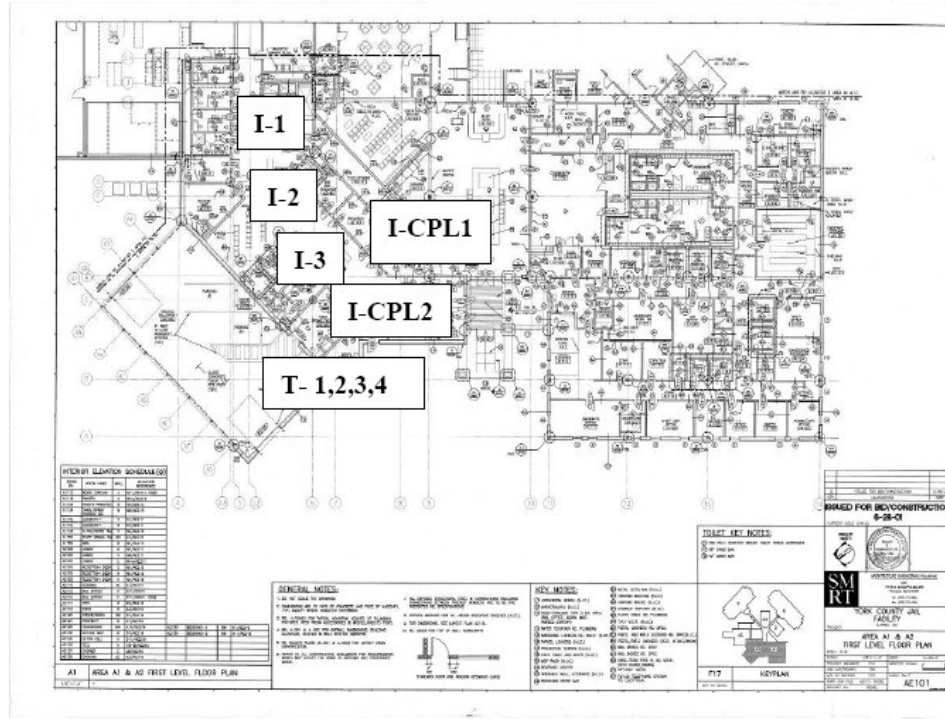
**Figure II-10: Stakeholder team developing a draft coverage plan**



Figure II-11 is an example of a coverage plan presented with its corresponding coverage plan information. The floor plan excerpt is annotated to show post locations, and the table below the floor plan presents specific coverage information.

**Figure II-11: Sample of Coverage Plan and Post Locations**

**Intake, Administration and Public Entrance**



Code Number	Post or Description	Start Time (0000-2400)	End Time (0000-2400)	Employee Classification	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
I-1	Intake	0000	2400	CO	X	X	X	X	X	X	X
I-2	Intake	0000	2400	CO	X	X	X	X	X	X	X
I-3	Intake State Prisoners	0900	1100	CO			X				
T-1	Transport	0800	1600	CO	X	X	X	X	X		
T-2	Transport	0800	1600	CO	X	X	X	X	X		
T-3	Transport	0800	1600	CO	X	X	X	X	X		
T-4	Transport	0800	1600	CO	X	X	X	X	X		
I-CPL1	Intake Cpl- Vid Arraign and Admits	1430	0030	CPL	X		X	X	X		
I-CPL2	Intake Corporal- Peak Admits	1530	0130	CPL	X				X	X	X

To accomplish this first part of Step 3, you will use the materials and insights that you assembled in Step 1 (profile of the facility including facility layouts, mission, etc.), and in Step 2. Have a copy of the facility floor plan in front of you when you start, or better yet, project it onto a white board and take digital photos of your products.



Several jails have found it effective to start by examining coverage needs according to specific functions, such as:

1. Provide coverage for all inmates in their respective housing units (remember that supervision is not the same as observation).
2. Provide coverage for inmates when they are outside of their housing units (for example when inmates are a sick call, attorney visits, programs, or work).
3. Provide coverage for all inmate movement.
4. Provide coverage for controlling all security doors and features (including perimeter security).
5. Provide first line supervision for all employees on duty at any given time or day.
6. Provide coverage for shift command.
7. Provide coverage for all other areas and functions that have not been addressed yet.

Remember that each post or position identified in this task will be relieved-- it will be filled even when a scheduled employee calls in sick or fails to report for another reason.

**b. Non-Relieved Posts and Positions**

The second task in Step 3 identifies the need for posts and positions that are not relieved when a designated employee does not report for work. For example, when the jail administrator is away at a meeting or out sick, no one steps into his/her position for the day. There are usually many such non-relieved positions, and sometimes posts, that must be identified.

The format shown in Figure II-2 (provided again in Table II-5) may also be used for this step, although you will not need to enter into the Autopost program. Record each non-relieved position and post, identify the classification of employee, describe the hours worked and the corresponding days of the week.

**Table II-5: Coverage Autopost Format**

Code Number	Post Description	Start Time (0000-2400)	End Time (0000-2400)	Employee Classif.	Mon	Tues	Wed	Thurs	Fri	Sat	Sun

The non-relieved positions and posts are not usually depicted on a floor plan, or merged with the relieved posts and positions. Remember that at any time, on any day, one or more of the

non-relieved positions may be vacant for a variety of reasons. Therefore, these positions should not be considered when evaluating the sufficiency of coverage in terms of backup and emergencies.

### **c. Identifying and Estimating Coverage Hours for “Details”**

Tasks a and b have identified and quantified the majority of all coverage needs. In addition to these predictable coverage needs, there are a host of intermittent and often unpredictable activities that demand employee effort. These “details” vary from month to month, and year to year, but nonetheless consume a substantial amount of employee effort.

Any comprehensive coverage plan describes such details and estimates the hours of effort that will be needed in the coming year. An initial list of such details has been assembled in recent years by participants in NIC training events, including:

- Hospital watch/transport
- Special assignments
- CERT – 5 officers
- Window washing (officer to escort maintenance employee)
- Capital equipment inventory, monthly, semi-annually
- Emergency codes
- Medical and mental health transports
- Mass arrest
- Criminal activity in housing unit or other area of jail (investigation, reports, review of records and recordings, etc.)
- Operational breakdowns
- Power failure and/or generators failing
- Loss of equipment
  - Emergency searches
  - Computer failures
  - Mechanical failure/door locks
  - Sprinkler heads
- Tours
- Volume increase booking
- Facility search
- Suicide/attempted suicide
- Outside appointments for inmates- transport
- Medical event (i.e., communicable disease)
- Fire drill
- “2 escorts required”
- Mid-shift vacancy (illness, injury, emergencies)
- Officer funerals
- Honor guard
- Elevator malfunctions
- High risk court event
- Weather event (i.e., blizzard, flood)
- Inmate death

- Bomb threat
- Maintenance projects
- Facility renovation and major repairs
- Court testimony
- Immediate inmate transport
- Employee recognition and meetings
- Group administrative meetings
- Escape
- Numerous transportation runs at the same time
- Special public works projects
- “Hot sheet” inmates
- Judge practices/scheduling
- Inspections (state jail standards, fire marshal, health department and others)

There are certainly additional details that have not been identified in the preceding list, but it provides a starting point. Each agency will have its own unique constellation of details.

Remember: nothing is too small to count, and everything goes somewhere. In some instances, a detail in one jail might be counted in the NAWH calculations in another. No problem-- as long as the time is counted *somewhere* in the staffing analysis process. Table II-6 presents a sample summary of intermittent details from Hennepin County, Minnesota.

**Table II-6: Sample of Intermittent Details Calculations**

	Hours	Classification
<b>(3) Deputy Sheriff's to Water Patrol for the Summer</b>		
3FTEs x 173.3 hours per month x 3 months	1,559.7	Deputy
2006 Total <b>Hospital Guard Hours</b> = 6,901	6,901	Deputy
<b>Detention Deputy Final Interviews(Det Sgt)</b>		
24 hrs per session x 2 sergeants x 6 sessions / 23 FTEs (Weighted Average)	288	Sgt.
<b>Licensed Deputy Interviews</b>		
6 sessions per year 24 hours per session x 1 Lieut	144	Lt.
<b>Licensed Deputy Oral Boards</b>		
6 sessions per year, 24 hours per session 1 Deputy FTE	144	Deputy
<b>Special Response Team (Detention Deputies)</b>		
Orientation (40 hours) x 10 FTEs per year	400	Det Dep
Required Refreshers (16 hours) x 40 FTEs	640	Det Dep
<b>Weekend Duty</b>		
11 slots per year X 16 hours = 176 hours / 4 Lt.s	704	Lt.
<b>ANNUAL TOTAL</b>	<b>10,637</b>	Total

Ensuring that all details are identified and quantified should become an ongoing task for the agency. If these events are not currently documented and quantified, protocols must be established to begin to collect that data and information.

Details are intermittent, and many occur without notice and may not be scheduled. In one 800-bed jail, managers found that employees are required to commit 59 hours to such details on an average day. In the case of this jurisdiction, *none* of these hours were anticipated in the budget. The agency responds to such needs in three ways:

1. Add employees to address the needs using overtime.
2. Absorb the details with existing staff on duty, further stretching employees and often at the expense of key tasks and responsibilities.
3. Reducing levels of service in the facility in order to temporarily free up employees to address the need.

The agency retroactively collected data about such details and found that:

- Total Hours Required to Address Details: 21,539 (equivalent of 13.5 FTE's).
- Overtime created to address details: 11,169 hours.
- No overtime created—details “absorbed” by staff on duty: 5,966 hours.
- Level of service diminished (i.e., pods temporarily closed): 4,404 hours of closure.

Many facilities fail to budget for details. If your agency does not identify, quantify and plan for such activities, you will have to estimate the needs in the first year. Be sure to develop procedures that collect this data for analysis in subsequent years.

### **Coverage- Not Scheduling**

A note about schedules is in order at this point. Try to think of schedules as a means to an end. Schedules allocate individual staff members to specific time periods and days of the week. Coverage needs, as described here, represent what is really needed in the jail at a given time.

An efficient schedule will assign the right numbers and types of staff to correspond with coverage needs, with a minimum amount of “slippage.” While some of us struggle to get enough staff, and really have no control of how much staff we are allocated, we *are* in control of how we use our personnel.

Think of this coverage activity as a tool that might help you increase the effectiveness of your current resources--a tool to help you work smarter with what you already have.

### **Summary**

The coverage plan components are assembled at the end of Step 3, summarized on Form C that adds hours for relieved and non-relieved posts, and details. Consider the initial product as a draft, which will be systematically evaluated for sufficiency in Step 4. Be prepared to revisit some of the coverage decisions and details based on the findings of the evaluation.

Developing an initial staff coverage plan is a trial-and-error process, so be patient and persistent. Make a first attempt, step back and review the results, and then try to find improvements. Be sure to identify all of the tasks and activities that need to be addressed. Step 3 provides some helpful tools to remind you of the range of issues to consider.

### **Creative Solutions to Consider**

In addition to the creative solutions identified at the end of Step 1 and Step 2, the following strategies should be considered.

#### **Employ Creative Administrative and Management Practices**

Changing the way that the jail is administered and managed can relieve staffing pressures and increase staff productivity.

##### **a. Training**

Training is an ongoing activity for all jails, usually creating serious scheduling and overtime problems. Some jails have found that scheduling training to correspond to coverage needs may be efficient. Others have moved toward increased on-the-job training and reduced pre-service and classroom training. In some jails a field training officer (FTO) works with employees during their shifts, at their posts. And the FTO provides another employee on the shift who is available to respond to emergencies.

Training provided as part of routine shift briefings may also be efficient and effective. Objective testing to ensure staff competency sometimes reduces the need to train or retrain staff, and at a minimum improves the effectiveness of all training activities.

Emerging training technologies—such as correspondence courses, computer-based training courses, distance learning, and video-based training—can greatly reduce scheduling problems. The National Academy of Corrections offers a variety of certified computer-based training programs for jail officers, first line supervisors and managers.<sup>5</sup>

##### **b. Supplementing Full Time Employees**

Supplementing full-time employees with alternative sources of assistance can be effective if it is carefully considered. Some responsibilities that are currently assigned to full-time staff may be shifted to other people, such as volunteers, interns, part-time staff, seasonal staff, or peer instructors (e.g., an inmate who would tutor another inmate in a high school equivalency class). Many jails routinely use college interns for ongoing jail tasks, and realize additional benefits when the interns often apply for employment after graduation.

##### **c. Improve job descriptions**

Closely examine current job descriptions. Do they accurately and fully reflect the duties assigned to each classification of staff? Consider updating these profiles and use the opportunity to incorporate

---

<sup>5</sup> U.S. Dept. of Justice, National Institute of Corrections, Academy Division. [www.nicic.org](http://www.nicic.org).

new ideas and approaches. Use the insights gained from examining tasks in Step 2 to identify improvements. Some jails find it helpful to have civilian staff for many jobs and tasks that do not involve direct contact with inmates.<sup>6</sup>

### **Improve Use of Technology**

Emerging technology offers promising tools to improve staff efficiency and effectiveness. However, technology *rarely* reduces staffing needs. Rather, technology can be appropriately and effectively used to enhance staff performance and improve facility operations. Beware of salespersons who promise “staff savings” by deploying their new equipment. Courts have ruled that such technology as closed-circuit television is appropriate only to “supplement rather than supplant” staff.

Figure II-12 outlines *some* of the potential uses for emerging technology.

#### **Figure II-12: Potential Uses of Emerging Technology**

##### **Type of Technology Possible Uses in the Jail Setting**

###### **Perimeter electronics (motion detectors, buried sensors, etc.)**

- Reduce the need for staffed posts or towers on the perimeter of the facility or on the grounds.
- Enhance existing physical barriers, such as walls and fences.
- Enhance other electronic surveillance devices, such as closed-circuit television.

###### **Bar coding and other scanning devices**

- Improve inmate identification practices.
- Streamline property, evidence, and clothing inventory.
- Enhance admission and release procedures.
- Enhance internal movement of inmates and staff.
- Provide new information and data about jail operations.
- Reduce paperwork.

###### **Closed-circuit television and DVD recorders**

- Enhance internal and external surveillance.
- Provide visual record of operations and incidents.
- Deliver programs and training to multiple locations without moving inmates or staff.
- Record programs for repeated presentation.
- Deliver information and programming throughout the jail from a single source.

###### **Video conferencing**

- Enable visits between inmates and attorneys, family, and others who are visiting off site.
- Enable arraignment and other court proceedings without transport.
- Enable telemedicine consultation.
- Provide programs and training for staff and inmates through distance learning.

---

<sup>6</sup> If using civilian employees, be sure to remember that in an emergency they are not authorized to oversee inmates, and in some instances will require assistance themselves.

### **Telephone systems**

- Give staff portable phone capabilities within the facility and off site.
- Improve and streamline phone traffic management (e.g., automated answering and call-direction).
- Reduce the need to supervise inmate phone calls by eliminating the opportunity for abusing the privilege.

### **Security controls**

- Elevator controls can allow inmates and the public to operate elevators without staff assistance.
- New security control panels, such as touch screen, can increase the efficiency and accuracy of staff and consolidate more functions in one location.
- Transmitters for door controls allow staff to open doors without being at the control panel.

### **Debit cards and similar automated inmate account tools**

- Automate inmate financial transactions, improving accuracy and recordkeeping in the commissary and reducing paperwork.

### **Computers**

- Improve overall inmate recordkeeping practices.
- Streamline intake and release procedures.
- Provide inmates with programmed learning opportunities that are self-paced and flexible in terms of time and location.
- Provide staff with new training tools.

### **Kiosks**

- Commissary.
- Visitor sign in.
- Work-release ride sign ins.
- Temporary identification issue/tracking.
- Grievances.
- Medical and other requests.

### **Resources**

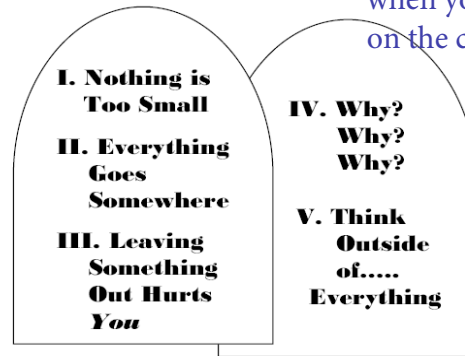
- Sample reports.
- Appendix A: Project Manager's Guide

## Excerpt: Appendix A

### Project Manager's Guide for the 3rd Edition

What to remember  
when you are working  
on the coverage plan

#### Step 3: Develop a Coverage Plan (see Page 24 of Handbook)



A coverage plan is the lynchpin of the staffing analysis process, and arguably, your jail operations.

A coverage plan describes the *net* numbers and types of employees who must be deployed at specific times in order to maintain safety and security and to implement policies and procedures. At the end of this step you will have a detailed “coverage plan” that describes:

- What type of employees are needed
- Where they are needed
- When are they needed

There are now three elements to the coverage plan. The Third Edition added the third category, “details,” to help you identify and quantify the wide range of ad hoc events that require staff time, but are not addressed by relieved posts or positions.

#### Do a Quick Inventory of Your Practices

Take a few minutes, with your team or on your own, to answer the following questions about your agency’s current practices and policies:

1. How do you describe the specific relieved posts and positions that must be operated in your facility?
2. What is your policy regarding filling all of the relieved posts and positions?
3. If there are circumstances under which not all are filled all the time—
  - a. How do you decide which are vacant and when?
  - b. Who has discretion to make these decisions?
4. When is the last time your agency revisited and revised these practices?

Coverage Plan? The first question attempts to identify something that is similar to a coverage plan—not a schedule, but a description of what posts and positions are to be filled for each day of the week. Many jails do not have a document like that; rather, coverage must be inferred from the schedule. But as you will see later, the number of scheduled employees is rarely the number of actual employees who report for duty.



Backfilled? The second question explores what happens when someone does not report for work when he/she is scheduled to fill a relieved post or position. One answer we frequently hear is, “It depends”. Some agencies have a strict policy of filling all relieved posts and positions and authorizing managers to force employees to work overtime as needed. Others leave those decisions to shift supervisors or other management. It is important to get the answers to this question on the table. If you have a document that was produced for supervisors to describe when they should call for overtime, this may be a good point starting point.

Discretion to Leave Post Unfilled. Some agencies have written policies and procedures that direct shift supervisors and other managers with regard to filling, or not filling, empty posts on a shift. Many agencies leave that decision up to a supervisory employee who is working the shift; often, these employees do not have direction regarding which to fill and which to leave vacant. This creates inconsistencies in practices from shift to shift, and leaves the agency wide open for liability.

Current policies? If your agency has not reviewed and revised the policies that are involved with filling relieved posts and positions, use the staffing analysis—and this step—to bring such critical directives up to date.

### **Think Outside the... Schedule**

You and your team will be asked to start with a blank piece of paper and draft a coverage plan an hour at a time. This is difficult, and you will find yourself frequently asking your team (and reminding yourself) that current shift configurations are not on the table in this step.

Schedules are a means to an end. They assign individual employees to work at specific times and days in order to meet coverage needs. But many agencies do not have a coverage plan and confuse the schedule with it.

There will a tendency during this step for your team to:

- Look at current coverage and/or schedules instead of re-thinking everything from the ground up.
- Think in blocks of 8 or 12 hours, because that’s the length of a shift.
- Limit their thinking to the start and end times of current shifts rather than letting the task dictate the time and duration of deployment.

Try putting it this way to your team: *In Step 2 we showed that the level of activity varies markedly from hour to hour; doesn’t it follow that coverage needs will vary as well?*

### **Everything Goes Somewhere—Three Types of Coverage**

The staffing analysis methodology centers on hours as the unit of measure. The goal is to anticipate all of the hours of employee time you will need in the next budget year and to

submit a budget request that will meet those needs. The budget request will be grounded on documentation that literally links every hour of work to every dollar of salary.

The coverage plan must include all of the hours that will be worked. You will use your past experience to project future needs. Be sure you explain the three coverage categories to your team:

- a. Relieved posts/positions--always staffed by an employee.
- b. Non-relieved positions--when the individual employee assigned to the position does not report for duty and the position is not filled by another.
- c. Details--intermittent and often unpredictable activities that demand employee time. These “details” vary from month to month, and year to year, but consume substantial amount of employee effort.
- d. Net Annual Work Hours (NAWH)—some of the tasks that are identified will be counted in Step 6, NAWH.

As you and your team work through this step, be sure not to lose any seemingly “stray” comments. If someone identifies an activity or task that requires employee time, find a place to count it in one of the three.

### **Remember NAWH Will Account for Some Hours**

You will need to be familiar enough with Step 6 to be able to guide your team during the coverage process. Be sure you have read that section of the Handbook and that you are aware of the NAWH elements that might be taken care of in coverage. The primary element that takes employees away from their posts will be staff training.

### **What About Breaks?**

Employee breaks should be addressed in the coverage plan. Some agencies try to include breaks in the NAWH calculations, but we counsel against that. Breaks are an activity that must be accommodated as part of the coverage plan.

### **Relieved Posts and Positions**

Most of the hours needed to operate the jail will fall into this category. Take your time with it. The Handbook describes a good process for drafting your coverage plan, and even has a photo of a team creating a plan. As your team makes decisions about coverage needs, record the decisions in the format shown in Figure A.10. This will make it easy to enter the information into the computer programs and generate spreadsheets and graphs.

**Figure A.10: Coverage Plan Form**

Code	Post or Description	Start Time (0000-2400)	End Time (0000-2400)	Employee Classification	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday

The Handbook describes the relieved coverage process in detail and provides samples. The sample staffing analysis reports in the toolkit also contain sample coverage plans.

Each row in the coverage plan form represents one employee working a specific start and end time for the days that are checked. If you have two employees needed for the same times and days, use two lines. Again, the Handbook provides examples that will be helpful.

**This Is a Team Effort**

The best coverage plans are developed by a team of stakeholders, informed by the findings from Step 1 and Step 2. Figure 3.6 of the Handbook shows one such team working on a draft coverage plan with the floor plan for one level of the facility projected on the white board. The location of the posts are drawn on the floor plan as they are identified.

**Be Reasonable But Don’t Compromise Safety and Security**

You need to set the tone at the beginning of this step. Participants should be thorough and complete, but also reasonable about the cost of coverage levels. The objective is to find a balance between resources and operational needs. But do not let budget concerns keep you from developing a coverage plan that provides safety and security.

If participants understand that the sky is not the limit, but that safety and security will not be compromised, they will approach this task with an appropriate balance of priorities.

**Why? Why? Why?**

Train yourselves to challenge everything that goes onto the draft coverage plan:

- Ask “Why?” and don’t settle for “We’ve always done it that way”.
- Use a sharp pencil and define time frames precisely.

- Be sure that a coverage need is the right length—not a minute too long, but not a minute too short—nothing is too small to count in the coverage plan.
- Ask if there are other ways to implement a task or activity that would change coverage needs (see the Hennepin County medicine delivery example in the Handbook).

At first, this will be a pain in the neck, but soon all of your team members will get the idea and it will be a creative atmosphere. Be ready to consider a lot of changes that will improve your operations and efficiency.

### **b. Non-Relieved Posts and Positions**

The second element in Step 3 identifies the need for posts and positions that are not relieved when a designated employee does not report for work. For example, when the jail administrator is away at a meeting or out sick, no one steps into his/her position for the day. There are usually many such non-relieved positions, and sometimes posts, that must be identified.

The format shown in Figure A.10 may also be used for this step, although you will not need to enter into the Autopost program. Record each non-relieved position and post, identify the classification of employee, describe the hours worked and the corresponding days of the week.

*Why are non-relieved posts and positions excluded from the calculations we developed for relieved posts and positions?* Because you cannot be sure that a non-relieved employee will actually be present at any time on any given day. Non-relieved employees are not at work for a variety of unscheduled absences. When they do not report, no one steps in to take on their duties. Therefore, we do not want to consider them in the same way we have considered relieved posts and positions.

The non-relieved posts will go directly into budget calculations, as shown in Step 7. Relieved posts must be calculated using the NAWH methodology.

### **c. Details**

After you have finished the relieved and non-relieved needs, you need to wrack your brains (and research operations) to identify all of the activities that have not yet been considered. These are called “details,” as in: “We detailed two officers to take the inmate to the emergency room”.

*Details demand a response. When the needs arise, employees are assigned to meet the needs, for whatever duration is needed.* Details are often not flexible in timing, and many are emergencies. Sometimes you do not control the duration of details. When an officer is taken off the floor to immediately respond, and then backfill with overtime, the overtime hours need to be counted as details.

To estimate details you need to collect data on details that you have encountered in the past and analyze it for multiple years to identify trends. If inmate hospital security details have been steadily increasing, you should increase the number of hours for the next year to

anticipate a continuation of that trend.

The product of the coverage plan for details is an estimate of total hours needed, by classification of staff, for the next budget year. These hours will go directly into the budget as either overtime, part-time, or a combination of both.

To get this process started, ask your team to identify examples of details that occur in your facility. Make a list and then look at the lists in the Handbook and in the sample reports. Add to your list as needed. Due to the often unplanned nature of many of these “details”, you may not be able to quantify exactly how many hours you may need. When this happens, use past experience and data as a starting point.

Discuss where you will be able to find data, or at least information, about the number of hours each type of detail has demanded in recent years. If you cannot find data, you will have to estimate this time. Whenever you do not find data that you need, be sure to create a protocol to begin collecting it. That way, you will have it in subsequent years.

### **Don't Rush**

This step offers the greatest opportunity to improve jail operations. Do not rush through it, and do not be afraid to explore a wide range of alternatives.

If you identify changes in operations that may be implemented now, go ahead with them. Adjust your coverage plan accordingly.

Discussions in this step might take you back to previous steps. You may decide to change the timing of an intermittent activity in order to streamline coverage needs. Great! Do it, go back and change the activities data, and move on.

### **Document Your Improvements**

Whenever you find ways to “work smarter” and be more efficient, record them on a running list. The list will become part of your report, giving you and your team credit for finding ways to improve the jail.

TABLE OF CONTENTS

Foreward..... iii  
Table of Contents..... iv  
Preface..... v

PART I: Introduction and Overview

- 1. Defining “Staffing Analysis”..... 1
- 2. Jail Staffing Issues..... 1
- 3. Symptoms vs. Causes: The Overtime Example..... 2
- 4. When to Use This Document..... 3
- 5. Benefits Derived from Conducting a Staffing Analysis..... 4
- 6. Who Should be Involved?..... 4
- 7. Jail Characteristics and Staffing Considerations..... 6
- 8. The Staffing Analysis Process..... 8

PART II: Step by Step Instructions

- 1. Describe the setting..... 11
- 2. Chart activities..... 19
- 3. Develop a coverage plan ..... 25
- 4. Evaluate the coverage plan..... 39
- 5. Develop schedules and calculate efficiency..... 44
- 6. Calculate Net Annual Work Hours (NAWH)..... 57
- 7. Prepare a budget..... 72
- 8. Write the report..... 75
- 9. Implement and monitor..... 77

GLOSSARY..... 80

APPENDIXES

- Appendix A: Project Manager’s Guide..... 85
- Appendix B: The Myth of Staffing Ratios..... 133
- Appendix C: More on Net Annual Work Hours (NAWH)..... 135
- Appendix D: Staffing and the Courts..... 139
- Appendix E: Standards..... 145
- Appendix F: Using the Staffing Analysis Methodology to Analyze Overtime-  
A Case Study..... 161
- Appendix G: Increasing Staff Efficiency by Managing Inmate Behavior..... 167
- Appendix H: Evaluation Checklist..... 175
- Appendix I: Forms..... 181
- Appendix J: More on Scheduling and Scheduling Tools..... 187
- Appendix K: Research on the Effects of Shift Work..... 199

## APPENDIX I: Forms

The following forms are also available in Microsoft Excel format.

**Form A: Activities** (“Data Sheet” on Excel Autopost program) [Download the Excel programs at: staffinganalysis.org](http://staffinganalysis.org)

Activity	Start Time (0000-2400)	End Time (0000-2400)	Weight	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday

**Form B: Coverage: (“Data Sheet” on Excel Autopost program)**

Code Number	Post or Description	Start Time (0000-2400)	End Time (0000-2400)	Employee Classif.	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday





**Form D: Schedule** (“Data Sheet” on Excel Autopost program)

<b>Code Number</b>	<b>Employee Name or Description</b>	<b>Start Time (0000-2400)</b>	<b>End Time (0000-2400)</b>	<b>Classification</b>	<b>Mon</b>	<b>Tues</b>	<b>Wed</b>	<b>Thur</b>	<b>Fri</b>	<b>Sat</b>	<b>Sun</b>

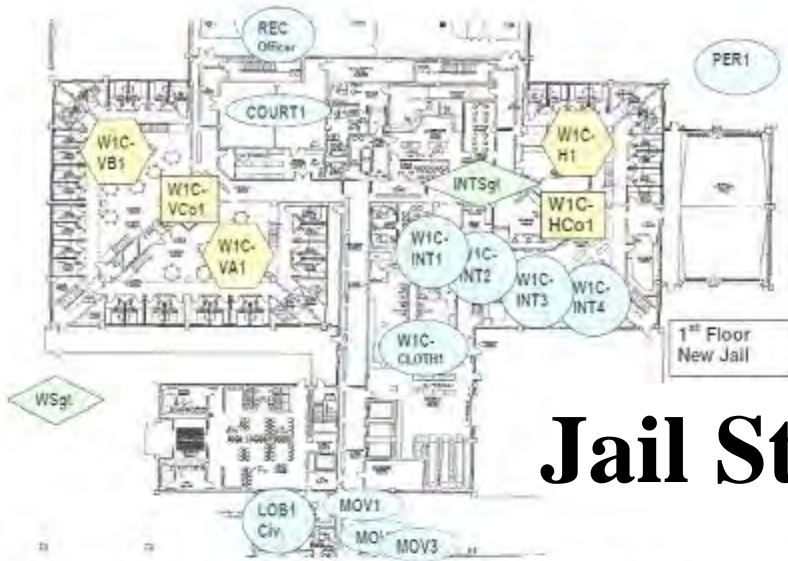
**Form E: Scheduling Efficiency**

<b>Employee Name</b>	<b>Sun</b>	<b>Mon</b>	<b>Tues</b>	<b>Wed</b>	<b>Thur</b>	<b>Fri</b>	<b>Sat</b>	<b>Total Days Scheduled</b>
<b>A</b>								<b>0</b>
<b>B</b>								<b>0</b>
<b>C</b>								<b>0</b>
<b>D</b>								<b>0</b>
<b>E</b>								<b>0</b>
<b>F</b>								<b>0</b>
<b>G</b>								<b>0</b>
<b>H</b>								<b>0</b>
<b>I</b>								<b>0</b>
<b>J</b>								<b>0</b>
<b>K</b>								<b>0</b>
<b>L</b>								<b>0</b>
<b>M</b>								<b>0</b>
<b>N</b>								<b>0</b>
<b>O</b>								<b>0</b>
<b>P</b>								<b>0</b>
<b>Q</b>								<b>0</b>
<b>R</b>								<b>0</b>
<b>S</b>								<b>0</b>
<b>A. Total Scheduled</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
<b>B. Total Coverage Needed</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
<b>C. Coverage minus Scheduled (B minus A)</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	

**Form F: Net Annual Work Hours (NAWH)**

	Job Classifications				
	Classif-ication 1	Classif-ication 2	Classif-ication 3	Classif-ication 4	Classif-ication 5
To ensure that your calculations are correct, please press the Tab key or click on an empty cell after entering your data.					
<b>Steps</b>					
1. Total hours contracted per employee per year (if a regular workweek is 40 hours, then 40 x 52.14 weeks = 2,086)					
2. Average number of vacation hours per employee per year					
3. Average number of compensatory hours off per employee per year					
4. Average number of sick leave hours off per employee per year					
5. Average number of training hours off per employee per year					
6. Average number of personal hours off per employee per year					
7. Average number of military hours off per employee per year					
8. Other (Specify)					
9. Other (Specify)					
10. Other					
11. Other					
12. Other					
13. Other					
14. Other					
15. Other					
16. Other					
17. Other					
<b>19. Total hours off per employee per year</b>					
(total lines 2 through 19)	0	0	0	0	0
<b>20. Net annual work hours</b>					
(subtract line 19 from line 1)	0	0	0	0	0

APPENDIX E: COVERAGE PLAN—RELIEVED POSTS/POSITIONS  
ANNOTATED FLOOR PLANS



*Final Draft*  
**Jail Staffing Analysis**  
**Third Edition**

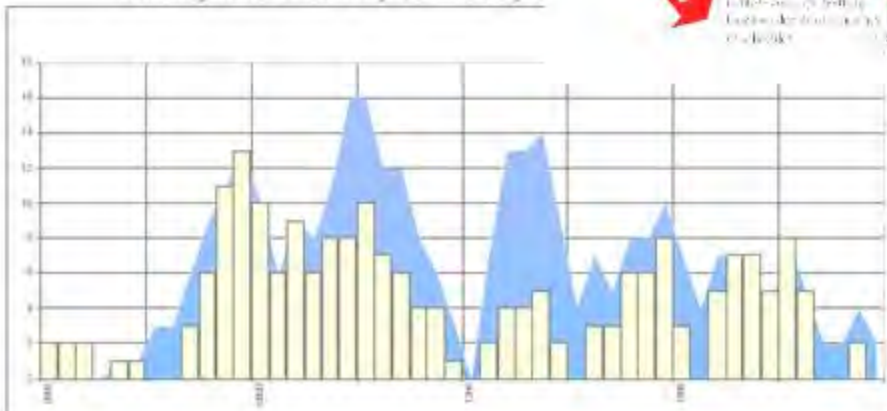
Code Number	Post or Description	Start	End	Class	M	Tu	W	Th	F	Sa	Su
WIC-VB1	VB Unit Housing Supervision	0000	2400	CO	x	x	x	x	x	x	x
WIC-VA1	VA Unit Housing Supervision	0000	2400	CO	x	x	x	x	x	x	x
WIC-VCof	V Block Control Center	0000	2400	CO	x	x	x	x	x	x	x
WIC-H1	H Block Housing Supervision	0000	2400	CO							
WIC-HCo1	H Block Control Center	0000	2400	CO							
WIC-INT1	Intake officer 1 (times to be adjusted)	0000	2400	CO							
WIC-INT2	Intake officer 2	0000	2400	CO							
WIC-INT3	Intake officer 3	0000	2400	CO							
WIC-INT4	Intake officer 4	0000	2400	CO							
WIC-CLOTH1	Clothing Officer 1	0000	2400	CO							
MOV1	Movement/Backup 1	0000	2400	CO							
MOV2	Movement/Backup 2	0800	2400	CO							
MOV3	Movement/Backup 3	0000	2400	CO							
COURT1	Court Officer (in house courtroom)	1200	1600	CO							
WSgt	West New Jail Sergeant	0000	2400	Sgt							
IntSgt	Intake Sergeant	0000	2400	Sgt							
LOB1	Lobby/Reception	0600	2200	Civ							
REC	Recreation Officer- whenever rec is going on										



- 9 STEPS**
1. Describe the setting
  2. Chart activities
  3. Develop a coverage plan
  4. Evaluate the coverage plan
  5. Develop schedules and calculate efficiency
  6. Calculate Net Annual Work Hours (NAWH)
  7. Prepare a budget
  8. Write the report
  9. Implement and monitor

**Rod Miller and  
John E. Wetzel**

Monday and Saturday (Saturday is)



**February 2012**

*Final Draft*  
**Jail Staffing Analysis**  
**Third Edition**

*Authors:*

Rod Miller

John E. Wetzel

*Contributors:*

James M. Hart

Donald L. Leach II

David M. Parish

Arthur P. Thompson, AIA

Richard E. Wener, PhD

*Editor:*

William B. Parkinson

This document was prepared under cooperative agreement number 07J61JSO from the National Institute of Corrections, U.S. Department of Justice. Points of view or opinions stated in this document are those of the authors and do not necessarily reflect the official position or policies of the U.S. Department of Justice.

Copyright 2012, Rod Miller and John E. Wetzel

The authors permit reproduction of all or any part of this copyrighted material if appropriate attribution is given and if the material is not sold for a profit. The National Institute of Corrections reserves the right to reproduce, publish, translate, or otherwise use all or any part of this copyrighted material .