



Staffing Analysis

WORKBOOK FOR JAILS

Second Edition

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Staffing Analysis Workbook for Jails

Second Edition

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Foreword

This second edition of the *Staffing Analysis Workbook for Jails* updates the edition published by the National Institute of Corrections (NIC) in 1988 to help improve jail operations by improving staffing practices. Since that time, the workbook has become a cornerstone of NIC’s training and technical assistance activities related to jail staffing.

Many legitimate methods can be used to conduct a jail staffing analysis. The first edition of this workbook presented a new methodology in an attempt to allow both the expert and the novice equal opportunities for success. It encouraged more jails to implement comprehensive staffing analyses, which have now become standard practice in many jurisdictions. This workbook simplifies the jail staffing analysis and allocation process, clarifies terms, and incorporates the experience of the field in the 12 years since the first edition was published.

While the procedures may initially seem complicated, experience has proven that the process is effective and rewarding. Jail managers have also discovered many secondary benefits from this process.

NIC will continue to address jail staffing issues through training offered by the NIC Jails and Academy Divisions and through technical assistance. We hope this “how to” workbook will assist others who wish to independently pursue improvements in their jail staffing practices. We invite all jail practitioners involved in this work to contact the NIC Jails Division for additional assistance if needed.

Morris L. Thigpen, Director
National Institute of Corrections



D. A formula for converting net annual work hours to a shift relief factor.

Additional resource material that supports this workbook is available from—

NIC Information Center
1860 Industrial Circle, Suite A
Longmont, CO 80501
Phone: 800-877-1461 or 303-682-0213
Fax: 303-682-0558
Internet: www.nicic.org
E-mail: asknicic@nicic.org

The NIC Jails Division is a source of possible assistance with staffing analysis, including referral, training, and technical assistance:

NIC Jails Division
1960 Industrial Circle
Longmont, CO 80501
Phone: 800-995-6429 or 303-682-0382
Fax: 303-682-0469
Internet: www.nicic.org/inst/nicjails.htm



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Introduction

JAIL STAFFING ISSUES

Staffing a jail poses many challenges and potentially serious problems for administrators, staff, and policy-makers, including the following:

- Unexpected overtime costs.
- Excessive amounts of compensatory time earned by staff.
- Overworked staff who burn out.
- Staff turnover.
- Frequent understaffing, which results in essential posts and positions not being filled.
- Inability to supervise inmates properly or provide needed programs and services.
- Increased incidents of assault and contraband.
- Inability to provide required breaks for staff.
- Lack of proper staff backup to handle emergencies.
- Overreliance on part-time and reserve staff.
- Inability to supervise staff properly.
- Inability to provide adequate staff training, because time cannot be scheduled.
- Too few authorized full-time positions to provide enough actual staff hours to cover jail needs.

A comprehensive staffing analysis can help solve these and other staffing problems that jails face.

SYMPTOMS VERSUS CAUSES: THE OVERTIME EXAMPLE

The most common jail staffing issue centers on the amount of overtime logged by jail staff. An examination of some of the underlying causes of excessive or unexpected overtime reveals the need for a comprehensive staffing analysis.

Overtime and compensatory time (usually called “comp time”) accrue when regular full-time staff work additional hours, beyond their usual 40–43 hours per week. Under Federal labor laws, employers

must compensate overtime hours at 1½ times the base pay rate or with paid time off (comp time) that is earned at a similar accelerated rate.

A certain amount of staff overtime is inevitable in jails. Sometimes staff must be asked to work beyond their usual hours to respond to unexpected staff shortages due to sickness or emergencies. Some jurisdictions prefer incurring higher rates of overtime to hiring more full-time staff or operating below minimum staffing levels. Overtime use also provides them with a better trained and more experienced workforce than does the alternative of using part-time staff.

Most overtime that will be required under a given staffing structure can be predicted by anticipating problems, analyzing past practices, and making informed calculations. Once overtime levels are predicted, proactive steps can be taken to reduce them. This staffing analysis workbook will help jail officials, staff, and others to—

- Predict future staffing needs.
- Diagnose the causes of staffing problems.
- Design better staffing practices to address future staffing problems.

When viewed as a symptom of a staffing problem, the underlying causes of overtime can be diagnosed. Excessive overtime is often caused by one or more of the following conditions:

- Insufficient full-time staff positions authorized in the budget to cover basic posts and positions (minimum staffing levels).
- Inability to hire enough staff to fill all authorized staff positions, which may be related to difficulties in recruiting enough qualified applicants, filling positions in a timely manner, or retaining staff.
- Inaccurate staff coverage plan for the jail (an inefficient shift schedule), which produces unexpected demands for additional staff to address basic problems and needs.



- Failure to anticipate situations that make full-time staff unavailable to work their regular hours (such as long-term disabilities, training time, and scheduled and unscheduled time off).
- Failure to accurately calculate the actual number of hours that a full-time staff member is available to work during a year (net annual work hours).
- Inmate crowding (above rated capacity); higher custody classification of inmates than originally planned; and increased bookings, releases, and transports—all of which increase staffing levels unexpectedly.
- Staff-intensive programs.

WHEN TO USE THIS WORKBOOK

This workbook helps officials and staff gain a better understanding of staffing issues and develop a comprehensive staffing plan that will anticipate problems and address the unique needs of each jail. Users will find the workbook helpful in their efforts to—

- Create an initial staffing plan for a new facility.
- Conduct a comprehensive staffing analysis of an existing facility for the first time.
- Review and evaluate an existing staffing plan.
- Revise an existing plan in response to facility or policy changes.

Staffing practices respond to the total jail setting and must be evaluated and revised when any major component of that setting changes. A staffing analysis should be conducted under the following circumstances:

- When a new facility or major renovations are being planned and designed. Analysis should occur at several key points during the planning and design process (prearchitectural programming, schematic design, design development, construction documents) and during the transition phase.
- When substantial changes occur in the facility, inmate population (such as crowding), operating philosophy, policies, or management approaches.
- When no staffing analysis of the jail has been done before.

- When preparing for the annual budget cycle, to identify significant changes in the jail setting.

BENEFITS DERIVED FROM CONDUCTING A STAFFING ANALYSIS

Staffing a jail is an expensive proposition. In many jails, staff costs make up 70 percent to 80 percent of the annual budget, and such a costly resource must be carefully managed. Appendix A describes creative practices and strategies that can increase efficiency and effectiveness, often without adding staff.

A staffing analysis will reveal if jail staffing is deficient in any of several ways:

- Too few staff are provided.
- The wrong type of staff is hired or retained.
- Staff are assigned to the wrong duties.
- Staff are not properly trained.
- Staff are not scheduled properly.

A well-conceived and properly implemented staffing plan will solve these problems. Good staffing plans and practices are important for achieving the jail's most important mandate: providing safety for staff, inmates, and the public. Good staffing improves the jail's ability to provide programs and services, decreases potential liability, and ensures that costly staff resources are used in the most efficient manner.

WHO SHOULD BE INVOLVED?

No single official or staff member can improve staffing practices. Long-term success requires that several stakeholders be involved, each with meaningful opportunities to shape the staffing plan. Participation may be secured by forming a team to conduct the staffing analysis or by assigning the principal staffing analysis duties to a single person who circulates findings to a larger group for review and comment. While the latter method may prove easier, it is not successful unless the larger group offers comments and ideas that are considered carefully.

Many people have a stake in jail staffing practices. Consider involving the following stakeholders in the analysis:

- The sheriff, correctional director, or other official responsible for the jail.
- Administrative and supervisory staff.
- Line officers.
- Program staff.
- Contract service providers, such as health service or food service.
- Policymakers, such as commissioners, council members, and city managers.
- Budget analysts and personnel managers.
- Representatives of labor organizations, such as unions and bargaining units.
- Jail inspection officials.

Participation in any form provides a way to tap the resources and ideas of relevant parties and increase their commitment to the process. It also increases the likelihood of their support for the end product. For example, if they are involved in the process and help shape its outcomes, staff may be more cooperative if schedules need to be changed, and budget officials may be more easily convinced of the need for additional funds.

JAIL CHARACTERISTICS AND STAFFING CONSIDERATIONS

Both the unique operational characteristics of jails and the associated staffing requirements pose challenges. An understanding of these challenges provides an important foundation for undertaking the staffing analysis process.

Characteristics of the jail setting

Jail operations have many unique characteristics:

- Jails operate continuously, 24 hours per day, 365 days per year.
- Jails provide a wide spectrum of services, activities, and programs for inmates.

- Jails are high-risk settings, where inmates are often dangerous to themselves and others.
- Jail populations can fluctuate widely throughout the year, and even on a day-to-day basis.
- Many jail inmates spend only a few days in confinement. In some jails, up to 90 percent of all inmates are released within 72 hours of admission.
- Admission and release procedures require much staff effort, but the peak periods of admission are often difficult to anticipate.
- Extensive documentation is required for all activities and procedures at the jail.
- Perimeter security and internal circulation must be controlled at all times.
- Supervision needs vary for different classifications of inmates.
- Jails house both pretrial detainees and sentenced inmates, and each group brings its own operating imperatives and constitutional guarantees.
- Staff turnover is high in many jails.
- Jail staff, administrators, and funding officials can be held liable for jail operations and conditions.

Jail staffing considerations

Several unique operational characteristics of the jail setting must be considered:

- Backup must be provided for staff in all areas of the jail. When a staff member has to respond to problems, critical incidents, or contingencies, other staff must be readily available to provide support.
- Continuing inmate supervision should be provided in all jails. Supervision extends beyond just observing inmates at regular intervals. Effective supervision demands contact between jail staff and inmates; jail staff must be able to “interact” and “act.”
- A constant minimum level of staffing is required to ensure prompt and safe evacuation of the facility during an emergency and to provide continuing inmate supervision. Minimum staffing levels are different for each jail and may change during the year.
- Electronic surveillance (audio monitors, closed-circuit television, movement detectors, sensors) has its place—not as a substitute for staff, but as a supplement.

- Relief must be provided for most staff posts and positions to allow employee meals and breaks.
- Staff must be trained for the duties to which they are assigned.
- Staff must be supervised. Supervisors should not be assigned to a specific post because they must be able to move throughout the facility to supervise operations and respond to problems.

This workbook does not recommend staff-to-inmate ratios, because time and experience have proven that no ratios are applicable to every jail, even jails of the same size. Appendix B explores this issue in greater detail, outlining why one jail’s staffing level cannot be easily compared with another’s and why the use of staff-to-inmate ratios is inappropriate.

Jail staffing levels are based on several internal and external factors. Internal factors include physical plant design (sightlines, number of control posts, perimeter security, number and size of housing units, and controlling circulation or movement—the need to escort inmates); operational philosophy (types of inmate supervision and level of programs and services); classification levels of the inmates; and level of crowding in the facility. External factors influencing jail staffing levels include court decisions and standards of practice.

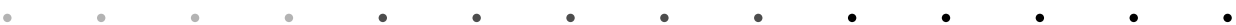
Court decisions have defined important parameters for jail operations by establishing minimum levels of

service, performance objectives, prohibited practices, and specific required operational actions. Past court decisions, most handed down by Federal courts, have required jails to—

- Protect inmates from themselves and from other inmates.
- Maintain communication with inmates and regularly visit occupied areas.
- Respond to inmate calls for assistance.
- Classify and separate inmates.
- Ensure the safety of staff and inmates at all times.
- Make special provisions for processing and supervising female inmates.
- Ensure that all required inmate activities, services, and programs are delivered (medical, exercise, visits, etc.).
- Provide properly trained staff.

Standards promulgated at the local, State, and national levels also provide parameters for jail operations.

- Local health, safety, and building standards are often applied to jails.
- Many States have established mandatory jail standards and inspect jails to measure compliance.
- The American Correctional Association establishes national professional standards for jails and offers an accreditation process based on those standards.



The Staffing Analysis Process

This section describes a step-by-step process for conducting a comprehensive staffing analysis of an existing jail or a new jail. The 10 steps are sequential and break the staffing analysis process into manageable tasks. Each step builds on the preceding steps. The process should always be interactive and creative.

Staffing analysis is not an exact science. No simple formulas or ratios can be consistently applied to all jails. Although some practitioners still advocate simpler approaches to staffing, those approaches are not as responsive to the unique character of each jail as the approach described here.

Although it will take some time to gather the indepth information necessary to complete a thorough analysis, this process has been used with great success in jails throughout the United States. It will take some time to complete the first staffing analysis for a jail, but subsequent updates and revisions will be easier.

The main difference between the approach presented in this workbook and staffing analysis methods that preceded it is that this process quantifies staffing on an hourly basis, rather than on a shift basis. This approach gives all stakeholders more flexibility and encourages creative approaches that may lead to more efficient and effective practices.

Unlike jail practices of 10 years ago, many jails now operate with a variety of shift schedules; a jail may have 8-hour, 10-hour, or 12-hour shifts; overlapping shifts; and “power” shifts. Because of this diversity, the amount of time that each staff person works in a year (or is “off” in a year) should be analyzed in hours. A

day off with pay no longer necessarily means 8 hours off; it could be 10 or 12 hours, and jail administrators must fill that number of hours with other staff. Similarly, the amount of coverage needed for a specific post and for total jail coverage should be analyzed and expressed in hours.

All the forms used in this workbook are based on hours. Exhibit 1 presents the 10 steps in the staffing analysis process and identifies the forms used at different steps. One may enter the 10-step process at several points.

- Those who are conducting the first full analysis of a facility or who are evaluating new facility plans should begin with step 1. Completing the jail profile is an important first step for these users.
- Those who are reevaluating or updating an existing staffing plan may start with step 2, evaluating and updating the figures based on changes that occurred since the last staffing plan was done.

The following material is provided for each of the 10 steps of a comprehensive staffing analysis:

- A brief narrative describing the methodology and process for completing the step.
- Instructions for completing each form.
- A completed sample of each form. (Blank copies of the forms are provided in appendix C.)

Electronic versions of the forms, and instructions for using them, will be available online at the NIC Web site (<http://www.nicic.org>).



EXHIBIT 1: Comprehensive 10-Step Staffing Analysis Process



Step 1 sets the stage for the staffing analysis process by collecting background information about the jail.

Step 2 requires collecting and analyzing key “time off” data that are crucial to the accuracy of the final staffing analysis and implementation plan.

Step 3 develops a master schedule of programs, services, and activities in the jail.

Step 4 is the first attempt to identify the posts and positions that need coverage and the amount of coverage needed.

Step 5 summarizes coverage needs by job classification.

Step 6 posts the coverage needs into various shift schedules and shift rosters.

Step 7 requires a careful evaluation of the initial plan. If the plan is inadequate, return to the appropriate earlier step, make improvements, and continue through the process from that point. Step 7 also allows others to have meaningful input into the staffing analysis process. It is the equalizer that allows anyone to produce a workable staffing plan. After initial deficiencies identified in step 7 are corrected, reevaluate the plan to ensure that corrective measures have not introduced other deficiencies. Repeat this step until the staffing plan is acceptable.

Step 8 requires a reality check of the budget. The estimated cost of staffing shows the impact the draft plan will have on the budget. If this cost is not feasible, another round of evaluations and revisions of the plan must begin.

Step 9 is a detailed report that presents the staffing plan and justifies the needs with data.

Step 10 is the implementation phase. After 6 months, the plan should be evaluated and any necessary changes made.

STEP 1. PROFILE THE JAIL

The first step is to collect jail inmate population data, operational philosophy information (mission statement), floor plans of the facility, operational budgets, State and professional standards, and relevant case law. These materials need to be analyzed to describe the physical, operational, and human context of the jail at the time of the staffing analysis. A detailed profile of the jail setting is an essential starting point in a comprehensive staffing analysis for either a new facility or an existing facility for which a staffing analysis has never been done.

Although it is tempting to skip this step of the process, this information is essential to ensure that the basis for the staffing analysis is clear. The products may be needed later to justify requests to funding sources, or even in court. Subsequent staffing analyses should include reviewing and updating this material.

The profile examines and records key features and characteristics of the jail setting, including—

- Facility rated capacity.
- Average daily population for the past several years.
- Number of admissions and releases.
- Length of stay.
- Inmate profiles (age, race, sex, residence, charge, status—pretrial, presentencing, sentenced, hold).
- Type of charges (traffic, misdemeanor, felony; violent, nonviolent).

- Number and types of classifications and housing separations.
- Mission statement.
- Facility design (floor plan).
- Organizational chart, span of control, management philosophy.
- Current staffing plan, schedule, shift rosters.
- Current staff work-hour information.
- Number and types of critical incidents.
- Personnel agreements, union contracts.
- State and professional standards.
- Applicable court decisions.
- Latest inspection reports.
- Service contracts in effect.
- Problems experienced with facility operations in the past year.
- Issues to be addressed by a staffing analysis.

Collecting, analyzing, and logically arranging this information for presentation will create a clear picture of the current situation and lay the foundation for the staffing analysis. Be sure to document all information gathered. Keep this material for future reference.



STEP 2. CALCULATE NET ANNUAL WORK HOURS

Many staffing issues and problems jails face—such as high overtime costs, the inability to cover needed posts, or the inability to free staff from their posts for training—can be attributed to inaccurate calculation of the actual number of hours staff are available to work in the jail. This critical step requires collecting and analyzing information that will provide an accurate depiction of the real number of staff hours that are available to be scheduled for each full-time position in the jail budget. It produces accurate net annual work hours for each position, replacing the older shift relief factor calculations.

The term “relief factor” or “shift relief factor” (SRF) may be familiar. These terms have traditionally described the number of full-time-equivalent staff (FTE) needed to fill a post or position that is relieved (covered on a continuous basis). For example, a jail might report that the SRF is 1.7 and that for a single 24-hour, 7-day post (24/7), 5.1 staff are needed for coverage. This is another way of saying that it would require 5.1 full-time officers (or FTEs) to be hired to staff the post 24/7. This calculation (5.1) is derived by multiplying the 1.7 times 3, which represents one officer on all three 8-hour shifts in a day for the one post.

SRFs are calculated by dividing the number of days the post needs to be covered by the estimated number of days that a classification of staff is available for work during a typical year. For example, if the post must be continuously filled 365 days a year and a staff person is available to work 220 days, the SRF is 1.66. The relief factor calculation usually considers the basic categories of vacation, holidays, military, funeral, training, and sick days when estimating a staff person’s availability.

Several underlying problems associated with the use of shift relief factors have produced serious shortcomings, which are usually manifest in the jail personnel budget. For example, SRFs may assume that a single shift can be used as the primary unit of measurement,

rather than using the more basic (and flexible) hour unit. Furthermore, SRFs often fail to consider many categories of time off:

- Preservice and inservice training time.
- Long-term medical disability.
- Provisions of the Family and Medical Leave Act of 1993.
- Light-duty assignments required for injured staff.
- Leave without pay.
- Time away from the job while on special assignment.
- Time it takes to fill a vacancy.
- Jury duty.
- Worker’s compensation time off.
- Use of compensatory (comp) time.
- Unexcused absences.

Some relief factors may have other shortcomings that affect their accuracy:

- The calculation was not recently updated.
- Inaccurate or incomplete data were used.
- Separate calculations were not made for distinct job classifications.
- Only time-off allowances from contracts or personnel agreements were used, rather than actual time taken for the past several years.
- Data were examined for only 1 year instead of several years, without considering short-term conditions or long-term trends.

This workbook introduces net annual work hours (NAWH), which replace the SRF. NAWH represents the number of hours staff are actually available to work, based on the contracted number of hours per year (40 hours per workweek × 52.14 weeks per year = 2,086 hours) minus the average number of hours

off per staff person per year. Calculating an accurate NAWH will help control such costs as overtime pay, because realistic and accurate figures will be used to calculate the number of FTEs required to provide needed coverage.

An accurate NAWH for each job classification requires information on all possible time-off categories. Different classifications of employees will have different NAWH, because of the amount of vacation time or training time that is allotted and used.

The staff coverage plan that will be developed in step 4 will need to be translated to FTEs for budgeting and management purposes. To determine how many people are needed to fill each post, it is necessary to calculate how many hours an employee in each job classification is unavailable to be scheduled for regular hours each year in order to calculate how many hours the employee is actually available.

The total number of hours of coverage needed annually for each employee classification (also determined in step 4) is then divided by the NAWH per employee for that classification. This yields the number of staff needed in the job classification. For example, if a post is covered 24/7, or 8,760 hours per year, and a person assigned to the post is available 1,752 hours per year, 5 FTE staff positions will be needed for coverage ($8,760 \div 1,752 = 5.0$).

Instructions for completing form A

Form A (see exhibit 2) provides a format for calculating NAWH for each classification of staff. This form is a revised version of earlier forms that have been applied in correctional and other settings. It uses hours as the basic unit of measure.

Complete a column for every classification of staff for which there is substantial variation in the time employees are unavailable for work, e.g., correctional officer or deputy sheriff, sergeant, or lieutenant.

Civilian positions will also require a separate NAWH column because they may not receive the same amount of training and may have different amounts of vacation or sick leave; other factors may also determine their net available hours.

Some of the basic time-off categories that apply are listed on the form, and blank rows marked “other” are provided to add additional time-off categories that apply at your jail. Complete each line of the form. If an item is not applicable to the jail, enter “NA” and continue. It may be necessary to convert days to hours, as many employee contracts are based on days (days off, training days, etc.). Usually 1 day will equal 8 hours; however, if the facility operates on other than a standard 40-hour week, remember to adjust calculations accordingly. For example, a 43-hour contract week would yield an 8.6-hour day.

It is best to collect at least 3 years of data to develop the average time taken off in each category.

Record the NAWH calculations in the appropriate column on the staff coverage plan (form C) in step 4.

Note: Data may not be readily available for each time-off category that applies. Do not dismiss the category as minor or insignificant. Staff time away from scheduled work adds up quickly, and the larger the facility, the greater the budget shortfall will be if you do not have complete and accurate data. Collect all of the data that are needed, no matter how difficult. Set up new protocols to ensure that the data will continue to be collected and will be available when it is time to update NAWH calculations. The value of the NAWH calculations depends on the accuracy and thoroughness of the research that went into the calculations.

It is easy to convert NAWH to SRF for comparison to previous relief factor figures. Appendix D describes a simple formula for making the conversion.

EXHIBIT 2: Sample Form A—Calculating Net Annual Work Hours

Steps	Job Classification				
	Captain	Lieutenant	Sergeant	Deputy Sheriff	Civilian
1. Total hours contracted per employee per year (if a regular workweek is 40 hours, then 40 (52.14 weeks = 2,086)	2,086	2,086	2,086	2,086	2,086
2. Average number of vacation hours per employee per year	111	168	161	160	108
3. Average number of compensatory hours off per employee per year	179	36	55	37	71
4. Average number of sick leave hours off per employee per year	59	88	74	89	98
5. Average number of training hours off per employee per year	24	24	40	40	24
6. Average number of personal hours off per employee per year	6	9	5	3	3
7. Average number of military hours off per employee per year	0	0	7	4	0
8. Average number of break hours off per employee year (optional; it may be a contractual item)	—	—	—	—	—
9. Other: [Specify.]					
10. Other: [Specify.]					
11. Other: [Specify.]					
12. Other: [Specify.]					
13. Total hours off per employee per year [total lines 2 through 12]	379	325	342	333	304
14. Net annual work hours [subtract line 13 from line 1]	1,707	1,761	1,744	1,753	1,782

STEP 3. DEVELOP A FACILITY ACTIVITY SCHEDULE

This step involves identifying all the programs, activities, support services, and security functions that take place intermittently in the jail and charting the times they occur over the course of a typical week (7 days). This step does not record continuous activities, such as supervising inmates or booking and releasing inmates, which will be examined in step 4.

Instructions for completing form B

The facility activity schedule (form B, see exhibit 3) displays a typical 1-week period of jail operations. A completed sample follows these instructions. Blank forms are provided in appendix C.

Form B encourages the examination of daily and weekly operations of the jail. If operations and activities on weekends vary significantly from those on weekdays, complete two separate schedules: one for Monday through Friday, and one for Saturday and Sunday. Another option is to note on form B the days on which each activity occurs.

In the left column, record specific activities, tasks, or operations that occur at least once each week. Consider the following list as a starting point. It contains some of the activities that may affect operations enough to merit inclusion on the form.

- Shift change.
- Formal counts or lockdowns.
- Meal service.
- Visiting (public or attorney).
- Sick call.
- Clinic times.
- Administering medications.
- Court appearances.
- Commissary.
- Outdoor exercise.
- Education classes.
- Counseling sessions.

- Library hours.
- Religious services.
- Laundry exchange.
- Inmate transports.
- Inmate work activities.

After recording all relevant activities on the form, enter the actual times and duration for each activity in the next column. Activities that take only a few minutes will look different than longer activities. For example, inmate counts might be recorded as points in time at 0600, 1400, and 2200, and visiting might be recorded as a block of time from 1300 to 1600.

For each activity, shade in the appropriate timeframes on the form, corresponding to the usual scheduling of the activity. (If you are using a computerized spreadsheet, this is usually done by creating a box from the drawing toolbar and dragging it to cover the corresponding time period.) If the activity is not a daily occurrence, enter a note in the boxes to indicate the days on which it occurs.

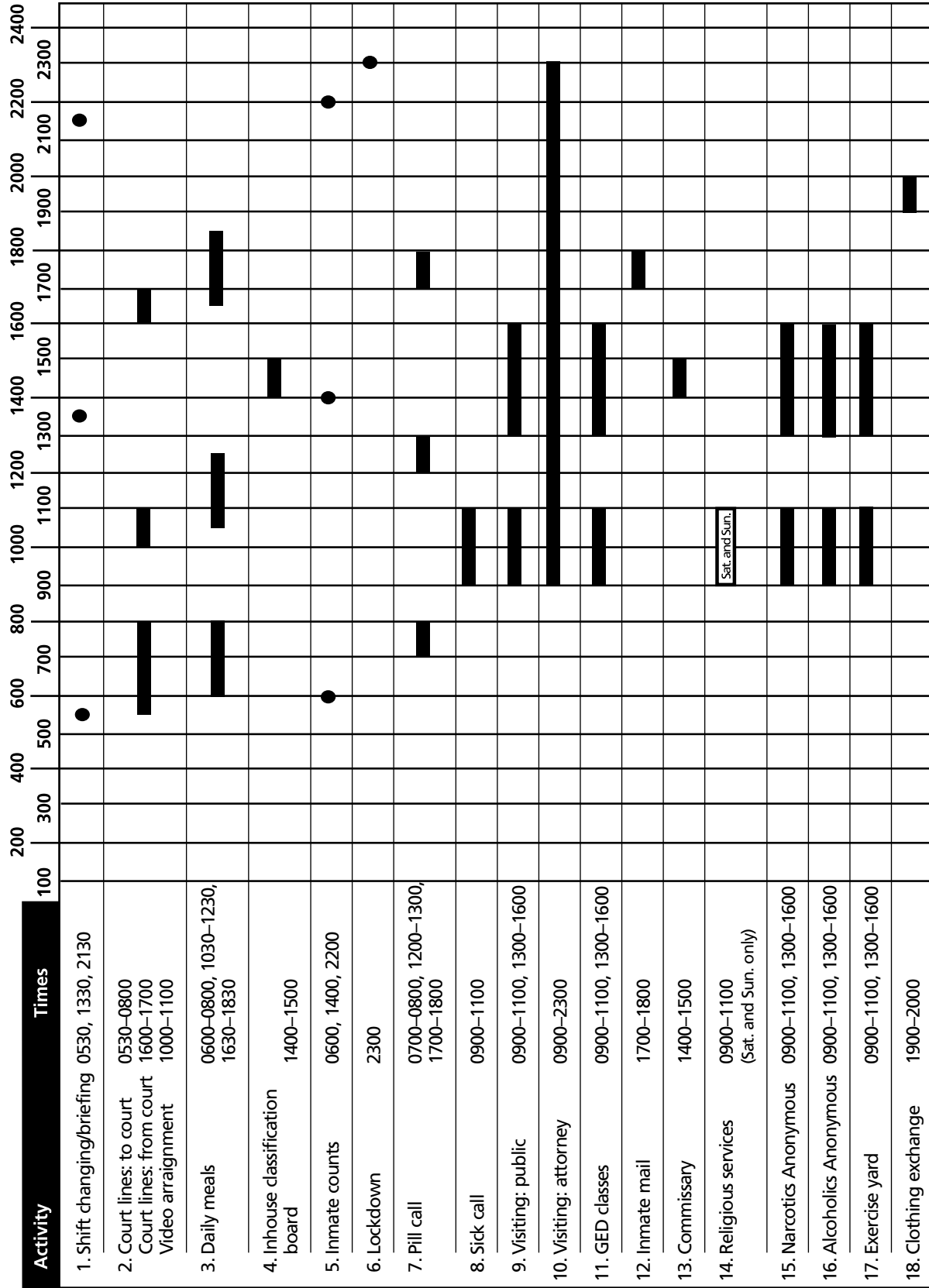
When the form is completed, examine it carefully. Look for periods of high activity. Read down the columns that represent the time of day. Focus on times and days that are unusually busy and those that are very light. Determine if the weekly schedule needs to be revised to redistribute activities from busy times to slower times.

Usually, important facility schedule improvements are identified at this early stage of the process. Several types of improvements may present themselves, such as rescheduling certain activities to level out peak periods during the week or changing policies and procedures.

The staffing implications of these decisions will become apparent in step 4, when the staff coverage plan is developed. At that time, the facility activity schedule may need to be revised again if corresponding staff demands are too high during certain times.

Revise the facility activity schedule as needed at this point; then continue to the next step in the staffing analysis process.

EXHIBIT 3: Sample Form B—Facility Activity Schedule



Note: Activities occur Monday through Friday, unless otherwise noted.
● Indicates a time-specific activity.

STEP 4. DEVELOP THE STAFF COVERAGE PLAN

Now begin developing a staff coverage plan, using the profile of the jail, including the operational philosophy and the floor plan of the facility (step 1); the NAWH calculations (step 2); and the facility activity schedule (step 3). The objective is to determine both the minimum coverage needed for staff and inmate safety, based on the fixed posts that are identified, and the proper coverage for intermittent activities that occur in the jail. Before starting the staff coverage plan (form C, see exhibit 4), determine what the primary shift schedule will be. Changing the current shift schedule may not be desirable or even possible because of employee contracts. Note that a staff coverage plan is not the same as a shift roster. A shift roster assigns individual employees to specific shifts.

It will be easier to complete form C if you start with a simple list of all the posts and positions in the jail and the hours of coverage each needs. Complete form C based on the primary shift schedule and evaluate it according to your facility activities schedule. Then experiment with other shift schedules that might provide better, more efficient coverage. (This is discussed further in step 6.) If analyzing an existing facility, list all of the posts and positions that are currently filled and evaluate them in terms of the level of supervision, staff and inmate safety, coverage of activities, span of control, and demands for overtime. A new facility may present more opportunities to experiment. In many cases, higher staffing levels should be considered to provide safer or smoother operations, to reduce the use of overtime, or to address specific problems. The number of staff needed during a 24-hour period varies based on the programs, services, and activities that are occurring.

Instructions for completing form C

Each column must be completed to calculate the FTEs needed for each portion.

Column A. List each post and position needed in the jail.

Column B. Identify the job classification needed to fill each post and position. Does it require sworn staff, or can civilian staff be used? What are the pros and cons of using sworn staff for each post and for the jail as a whole?

Column C. Determine if meal and break relief is required. (Does another staff person need to cover the post while the person assigned to the post gets a break, or can the post go uncovered?)

Columns D–J. Identify the number of hours of coverage needed for each post and position in a 24-hour period. If more than one post is needed, indicate this by entering “16” (for two posts on an 8-hour shift pattern) or “24” (for three posts on an 8-hour shift pattern) in columns D, E, and F. Use the columns that represent the current shift pattern (8-, 10-, or 12-hour, or other).

Column K. Identify the number of days per week the post or position must be covered.

Column L. Calculate the number of hours per week it must be covered (number of hours per day x number of days per week).

Column M. Calculate the number of hours of coverage needed for each post and position per year (number of hours per week x 52.14 weeks in a year).

Column N. Determine if each post and position is relieved. (Remember that some positions are not relieved, such as the administrator.)

Column O. Record the appropriate NAWH calculated in step 2 for each post and position.

Column P. Divide the number of hours of coverage needed per year (column M) by the NAWH for that job classification (column O) to obtain the total number of FTEs needed to fill the post for a year.



EXHIBIT 4: Sample Form C—Staff Coverage Plan

A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q
	Job Class	Meal Relief?	Total Hours on Days	Total Hours on Nights	Total Hours on Graves	12-hr. Day	12-hr. Night	Other hours	Other hours	No. of Days per Week	No. of Hours per Week	No. of Hours of Coverage per Year	Is Relief Needed for This Post?	Net Annual Work Hours	Total No. of FTEs Needed	Rounded No. of FTEs
CAPTAIN	Cpt	No	8	0	0					5	40	2,086	No	1,707	1.22	1
LIEUTENANT																
Assistant Jail Comm.	Lt	No	0	8	0					5	40	2,086	No	1,761	1.18	
Subtotal Lieutenants			8	8	0					40	40	2,086		1,761	1.18	1
SERGEANT																
Shift Commanders	Sgt	No	8	8	8					7	168	8,760	Yes	1,744	5.02	
Subtotal Sergeants			8	8	8					168	168	8,760		1,744	5.02	5
DEPUTY SHERIFF																
Pod 1 - Control Officer	Dep	Yes	8	8	8					7	168	8,760	Yes	1,753	5.00	
Pod 1 - Floor Officer	Dep	Yes	8	8	0					7	112	5,840	Yes	1,753	3.33	
Pod 2 - Direct Super.	Dep	Yes	8	8	8					7	168	8,760	Yes	1,753	5.00	
Booking Officer	Dep	No	16	16	16					7	336	17,519	Yes	1,753	9.99	
Central Control	Dep	Yes	8	8	8					7	168	8,760	Yes	1,753	5.00	
Roving Officers	Dep	No	16	16	16					7	336	17,519	Yes	1,753	9.99	
Subtotal Deputies			64	64	56					1,288	67,158			1,753	38.31	38
CIVILIAN																
Secretary/Receptionist		No	8	8	0					7	112	5,840	Yes	1,782	3.28	3
Cook		No	8	8	0					7	112	5,840	Yes	1,782	3.28	3
Nurse		No	8	8	8					7	168	8,760	Yes	1,782	4.92	5
Maintenance		No	8	0	0					7	56	2,920	No	1,782	1.64	1
Subtotal Civilians			32	24	8					448	23,360			1,782	13.11	12
TOTAL STAFF			112	104	72					1,984	103,450				58.85	57

FTE= Full-time equivalent staff

Column Q. Round the total number of staff needed, per year, by job classification. Remember, if you round down, you may need to use overtime to provide complete coverage.

During this stage of the process, several types of improvements and innovations may present themselves, including—

- Rescheduling certain activities to level out peak periods of events during the week (see form B).
- Changing policies and procedures.
- Combining or separating duties to create different posts or positions.

Explore these and other ideas as they present themselves. If they are feasible and will be implemented, the staff coverage plan and subsequent analyses should reflect them. Be sure to document these changes as they are made.

Developing an initial staff coverage plan is a trial-and-error process, so be patient and persistent.

STEP 5. COMPLETE A STAFF SUMMARY

This step summarizes the number of staff needed for each distinct job classification, based on the coverage plan developed in step 4 on form C.

The staff summary (form D, see exhibit 5) describes by job classification the information already calculated on the staff coverage plan (form C). No new information is presented on this form.

Instructions for completing form D

Space is provided to record the following for each classification of staff:

- Annual number of coverage hours.
- Total number of FTE staff needed, as calculated.
- Total number of FTE staff needed, as rounded.

Column A. Each line of this form should represent a distinct classification of jail employee (e.g., deputy

sheriff, sergeant, lieutenant, civilian). Use the classifications previously used in column B on form C.

Column B. Record the total number of hours per year, per job classification, from column M on form C.

Column C. This column represents the number of full-time staff required to provide the actual hours of coverage in the staff coverage plan (column P on form C).

Column D. Using this column is optional. It allows you to record a number for FTE staff needed by job classification, rounded to the nearest whole number. Using the nonrounded figures may require either the use of some part-time staff or the assignment of full-time staff to work extra hours to meet the odd fraction of FTE needs. If these options are not practical or desirable, use a rounded number (see column Q on form C).

EXHIBIT 5: Sample Form D—Staff Summary Sheet

A	B	C	D
	Annual Number of Coverage Hours (Form C, Column M)	Total FTE Staff Needed, as Calculated (Form C, Column P)	Total FTE Staff Needed, Rounded (Form C, Column Q)
CAPTAIN	2,086	1.22	1
LIEUTENANT	2,086	1.18	1
SERGEANT	8,760	5.02	5
DEPUTY SHERIFF	67,158	38.31	38
CIVILIAN Secretary/Receptionist	5,840	3.28	3
Cook	5,840	3.28	3
Nurse	8,760	4.92	5
Maintenance	2,920	1.64	1
TOTAL	103,450	58.85	57

FTE= Full-time equivalent staff

STEP 6. DEVELOP A SCHEDULE

Use the staff coverage plan to develop an approach to staffing the facility that efficiently meets coverage needs. Scheduling staff has been separated from determining coverage needs because substantial creative effort is needed to develop an efficient and reasonable schedule. It may help to view scheduling as a means to an end: A good schedule will deploy employees in an efficient way to meet coverage needs and will enhance employee morale, job satisfaction, and job performance.

Creating a schedule

Scheduling requires decisions about when individual staff will work. Staff scheduling usually follows two basic cycles—7 days (traditional) and 6 days (4 days on, 2 days off). F. Warren Benton provides a more expansive treatment of organizational issues and approaches in *Planning and Evaluating Jail and Prison Staffing* (Washington, D.C.: U.S. Department of Justice, National Institute of Corrections, 1981). The standard approach to shift patterns is a 7-day pattern, with three 8-hour shifts each day. Benton describes five additional approaches:

- Four days, 10-hour shifts (4/10).
- Flextime.
- Shift assignment variation.
- Part-time employment.
- Split shifts.

Many jails use one or more of these approaches with success. The 4/10 pattern may work for an officer assigned to supervise an 8-hour inmate work crew; a 10-hour shift allows time to set up and wrap up each day. Flextime does not work well for posts that require continuity, such as a control center, but may prove productive for certain positions with varying hours, such as counselors and assistant administrators.

Many jurisdictions have adopted two 12-hour shifts with varying degrees of success and satisfaction. Although it may initially appear that fewer staff are

needed to provide coverage, this is not true. Whether deploying staff for 8- or 12-hour shifts, the same number of staff hours is needed for complete coverage. A 12-hour shift configuration may seem less demanding because staff are scheduled for fewer shifts, but the overall math—and corresponding costs—will not change.

Some jurisdictions moved to 12-hour shifts in response to chronic problems with scheduling staff for 8-hour shifts. Shortages prompted mandatory assignment of staff to extra shifts, often resulting in a 16-hour workday when a staff member was required to work two consecutive shifts. Staff often support 12-hour shifts because they eliminate the option of working two consecutive shifts. When considering 12-hour shifts, administrators must weigh all of the issues and should involve staff in the decision process.

Shift patterns have become more important in light of the U.S. Supreme Court decision in *Garcia v. San Antonio Metropolitan Transit Authority* (105 S.Ct. 1005 (1985)). In this decision, a divided court overturned an earlier ruling in *National League of Cities v. Usery* (426 U.S. 833 (1976)), which exempted most traditional local government activities from the requirements of the Fair Labor Standards Act. The immediate result for many jails was the restructuring of schedules to avoid paying mandatory overtime. In November 1985, Congress passed Public Law 99-150, which eased the impact of *Garcia*, allowing compensatory time to be awarded as an option but requiring it to be given at the rate of 1.5 hours per 1 hour worked.

Many jails have explored shift assignment variations and have found that rotating assignments too frequently (more often than every 2 or 3 months) is not successful because staff have difficulty adapting to new hours. They have also found that flexibility in assigning shifts offers a good management tool.

Many jails hire part-time employees. Part-time staff can be effective in the right situation, but they are often used inappropriately to reduce costs (because

they usually receive a lower base wage and often do not receive benefits). As a rule, using part-time staff for routine shift assignment should be avoided. Part-time staff *can* appropriately be used to fill in for regular staff when full-time staff are not available or to meet needs that do not rise to a full shift level. Some jobs lend themselves to part-time staff, such as assistant cooks or program staff. Split-shift assignment is often used successfully for jobs that are routinely discontinuous, such as cooks (who break after lunch until dinner preparation begins).

Shift pattern variations are virtually limitless. One source of many examples is *The Manager's Guide to Alternative Work Schedules—Second Edition*, by W.L. Booth. (It is available on loan from the NIC Information Center, or a copy may be purchased from the publisher: Institute of Police Technology and Management, University of North Florida, 12000 Alumni Drive, Jacksonville, FL 32224–2678; <http://iptm.org>).

Using different work schedules

Because a jail is such a complex organization and staffing needs are often unique, adopting varied work schedules may be effective. Changing work schedules can be emotional and initially difficult, but it may result in certain benefits:

- Improved staff morale as job satisfaction increases.
- Less turnover, less sick time, and improved quality and quantity of work.
- Financial savings due to the efficient use of staff.

Exhibit 6, a chart drawn from *The Manager's Guide to Alternative Work Schedules*, summarizes the descriptive statistics for 21 different alternative schedules and allows comparison of the features of each schedule. The chart depicts work schedules that range from 8- to 12-hour days. Such scheduling approaches as split shifts and flextime are not included on the chart, as they do not lend themselves to this type of analysis.

Evaluating alternative work schedules

When considering alternative work schedules, several factors should be weighed. Benefits and costs are often traded off as decisions are made.

- **Hours of operation and timeframes.** While many jail functions operate 24 hours per day, others may have substantially shorter hours (visiting areas, public reception, etc.). Examine each function of the jail to find out if different work schedules would be effective.
- **Days operated each week.** Many jail operations continue 7 days per week, but others may vary. For instance, a jail may operate an industry or work program that closes on weekends. Scheduling staff for these functions might require alternative approaches.
- **Objectives of the organization.** The goals and objectives of the jail may suggest appropriate scheduling. If the jail places a high priority on inmate visiting, visiting hours might be scheduled at the convenience of visitors, rather than staff. As a result, work schedules might change.
- **Levels of activity.** Different components of the jail might require more intense staffing. For example, maximum-security inmates are more difficult to supervise during outdoor recreation, suggesting the need for additional staff. A creative staffing plan might provide more staff for that function through overlapping shifts.
- **Employee contracts and labor laws.** Any potential change in work schedules must be evaluated in light of existing contracts and laws. Involving labor representatives and legal counsel early in the process is advisable.
- **Staff training.** If it is difficult to provide inservice training for staff, alternative schedules (such as overlapping shifts) may create new opportunities for this key activity.
- **Fatigue and productivity.** Research indicates that longer work days decrease productivity, but that corresponding shorter workweeks may offset fatigue. Alternative work schedules must be carefully weighed to ensure that staff are not overtired and less able to perform critical duties.
- **Scheduling for different positions.** Some new jobs created in the jail may be amenable to, or even require, alternative scheduling.

The decision to implement alternative work schedules will ultimately hinge on the assessment of their feasibility and on whether the changes can be implemented without too much disruption or negative reaction. The rewards for creative use of alternative work schedules are often great enough to overcome most potential logistical problems.

EXHIBIT 6: Descriptive Statistics for Alternative Work Schedules

Shift Schedule	8-Hour Workday					10-Hour Workday					12-Hour Workday				
	5-2	5-2 variable	3-2 7-2 5-2	6-2	6-2 6-3	7-2 7-3	4-3 3-4	4-2 4-3	5-3 5-4	6-4	3-3	4-4	5-5	7-7	
Consecutive Time Required	8	5	8	8	6	8	7	10	10	10	12	12	12	12	
Hours per Day	8	5	3, 7, 5	8	6	8	7	10	10	10	12	12	12	12	
Days per Week	5	5	3, 7, 5	6	6	7	4	4	5	6	3	4	5	7	
Workdays and Offdays Cycle	5-2	5-2	3-2	6-2	6-2	7-2	4-3	4-2	5-3	6-4	3-3	4-4	5-5	7-7	
1st Shift	5-2	5-2	3-2	6-2	6-2	7-2	4-3	4-2	5-3	6-4	3-3	4-4	5-5	7-7	
2nd Shift	5-2	5-2	7-2	6-2	6-2	7-2	4-3	4-3	5-3	6-4	3-3	4-4	5-5	7-7	
3rd Shift	5-2	5-2	5-2	6-2	6-2	7-3	4-3	4-3	5-4	6-4	None	None	None	None	
Schedule Work Cycle	21	17:33	21	24	15:17	28	13:00	21	25	30	12	16	20	28	
Days per Cycle	17:33	17:33	17:33	15:17	14:56	13:00	17:33	17:33	14:56	12:13	30:33	22:75	18:20	13:00	
Cycles per Year	17:33	17:33	17:33	15:17	14:56	13:00	17:33	17:33	14:56	12:13	30:33	22:75	18:20	13:00	
Number of Workdays	5	15	3, 7, 5	6	18	7	4	4	5	6	3	4	5	7	
Per Shift	5	15	3, 7, 5	6	18	7	4	4	5	6	3	4	5	7	
Per Cycle	260	260	260	273	262	273	208	218	218	218	182	182	182	182	
Annually	260	260	260	273	262	273	208	218	218	218	182	182	182	182	
Number of Offdays	2	6	2	2	7	2 or 3	3	2 or 3	4	3	4	5	7	7	
Per Shift	2	6	2	2	7	2 or 3	3	2 or 3	4	3	4	5	7	7	
Per Cycle	104	104	104	91	102	91	156	146	146	146	182	182	182	182	
Annually	104	104	104	91	102	91	156	146	146	146	182	182	182	182	
Weekends Off Annually	52	0	34	6	14	14	52	10	16	14	16	18	20	26	
Full	0-26	0-26	0	14	14	0	0	18	12	10	18	12	10	0	
Partial	0	0	0	14	14	0	0	18	12	10	18	12	10	0	
Number of Other Offdays	9	12	9	9	12	9	7.2	7.2	7.2	7.2	6	6	6	6	
Holidays	9	12	9	9	12	9	7.2	7.2	7.2	7.2	6	6	6	6	
Vacation	12	0	12	12	13	12	9.6	9.6	9.6	9.6	8	8	8	8	
Compensatory	0	0	0	13	2	13	0	10	10	10	9	9	9	9	
Workdays x Hours	260	260	260	273	262	273	208	218	218	218	182	182	182	182	
= TOTAL	2,080	2,080	2,080	2,184	2,096	2,184	2,080	2,180	2,180	2,180	2,184	2,184	2,184	2,184	

Note: The following definitions apply to terms used in this table:
 Compensatory time: Reflects time earned (as enhanced pay or as time off) for work that exceeds the normal workweek.
 Cycle: The total of calendar days necessary for one staff member to rotate through three shifts.
 Holidays: Nine 8-hour days per year.
 Vacation: Twelve 8-hour days per year.

Source: Booth, W.L. *The Manager's Guide to Alternative Work Schedules—Second Edition*. Institute of Police Technology and Management, University of North Florida, Jacksonville, 1989.

STEP 7. EVALUATE, REVISE, AND IMPROVE THE PLAN

After an initial staffing plan has been developed, it must be reviewed and evaluated to determine whether it meets the needs of the jail and is achievable, affordable, and sustainable. The evaluation process is also critical to develop support for implementing the staffing plan. Consider assembling a brainstorming team to improve the initial plan. Involve as many stakeholders as possible, put all the deficiencies on the table, and start the discussions. Remember—people are more likely to support a plan that they helped create.

In many ways, the staffing analysis process requires a trial-and-error approach that tests various operational changes, organizational structures, assignment schemes, and schedules. The evaluation process identifies problems or deficiencies with the initial staffing plan; it will then be necessary to return to previous steps. Responding to identified deficiencies often demands a wider range of changes than simply allocating more staff. Staffing and operating a jail require creativity, and imaginative solutions to problems are essential.

As described in appendix A, creative approaches can include the following:

- Reallocate existing personnel.
- Alter facility design.
- Adjust the facility activities schedule.
- Reduce services and programs.
- Alter operations and philosophy.

- Use audio or video surveillance equipment.
- Use volunteers or interns.
- Use civilian staff.
- Use contractual services.
- Improve productivity of existing personnel.
- Provide more staff training and cross-train staff.
- Change job descriptions and task assignments.
- Revise hiring practices.
- Streamline practices, policies, and procedures.
- Reduce or modify inmate populations.
- Use inmate labor.
- Consider lessening “absolute” separations between inmates.

Record all changes made during this process, including changes in the jail setting (operations, facility). This will leave important “tracks” that will be helpful later in the process and in subsequent reviews. Be cautious, as the changes made in response to a deficiency may create other problems. Evaluate revised plans thoroughly. Use the results of secondary evaluations to guide further revisions. Continue with the evaluate-revise-evaluate loop until an evaluation of the staffing plan yields satisfactory results for every jail component. Then it will be time to move on to the next step in the process.

STEP 8. CALCULATE OPERATIONAL COSTS

When analyzing an existing jail, costs for any changes to the existing staffing plan need to be calculated. The impact of these changes on the use of overtime must also be evaluated. Staffing costs can represent between 70 percent and 80 percent of the overall operating costs of the jail. Using current budget figures for staff salaries, develop an estimated budget based on the staffing plan changes that are being considered.

The operational costs for a new jail will need to be developed from the ground up. Reviewing the bud-

ets of existing jail facilities may be helpful. Start with the staff summary (form D). Calculate the annual salary and benefits for each job classification and then multiply that sum by the number of staff needed in each job classification. Total all of the salaries. If present personnel costs equal about 70 percent of the total operational budget, then add 30 percent for other operating costs (including facility maintenance, utilities, and inmate care). This figure is a ballpark number and can be refined after the first year of operation.



STEP 9. PREPARE A REPORT

A report must be developed that justifies all aspects of the proposed staffing plan. The report should be easy to follow and include all of the completed forms, along with a narrative explanation of their meaning. The content and organization of the report should be appropriate for the audience for which it is intended. Some audiences want to see only the bottom line (how much will it cost?). Others want to examine all of the decisions and calculations. Assemble a complete copy of all final materials, in successive order. Providing too little detail is usually a mistake. Even if some decisionmakers are not interested in the nuts and bolts, it is important to provide an indication of the comprehensive process used to develop the staffing plan.

The outline in exhibit 7 provides one approach to preparing a comprehensive staffing analysis report. Assembling this report should be easy because it draws from the work and forms that have already been completed. Adapt the outline as needed to meet the needs of the audience for your report. Additional materials, such as data collection sheets, may be attached as appendixes as needed.

EXHIBIT 7: Sample Outline for a Staffing Analysis Report

Letter of Transmittal

Executive Summary

Table of Contents

I. Introduction

- A. Purpose of Report
- B. Reasons for Conducting Analysis

II. Staffing Analysis Methodology

- A. Jail Characteristics and Issues
- B. Staffing Analysis Concepts
- C. Major Staffing Issues Explored [Customize this list.]
 - 1. Overtime Usage
 - 2. Net Annual Work Hours
 - 3. Vacancy Rate
 - 4. Lack of Meal Relief
 - 5. Special Assignment Posts
 - 6. Impact of Overcrowding [Include the current average daily population.]
 - 7. Physical Plant Impact on Staffing
 - 8. Higher Security Inmates
 - 9. More Transports Required
 - 10. Lack of Training Time
 - 11. Lack of Mid-Management Supervision

III. Summary of Findings

- A. Profile of the Jail [Include trends in average daily population, length of stay, and admissions.]
- B. Facility Activity Schedule
- C. Net Annual Work Hours
- D. Staff Coverage Plan
- E. Staff Coverage Plan's Impact on Identified Issues
- F. Staffing Needs
- G. Operational Costs

IV. Recommendations and Implementation Plan

- A. Recommendations
- B. Implementing the Staffing Plan

Appendixes

STEP 10. IMPLEMENT THE PLAN AND MONITOR THE RESULTS

Implementation will be much easier if staff are involved in the analysis. Staff should be fully aware of the changes and the underlying reasons for them before changes are implemented. Once implemented, the staffing plan should be continuously monitored; it should be evaluated in approximately 6 months to determine its effectiveness.

When problems are identified, it will be necessary to revise the plan. When making revisions, remember that the process that produced the plan reflects the complexity of jail operations; carefully assess the impact of any proposed change on the rest of the plan.

Revising the staffing analysis and plan will also be necessary when significant changes occur in the context of the jail (physical plant, population levels, employee contracts, etc.). Revisions may be made efficiently by using the initial analysis. Before changing staff assignments and scheduling, review relevant employee contracts to ensure that the changes do not violate any provisions. If problems arise, a cooperative effort should resolve them.

Review the plan periodically. Conduct a thorough review and update NAWH calculations annually (at least) to correspond with the budgeting cycle of the facility.

Glossary

Full-time equivalent (FTE)—A term used to translate staffing needs into the number of full-time staff members needed to fill the required hours. FTE calculations consider the net amount of time a full-time staff member is available (*net annual work hours*) after time away from the job (e.g., vacation, sick leave, holidays, training time) is subtracted.

Job description—A detailed statement of the duties and responsibilities associated with a discrete job classification in the facility, but not necessarily tied to a specific post or shift (e.g., corrections officer, control room officer).

Net annual work hours—A calculation of the number of hours staff are available to work, based on the contracted number hours per year minus the number of hours off per staff person per year.

Overlapping shift—A *shift* that extends into one or two regular shifts to provide an overlap in coverage. For example, a shift supervisor might have a 9-hour shift, which begins a half-hour before a regular 8-hour shift and ends a half-hour into the following shift.

Position—A job not filled by any other staff member when the person holding the position is not on duty (e.g., secretary, classification officer, assistant jail administrator). A position has tasks that can usually be deferred until the staff member is available. Continuous coverage usually distinguishes a post from a position; a post has tasks that cannot usually be deferred.

Position description—A detailed statement of the responsibilities and duties associated with a particular position in the facility. Also called a *job description*, although used differently here.

Post—A job defined by its location, time, and duties that can be filled interchangeably by different staff

members. Continuous coverage usually distinguishes a post from a *position*; a post has tasks that cannot usually be deferred.

Power shift—A shift that overlaps other shifts or is substantially different from regular facility shifts. For example, an intake officer might be assigned to work from 8 p.m. to 4 a.m. on weekends to coincide with peak periods of admission.

Shift—A defined, recurring period of time to which staff are assigned to work.

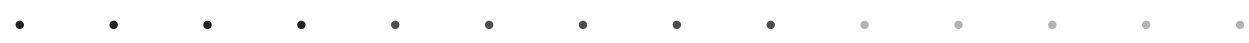
Staffing analysis—A comprehensive and systematic process of determining staff needs (in response to changes in the facility’s philosophy, operations, or physical plant) and developing staff assignment patterns for the facility.

Staffing plan—A detailed schedule on which classifications of staff are assigned to *posts* and *positions* within the facility. A staffing plan meets coverage needs consistent with local practices.

Standards—A broad term encompassing mandatory and voluntary operating conditions for a jail. National, State, and local standards provide important guidelines for developing and evaluating *staffing plans*.

Supervision of inmates—Staff activities that involve direct, barrier-free contact with inmates, including conversing and interacting directly with them. Good supervision allows staff to sense inmate moods, anticipate problems, and prevent future problems.

Surveillance of inmates—Staff activities that include observing or monitoring inmate behavior, often through glass barriers or by using audio or visual equipment. For example, an officer may view a housing area or dayroom from an enclosed control station or through a closed-circuit television monitor.



Appendix A. Methods of Optimizing Staff Resources

Staffing is the most expensive component of any jail budget. Although there are times when more staff positions must be added to the jail budget, there are also many creative ways to optimize the effectiveness and productivity of existing staff. The following pages outline some strategies that jails have found useful, under six categories:

- Manage staff time off and overtime.
- Improve staff hiring and retention practices.
- Employ creative administrative and management practices.
- Change operations and programs.
- Change the facility.
- Consider using technology.

These categories quickly identify the range of strategies available to managers and administrators. For each of the elements in the following pages, additional resources are available through the NIC Information Center.

MANAGE STAFF TIME OFF AND OVERTIME

Manage sick leave

When staff call in sick, administrators scramble to find staff to cover shifts and often need to approve overtime. By definition, sick time is usually difficult to predict, but close monitoring of sick leave practices and patterns may yield information that will help to anticipate needs and, in some instances, to identify specific staff members who present special challenges. Documenting sick leave activities builds an important foundation for analysis and informed action. In addition to simply logging the times that staff are out sick, it may be helpful to document additional information, such as the amount of notice that is given.

Some jurisdictions have found that the use of sick leave is substantially reduced when staff have an incentive not to use sick time. Usually this involves offering staff compensation for all, or part, of any sick time that is not used. Because some staff view sick time as a benefit to which they are entitled, they may be calling in sick when in fact they are just trying to “use it or lose it.” Providing other alternatives may significantly reduce the scheduling problems caused by sick leave.

Manage overtime

When full-time staff are asked to work beyond their regularly scheduled workweek, overtime costs are incurred. These costs represent at least a 50-percent premium above the base pay levels of staff—in the form of either a higher wage paid as overtime or an increased amount of paid time off.

In some jails, staff routinely work overtime, and some employees rely on the extra income it generates. For the jail budget, however, overtime can be a disaster. It is inevitable that some overtime will be required to operate the jail, but there are ways to regain control of the amount of overtime incurred.

The starting point for any effort to better manage overtime is collecting and analyzing data about current practices. Information about the circumstances that prompted some overtime demands may be sketchy or even nonexistent, prompting implementation of better overtime reporting practices. Without solid data about the circumstances that prompted the need for overtime and the steps that were taken to explore alternatives, efforts to improve overtime management will be frustrated.

In most cases, the decision to incur an overtime cost requires the specific authorization of a supervisory or

administrative staff member. Individual staff members rarely have the authority to authorize themselves to incur overtime costs. This offers a point of inquiry and intervention for jail managers. Examine your practices regarding the authorization of staff overtime.

- Who is authorized to make the decision?
- What steps (if any) are they required to take before authorizing overtime?
- What alternatives (if any) must be considered?
- What justification is required?

Consider each of these practices and consider tightening up the process. Perhaps fewer persons should be authorized to make overtime decisions, or a list of specific alternatives should be exhausted before overtime is authorized. At the very least, you will probably want to require clearer and more compelling justification for overtime.

As you analyze overtime practices, you may identify clear patterns, such as circumstances under which overtime is frequently incurred. List the situations that most often result in the use of overtime. Then list specific alternatives that should be considered instead of using overtime. These might include establishing a policy on critical staffing levels, below which staffing levels may not fall. It may turn out that not every position or post of every shift is critical enough to warrant overtime, but this decision should be set by policy, not left to discretion. Also, rather than assuming that the jail will continue to operate without changes, consider whether certain noncritical activities may be deferred or suspended in response to temporary staff shortfalls. Rather than automatically filling a vacant staff position on a shift, consider whether jail operations can safely and appropriately be adjusted instead. As you sharpen your analytical skills, you can even develop a matrix or decision tree that anticipates the majority of overtime situations and identifies specific alternatives to be explored before authorizing overtime.

Minimize special assignment posts

Jail administrators often create posts for special assignments. These assignments are for tasks that

need to be accomplished but have no funded position in the budget. Special assignments can range from staffing a new program in the middle of a budget cycle to assigning a staff person to coordinate early releases. Other assignments include providing special training, conducting research and planning, monitoring a new construction project, or working on a transition team. If staffing levels are at a critical low point and excessive overtime is being expended, it may be necessary to suspend special assignment posts until staffing levels have increased.

Help staff with childcare needs

Many jail staff struggle with providing care for their young children. Unscheduled absences from duty to stay with a sick child or with a child whose sitter has become unavailable contribute to the last-minute problems of filling empty shifts.

The private sector has found that staff attendance, productivity, and morale can be dramatically improved when childcare assistance is provided to parents. This may range from providing daycare services onsite to having an agreement with a provider who will take sick children on an as-needed basis.

Analyze staff absentee experience related to childcare. Talk to or survey staff about their childcare problems and needs. Work with staff and the community to develop alternatives that meet the needs of staff and their children.

Distribute regular days off evenly

Staff often take time off to attend functions that occur on the weekends or to spend time with family members who are off only on weekends. If staff do not get any weekends off on their regular schedule, they tend to take them anyway, creating a need for overtime. When weekend days off are evenly distributed in the regular schedule, staff are less likely to use sick time and other methods to secure weekend days off.

Plan and schedule leave better

Jail administrators have the authority, consistent with the terms of employee contracts, to establish procedures to govern the scheduling of staff leave. Some



jurisdictions have found that carefully fashioned procedures can produce more even distribution of scheduled leave—by shift, by day, and by week. Procedures may also limit the number of staff who are allowed to schedule leave at the same time on each shift. Any changes in practices and policies must be carefully considered and should be based on research and common sense. Seeking staff input into potential changes and working closely with their collective bargaining representatives are essential.

Minimize unfunded positions

As suggested earlier, some special assignment posts are not funded in the budget. Other unfunded positions can be posts that started out being filled on an irregular basis but are now routinely filled, even though they are not in the budget. These could be, for example, hospital security posts, court security posts, or transport posts. Sometimes these posts may be reduced until ongoing funding is secured.

IMPROVE STAFF HIRING AND RETENTION PRACTICES

Perhaps the most frustrating staffing problems that confront jails result not from budget restrictions, but from difficulties maintaining the level of staffing that has been funded. Many jails routinely experience vacancies in authorized staff positions, most frequently with entry-level staff. Hiring and retaining jail staff have become even more difficult as unemployment has fallen throughout the United States.

Maintaining a full staff complement is usually frustrated by varying rates of staff turnover. It is particularly maddening to have invested the time and money to make an employee ready to be deployed in the jail, only to have that person soon leave the position. The working conditions of jails certainly contribute to staff turnover, but many jails have found ways to drastically reduce turnover, often without increasing staffing costs. Many strategies have been found effective in reducing staff turnover:

- Improving recruiting practices.
- Matching employee skills to specific jobs.
- Increasing pay.

- Enhancing benefits.
- Providing opportunities for promotion.
- Recognizing staff.
- Implementing staff training and development programs.
- Providing employee assistance programs.

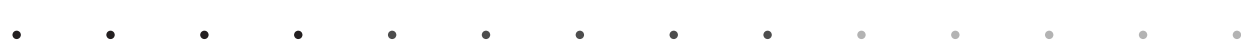
These and other approaches can substantially reduce the staff turnover rate of a jail. In turn, lower turnover reduces the need to recruit and deploy new staff.

Some jails have had success with efforts to keep all authorized staff positions filled. Finding prospective employees who may eventually be hired and deployed is a lengthy and often expensive process. It may be possible to shorten the time it takes to process applicants. Some jurisdictions have analyzed their past hiring and turnover experiences and adjusted their recruiting practices. In effect, they set out to find substantially more staff than they are funded to hire, knowing from experience that a certain percentage will not make it through the process. This is not unlike airline practices of overbooking flights.

EMPLOY CREATIVE ADMINISTRATIVE AND MANAGEMENT PRACTICES

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

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 can be efficient. Others have moved toward increased on-the-job training and reduced pre-service and classroom training. A field training officer in the jail can train staff at their posts. Training provided as part of routine shift briefings can be efficient and effective. Objective testing to ensure staff competency can sometimes reduce the need to train or retrain staff. Emerging training technologies—such as correspondence courses, computer-based training courses, distance learning, and video-based training—can greatly reduce scheduling problems.



Scheduling staff, an ongoing challenge for most jail managers, offers potential for improved efficiency. Managers should develop and implement a schedule that closely corresponds to coverage needs. Many managers have found that using a variety of alternative work schedules, such as those described elsewhere in this workbook, can allow schedules to be tailored to the unique needs of each jail.

Supplementing full-time staff 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).

Creative job structuring sometimes results in greater staff satisfaction and less turnover. For example, creating a job-sharing opportunity for staff who want to work part time allows them to meet their needs while keeping their valuable experience and training available to the jail. Many jails are now cross-training staff to increase their versatility and flexibility for assignment.

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 new ideas and approaches. Some jails find it helpful to have civilian staff for many jobs and tasks that do not involve direct contact with inmates.

Be a better manager. Increase productivity and effectiveness by providing staff with better direction (policies and procedures), training, and supervision.

Selective use of contracts has proven efficient for some jails. Contracting for food service, medical care, and commissary has become common in jails. Other programs and services can be provided through contracts that may, when properly conceived and implemented, reduce staffing demands and improve productivity. Some cities and counties have even decided to contract the entire jail operation out to the private sector.

CHANGE DAILY OPERATIONS AND PROGRAMS

Staffing needs respond to many characteristics of the jail setting. While some aspects of the jail are difficult to control, others can be altered by jail managers. Many aspects of the daily operation of the jail are subject to change. When staffing is chronically short on certain days or times of days, it may be time to rethink the overall schedule of activities and programs for the jail. Some changes may involve fundamental policies and philosophies that are the foundation for jail operation; these should be considered with extra caution and should involve input from policymakers and stakeholders.

Rescheduling activities often presents the simplest solution. Many inmate activities, such as visitation and exercise, can be scheduled differently without compromising the operations of the jail. Some jails have worked with local judges and court personnel to develop schedules that ease demands on the jail.

Relocating activities may result in more efficient staffing. For example, moving an inmate program (such as Alcoholics Anonymous) from a special room where a staff member is required to supervise the meeting to a housing unit's dayroom may allow the existing housing unit officer to supervise the meeting. Some jails have even moved inmate work activities into dayrooms.

Consolidating activities may be an efficient option. A multipurpose space might accommodate a variety of activities—from reading to recreation—under the supervision of a single staff member. Centralizing some activities may reduce redundancy and replication.

Reevaluating current practices often reveals opportunities for changes in inmate movement and supervision to yield efficient results. Consider whether current inmate escort practices are excessive (can some inmates move from certain locations to others without an escorting officer?). Other practices can also be evaluated and adjusted, such as food service delivery



(can sack lunches be provided instead of using carts and serving trays?) and separation practices (can some currently separate inmates participate in exercise or other programs together?).

Rescheduling such staff-intensive activities as external transports can reduce staff demands. You can also reschedule such activities as facility cleaning and maintenance to times with less activity and more available staff supervision. Many jails implement their major facility-cleaning activities on midnight shifts, when staff are often underutilized. Inmates involved with off-hours cleaning details are often housed together to facilitate their sleeping schedule. Even adjusting the inmate meal schedule can increase staff efficiency.

Delegate some tasks to other staff, or even to inmates. Can inmates be responsible for scheduling their own internal appointments, rather than taking the time of an overworked staff member? Can a civilian staff member in the jail office prepare a schedule, instead of a housing unit officer? Can the control room officer on the midnight shift enter information and data, instead of an overworked intake officer?

Reduce demand for some services and activities through policy changes. Many jails have found that requiring inmates to pay a small fee for medical services results in significantly fewer sick call appointments without reducing the quality of care provided to inmates.

Anticipate peak periods of need by analyzing past practices. Similarly, identifying periods of low demand can be productive. If you know from experience that inmate admissions will be higher at certain times, staffing can be adjusted to meet the demand. On the other hand, if there are periods of consistently low demand, you may be able to reduce staffing. On a larger scale, you may even be able to open and close entire housing units or areas of the facility based on fluctuating demands.

Streamlining procedures may relieve pressure on staff at key times. For example, if booking staff consistently have difficulty processing new inmates without a backlog, examine every element of the intake procedure and identify steps that may be

altered, eliminated, delayed, or reassigned. Look at other activities that chronically present logjams in the operation and evaluate the procedures that contribute to the time required to implement each task.

Some jails operate specialized programs, such as outside work crews or boot camps. These are often staff intensive and may need to be reconsidered when staffing resources become overtaxed. On the other hand, some jails have secured funding for work crews from the agency benefiting from the inmates' work.

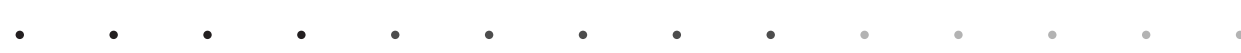
Finally, you may even want to look at the jail's operational philosophy. Some changes in philosophy may lead to operational changes that improve staff efficiency. When examining this foundation of the jail, remember that many parties have a stake in the jail's philosophy and changing it should involve their participation.

CHANGE THE FACILITY

Too often, we forget that the physical plant can be altered, often more easily than its operations. Many jails have used selective renovation—something as simple as putting a window in a wall—to dramatically improve staff performance. Sometimes it may be as simple as changing the way the current facility is used; closing a housing unit, reassigning an activity to a different space, and similar use changes can also make a big difference. One jail was having trouble providing consistent supervision for attorney-client contact visits. This activity was moved to the existing noncontact visiting area, which had direct observation from a fixed control center, for contact visitation. The attorney and client use the same side of the visiting area, rather than having the glass between them.

Many simple and inexpensive renovations can significantly improve staff efficiency. These changes can address operational issues:

- Observation—adding observation windows, improving sightlines, creating an observation room adjacent to an existing post.
- Separation—increasing the ability to separate inmates in housing and activity areas.



- Movement—providing more secure compartments in the jail, relieving concerns about allowing inmates to move without escort.

Relocating activities, such as fixed control posts, may seem expensive, but these one-time renovations may be more cost-effective than adding staff for the life of the facility.

Sometimes it is just a matter of changing fixtures or furnishings. Replacing a solid steel door with one that has a vision panel can make a big difference in observation and sightlines. Improving lighting is another way to improve observation and surveillance. Think of your facility as a work in progress. Be aggressive when analyzing problems and identifying opportunities to adapt the facility to serve your operations better.

CONSIDER USING 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.

Exhibit A-1 lists some of the current and emerging technologies that offer potential benefits for jails, along with examples of how they might be employed.



EXHIBIT A-1: Emerging Technologies

Type of Technology	Possible Uses in the Jail Setting
Perimeter electronics (motion detectors, buried sensors, etc.)	<p>Reduce the need for staffed posts or towers on the perimeter of the facility or on the grounds.</p> <p>Enhance existing physical barriers, such as walls and fences.</p> <p>Enhance other electronic surveillance devices, such as closed-circuit television.</p>
Bar coding	<p>Improve inmate identification practices.</p> <p>Streamline property, evidence, and clothing inventory.</p> <p>Enhance admission and release procedures.</p> <p>Enhance internal movement of inmates and staff.</p> <p>Provide new information and data about jail operations.</p> <p>Reduce paperwork.</p>
Closed-circuit television	<p>Enhance internal and external surveillance.</p> <p>Provide visual record of operations and incidents.</p> <p>Deliver programs and training to multiple locations without moving inmates or staff.</p> <p>Record programs for repeated presentation.</p> <p>Deliver information and programming throughout the jail from a single source.</p>
Video conferencing and visitation	<p>Enable visits between inmates and attorneys, family, and others who are off site.</p> <p>Enable arraignment and other court proceedings without transport.</p> <p>Enable telemedicine consultation.</p> <p>Provide programs and training for staff and inmates through distance learning.</p>
Telephone systems	<p>Give staff portable phone capabilities within the facility and off site.</p> <p>Improve and streamline phone traffic management (e.g., automated answering and call-direction).</p> <p>Reduce the need to supervise inmate phone calls by eliminating the opportunity for abusing the privilege.</p>
Security controls	<p>Elevator controls can allow inmates and the public to operate elevators without staff assistance.</p> <p>New security control panels, such as touch screen, can increase the efficiency and accuracy of staff and consolidate more functions in one location.</p> <p>Transmitters for door controls allow staff to open doors without being at the control panel.</p>
Debit cards	<p>Automate inmate financial transactions, improving accuracy and recordkeeping in the commissary and reducing paperwork.</p>
Computers	<p>Improve overall inmate recordkeeping practices.</p> <p>Streamline intake and release procedures.</p> <p>Provide inmates with programmed learning opportunities that are self-paced and flexible in terms of time and location.</p> <p>Provide staff with new training tools.</p>



Appendix B. The Myth of Staff-to-Inmate Ratios

Using a staffing ratio to compare one facility with another or to determine a staffing level for a facility produces inaccurate results. Many factors differ and cannot be accurately compared:

- Is the number of inmates used for the calculation the actual number, or the rated capacity of the facility?
- Which positions go into the calculation—security only, or all positions?
- Are contractual employees considered?
- Are hours worked by part-time employees considered?
- Are hours worked by full-time staff as overtime considered?
- Are some staff (such as maintenance or nursing) supplied by other county agencies (such as public works or public health)?

In addition to these factors, the characteristics of each jail need to be considered before applying figures from one facility to another:

- Type of inmates housed (level of security, gender, age, etc.).
- Design capacity versus actual population.
- Activities and programs, such as work release, work programs, education.
- Facility design.
- Facility condition.
- Staff qualifications and experience.

Staffing is based on operational philosophy and facility design. The most efficient staffing is possible when a

facility is designed based on an operational philosophy. A facility with a program-oriented philosophy will have counselors, program, and recreation staff, in addition to custody and security staff. A facility with a philosophy of “warehousing” inmates may have only custody and security staff. If a facility’s design is inadequate for its philosophy, staff may be used to compensate for facility shortcomings.

Many design and operational factors will affect staffing, including—

- Whether the facility is designed for direct supervision, indirect supervision, or intermittent supervision.
- The types and size of housing units (cells versus dormitories).
- Facility sightlines.
- The types of security control systems and security perimeter.
- Whether inmates are escorted through the corridors.
- Whether programs and services are centralized or decentralized.
- Whether the facility is single-story or highrise.
- Whether acceptable backup is available.

If people say they can build a 250-bed facility and already know how many staff it will take to operate it, do not believe them. Until a facility is adapted to the unique population and practices of a locality, staffing cannot be accurately determined.

Forget the words “staff-to-inmate ratios”; they only confuse the issues.

Appendix C. Forms

This appendix contains blank copies of all the forms you will need to conduct a jail staffing analysis. You may photocopy them as often as necessary.

Instructions for completing the forms and sample completed forms are found in the step-by-step description of the staffing analysis process.



FORM A: Net Annual Work Hours

Steps	Job Classification				
	Classification 1	Classification 2	Classification 3	Classification 4	Classification 5
1. Total hours contracted per employee per year (if a regular workweek is 40 hours, then 40 (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. Average number of break hours off per employee year (Optional; it may be a contractual item.)					
9. Other: [Specify]					
10. Other: [Specify]					
11. Other: [Specify]					
12. Other: [Specify]					
13. Total hours off per employee per year [total lines 2 through 12]					
14. Net annual work hours [subtract line 13 from line 1]					



FORM B: Facility Activity Schedule

Activity	Times
1.	
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FORM C: Staff Coverage Plan

A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q
	Job Class	Meal Relief?	Total Hours on Days	Total Hours on Nights	Total Hours on Graves	12-hr. Day	12-hr. Night	Other hours	Other hours	No. of Days per Week	No. of Hours per Week	No. of Hours of Coverage per Year	Is Relief Needed for This Post?	Net Annual Work Hours	Total No. of FTEs Needed	Rounded No. of FTEs
	Post/Position															
	CLASSIFICATION 1															
	CLASSIFICATION 2															
	Subtotal Classification 2															
	CLASSIFICATION 3															
	Subtotal Classification 3															
	CLASSIFICATION 4															
	Subtotal Classification 4															
	CLASSIFICATION 5															
	Subtotal Classification 5															
	TOTAL STAFF															

FTE = Full-time equivalent staff

FORM D: Staff Summary Sheet

A	B	C	D
Job Classification	Annual Number of Coverage Hours (Form C, Column M)	Total FTE Staff Needed, as Calculated (Form C, Column P)	Total FTE Staff Needed, Rounded (Form C, Column Q)
CLASSIFICATION 1			
CLASSIFICATION 2			
CLASSIFICATION 3			
CLASSIFICATION 4			
CLASSIFICATION 5			
TOTAL			

FTE = Full-time equivalent staff

Appendix D. Converting Net Annual Work Hours to a Relief Factor

Length of Shift	X	Number of Shifts/Day	X	Number of Days/Week	X	52.14 (wks/yr)	÷	NAWH	=	SRF
Example 1										
1. 8-hour shift										
2. 3 shifts/day		8 x 3 = 24								
3. 7 days/week		24 x 7 = 168								
4. 52.14 weeks/year times total hours/week		168 x 52.14 = 8,760								
5. Total annual hours divided by NAWH (NAWH is 1,600 for this job classification)		8,760 ÷ 1,600 = 5.475								
In other words, it takes 5.475 full-time equivalents (FTEs) to staff this post. This might be a typical calculation for a control-center post.										
Example 2										
1. 10-hour shift										
2. 1 shift/day		10 x 1 = 10								
3. 5 days/week		10 x 5 = 50								
4. 52.14 weeks/year times total hours/week		50 x 52.14 = 2,607								
5. Total annual hours divided by NAWH (NAWH is 1,680 for this job classification)		2,607 ÷ 1,680 = 1.55								
In other words, it takes 1.55 FTEs to staff this post. This might be a typical calculation for a classification post.										

1. Identify the number of hours in the basic shift for which you want a relief factor (e.g., 8).
2. Multiply this by the number of shifts per day (this equals total hours per day).
3. Multiply this by the number of days per week that the post needs coverage (this equals total hours per week).

4. Multiply this by the 52.14 weeks in a year (this is the total hours per year).
5. Divide this by the net annual work hours (NAWH) to produce a shift relief factor (SRF).

