Economics Staff Paper 289

An Analysis of Costs by Size of Jail for Selected Counties in Iowa *

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December 20, 1997

Abstract: Officials from eight counties selected according to jail size were interviewed. Parameters from site visits were used to estimate jail costs. The jails selected ranged in capacity from 5 to 41 prisoners. In addition, costs from the sample of local jails were compared to costs from studies of larger jails and state prisons. Jails with 5 to 41 bed capacity exhibited a U-shaped cost curve. Jail costs varied from a low of $35.20 per prisoner day for the 10 bed jail to $56.63 per prisoner day for the 40 bed jail. Therefore, costs vary by $21.43 per prisoner day for the sample of local jails examined in this study. The threshold economies of size achieved by smaller jails is due primarily to the shared staffing systems, a high degree of integration between jail functions and law enforcement / communications dispatcher functions, and variation in square footage of space per inmate.

KEY WORDS: Jails, costs, economies of size, community jails, regional jails, corrections.

* This report is designed to foster discussion among citizens, leaders and policymakers regarding an important public issue of concern to Iowans. Iowa State University seeks to provide accurate research-based information on relevant issues and neither endorses nor opposes proposals regarding the issue analyzed. The research contained herein was initiated after several forums in which requests for information on jail costs were expressed by several county supervisors and sheriffs. Support for this project was received from ISU University Extension, ISU College of Agriculture and the Department of Economics from discretionary project savings. The funding support was used for research assistance. The goal of the project was to develop objective information sources for making reasonable judgments regarding the costs of providing jail services in rural counties of Iowa and several related policy issues.

** Dr. Mark A. Edelman is a Professor of Economics and Public Policy Economist, Iowa State University. Adrian J. Mayer, MBA was employed by Iowa State University as a Research Consultant to assist in collecting data for this analysis.

Acknowledgments

The authors offer sincere thanks to the sheriffs and chief jail administrators from Adair, Cass, Chickasaw, Floyd, Kossuth, Mahaska, Webster, and Wright counties for their candor, professionalism, experience, and time during the course of this study. The authors also would extend appreciation to county supervisors in Polk, Marshall, Clarke, Franklin, Wright, Boone, and Muscatine counties for providing additional information from recent jail studies.

The authors acknowledge appreciation for the cooperation and provision of county jail information by Mr. Eugene J. Gardner, Chief Jail Inspector, Iowa Department of Corrections. Mr. Gordon Quam, Quam Insurance Agency, Inc., is acknowledged for his diligent efforts to assist researchers in examining insurance market issues as they relate to jails of differing size. This project benefitted from comments by a selected group of external reviewers and by the secretarial assistance of Becky Johnson and Joan Mattingly, who continue to diligently enhance the quality of work for several ISU Extension Specialists.

Finally, this project could not have been attempted without the hard work of Mr. Adrian Mayer. His MBA training and experience as a bank examiner and economic development officer provided a solid background for gathering information during the site visits and contributed greatly to the insights and perceptions provided in this analysis.

Any errors or omissions are the sole responsibility of the Project Director.

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I. Executive Summary of Study Findings.

Officials from eight counties selected according to jail size were interviewed. Parameters from site visits were used to estimate jail costs. The jails selected ranged in capacity from 5 to 41 prisoners. In addition, costs from the sample of local jails were compared to costs from studies of larger jails and state prisons. The following represents the major findings.

1. The jails with 5 to 41 bed capacity exhibited a U-shaped cost curve. Jail costs varied from a low of $35.20 per prisoner day for the 10 bed jail to $56.63 per prisoner day for the 40 bed jail. Therefore, costs vary by $21.43 per prisoner day for the sample of local jails examined in this study.

2. The threshold economies of size achieved by smaller jails is due primarily to the shared staffing systems, a high degree of integration between jail functions and law enforcement / communications dispatcher functions, and variation in square footage of space per inmate.

3. A proposed state policy of mandating full-time jail staff for all local jails eliminates the relative competitiveness presently enjoyed by smaller jails with 10 or less inmate capacity. If this proposal was implemented, the study shows that the 17 bed jail becomes the new threshold size that minimizes costs per inmate day.

4. For the sample of local county jails, a $10,000 range exists in average salaries for sheriff deputies among different counties. In addition, similar range in average salaries exists between sheriff's deputies and county jail staff.

5. Transporting inmates to a neighboring jail in a contiguous county adds $10.08 per prisoner day to housing costs incurred by a county that is transporting inmates. Costs increase as inmates are transported further to jails that are not in contiguous counties.

6. Prices charged by the sample of local jails for housing out-of-county inmates vary over $25 per inmate day. The variation is consistent with an extensive 1996 statewide survey.

7. Lack of access to local jail capacity may create judicial incentives to alter sentences from jail time to other forms of sentences such as monetary fines and community service. This may raise constitutional issues concerning equal access to justice and/or equal application of justice.

8. Accounting practices used in the sample of local jail counties fail to match expenditures and revenues for jail functions. This results in a lack of management information and incentives for efficiency. No single department and/or budget is responsible/accountable for all jail accounting functions.

9. Electronic communications (Internet, ICN, etc.) could be used to organize a statewide market for inmate housing and to conduct inmate hearings from remote sites as judicially appropriate. Time and costs for local law enforcement in identifying available space and transporting inmates between and among jails, court services, and state corrections facilities could be reduced.

10. Transporting prisoners to neighboring counties, expanding existing jails, building efficient small jails sized to community needs, and/or building oversized jails to house inmates from other counties, state and/or federal jurisdictions are all potentially feasible under various circumstances, given the range in local jail costs found in this study.

II. Policy Issues and Study Objectives.

Public concern over crime is at a high level in Iowa and the nation. Since 1990, new crime laws with increased penalties have been enacted by policy makers followed by state and national efforts to "beef up" law enforcement. Criminal caseloads before the Iowa State Court System increased 60 percent between 1987 and 1994, necessitating the expansion of 11 new judge positions. Iowa has initiated construction of three new state prisons, and reopened an existing prison wing. The Iowa Department of Corrections continues to project substantial increases in prisoner housing needs and has been considering construction of a fourth new prison (18).

Yet with all of the discussion about state and federal responses for "getting tough on crime," relatively less attention has been given to state and federal impacts on community jails across the state. While some efforts have begun to collect statewide information and formulate statewide strategies on community corrections such as the Local Corrections Planning Task Force (1), little or no analysis is available on county jail costs and economic feasibility of alternative local jail policy strategies.

According to 1996 Department of Corrections data, 93 counties currently have county jails. Sixty-one counties have jails with 20 or less capacity and 30 counties have capacity of 10 or less. There are no county jails in Boone, Calhoun, Franklin, Hamilton or Ringgold counties. Grundy County has a holding facility only. Thirty-two counties have jails with capacity of more than 20.

Total county jail capacity grew 36 percent from a capacity of 1,948 in 1992 to over 2,651 in 1996. However, most of the expansion has occurred in the more urban counties. At least ten counties have built new jails since 1988 and two others have conducted major renovations. The Iowa Local Corrections Planning Task Force conducted a 1996 County Facilities Survey in which 86 of the 99 counties responded. This survey shows that 50 percent of the county jails are over 30 years old, 39 percent are over 50 years old, and 23 percent of the county jails are over 75 years old. While all county jails hold adult male inmates, only 44 of the county jails hold female inmates and only 6 hold juvenile inmates.

Various prisoner studies from rural counties (17,1) typically show 80 to 95 percent of the prisoners are men and 5 to 20 percent are women. A majority are age 20 to 39. In one rural

county prisoner study, the most frequent offenses were OWI, theft, domestic abuse, possession of a controlled substance, and sexual assault. However, the crimes experienced are likely to vary by county and from one time period to another. Typically one-third of county jail prisoners are sentenced and two-thirds are awaiting trial which means they are presumed innocent under the U.S. justice system. In recent years, standards for community jails have been increased following court decisions requiring attention to constitutional guarantees against cruel and unusual punishment. Iowa jail standards encourage classification and sight and sound separation for prisoners of different gender, juveniles, pre- and post-trial status, and predisposition toward violence. In addition, jails are to be ADA accessible (2). Many rural jails were built before current jail standards were passed and are exempt until expansion or new construction occurs. This is important because future jails will be more costly to construct in comparison to existing jails examined in this study (1).

Officials in rural counties that are experiencing an increase in outstanding warrants and waiting lists for jail time are increasingly faced with five policy options: (a) transport prisoners to other counties, (b) expand the existing jail, (c) build a new jail to house local prisoners, (d) participate in multi-county regional jail construction, and (e) build a new oversized jail to house additional outside prisoners. At the present time, local jails are constructed primarily using local revenues. However, some state policymakers have suggested providing state support and incentives for regional jails. The regional jail concept has been promoted by some Iowa Department of Corrections officials (7) and counties wishing to become regional jail centers.

Alternatively, some county supervisors have expressed interest in building oversized local jails for housing non-violent state prisoners, with appropriate state incentives and long term contracts. This approach would retain jails more locally and provide more space for state prisoners potentially at a lower cost than building new prisons. State prisons are subject to more extensive design standards which may make them more costly to build and operate than smaller jails. Inmates with sentences of two-years or more require facilities with more extensive design standards and costs. Legislative proposals to allow placement of prisoners with less than two-year sentences in county or regional jails have previously been favored by some Department of Corrections officials (7).

A particularly contentious issue in the recent Iowa debate is whether jail standards should prohibit the use of communications dispatchers in providing state mandated 24-hour sight and sound supervision for county jails. Opponents suggest this would force small rural jails to close and encourage regional jails. Proponents suggest that jail safety would be improved, and perhaps local jail efficiency could be improved long term as new jails meeting current standards were built. Therefore, policymakers are interested in the economic impact of this proposal.

The purpose of this study is to answer several of the unanswered questions using data from eight Iowa county jails with inmate capacity of less than 50. Specifically the study objectives are:

1. To develop an estimate of the present costs for providing jail services in counties with jails of differing size and management structures.

2. To develop an estimate of the supply costs and market price opportunities for renting jail space to external entities.

3. To develop an estimate of the costs for transporting prisoners and renting jail space from external entities.

4. To develop estimates for comparing the costs of building new jails with and without extra space for renting jail space to external entities.

5. To develop observations and recommendations for improving the efficiency and management of Iowa's system of county jails.

III. Methods and Data.

The methods used were designed to compare costs across size groups of existing county jails. Data on jail inmate capacity came from the Department of Corrections. All county jails were arrayed according to size. After deciding to focus on jails with inmate capacity of less than 50, two jails were selected to represent each of four size groups: jails with 5, 10, 20, and 40 beds.

A survey instrument was constructed. The three objectives included: (1) consistent collection of technical coefficients for time and motion in order to approximate cost estimates and comparisons across jails, (2) identification of constraints and structural differences in the operations of jails of various size and proximity to court services, and (3) identification of needs, opportunities and preferences in community jail policy and management.

Interviews were conducted with the sheriff and/or chief jail administrator of each county jail. Each interview typically lasted one hour. During the first interview, it became clear that a full set of cost information may not be available to the sheriffs or chief jail administrators charged with the responsibility of managing county jails. As the interviews progressed, each county appeared to possess a unique system of posting various jail costs and revenues. In many rural counties, the budget for the sheriff's department is not separate from the jail budget. In many rural counties utilities and insurance are co-mingled with all other county functions and billed directly to the county supervisors. In other counties, jail revenues are remitted to the county supervisors and never applied to the jail budget to offset the costs associated with generating extra jail revenues.

Since some key information was often simply not available to sheriffs and/or chief jail administrators, additional information was collected from other county officials, local realtors and an insurance broker. As a result, the methods used to estimate costs represent an engineering approach to approximating the costs for each jail and do not represent actual costs. In addition, officials from counties recently conducting jail studies provided copies of their studies for review. The information collected from these studies was used to corroborate methods and data used herein.

IV. Analysis of Costs for County Jails with Capacity Less Than 50.

The first study objective was to estimate costs for providing jail services in the eight county jails. For purposes of developing economies of size comparisons, prisoner transportation costs were excluded from jail service functions. Prisoner transportation includes two components. First, the sheriff's department rather than the jail administrator is typically responsible for all prisoner transportation and prisoner security from the jail to court services and return. Second, the sheriff's department is responsible for prisoner transportation to and from jails in neighboring counties where local prisoners are housed. Third, the sheriff's department transport prisoners to state corrections entry at Oakdale. A cost analysis of total jail services would include costs that vary in relation to distance between local jails and courthouses, between local jails and jails in neighboring counties that house local prisoners, and between local jails and state prison entry point. However, inclusion of the external elements of transportation cost variation distorts the analysis of efficiency across jail size groups. Therefore, the comparisons in this study exclude transportation costs and represent costs that occur inside the jail facility without regard to jail proximity to the courthouse and neighboring county jails and state correction entry, unless otherwise specified.

Cost estimates are calculated assuming 85 percent occupancy. During the interviews, most chief jail administrators/sheriffs indicated that jails were generally full and/or overflowing on weekends and about 75 percent capacity during the week. The patterns in the responses did not appear to vary across jail size groups. There were a couple of exceptions, however. In one case, a policy decision was made to leave jail cells empty rather than consider housing out of county prisoners. In another example, an older, smaller county jail did not house female prisoners because of requirements for separation and 24-hour same gender supervision. The researchers determined that a common occupancy rate would be used across jail sizes to eliminate cost variation due to extraneous local policies unrelated to jail size.

The largest components of jail costs include labor, food and building costs. Labor and food costs are considered variable operating costs and in this study are based on time and wages reported for jail functions in interviews with the chief jail administrator/sheriff. In counties with shared staffing structures, jail functions are highly integrated with communications and law enforcement functions that would exist with or without the presence of a local jail. Thus for shared-staff counties, only the time spent performing jail functions was allocated to the jail costs for the county. Benefits were assumed to represent 25 percent of the wages reported.

Food was purchased from external vendors in six of the eight jails visited. The two jails which provide in-house food preparation are noted with an (**) and exhibit higher labor costs and lower food costs than the other jails.

Utilities, insurance and supplies represent smaller components of jail costs. Reliable estimates for these items were not available during most site visits. Therefore, an engineering approach was used to develop consistent estimates of costs over jail size categories.

For example, annual utility costs for water, sewer, electricity and gas are typically not separately metered for the jail space and these expenses are often billed to the county supervisors and/or the

law enforcement agency for combined jail and law enforcement functions. Variation in actual county estimates for selected items representing part of the total utility costs ranged from $2.50 to $4.02 per prisoner day. An additional increment was added to estimate full utility costs for jail functions. Therefore in this study, total annual utility costs are calculated to be $3.34 per prisoner day plus $2 per square foot of building space.

Insurance is a function of property and tort liability. Interviews with chief jail administrators / sheriffs indicated that few jails have insurance costs separate from those of the law enforcement and/or the county, in part, because combined umbrella policies for multiple functions of government are often less expensive in comparison to the combined costs of individual policies for individual functions. After interviewing an insurance broker, a formula for calculating insurance costs based on building value, nature of use, and number of FTEs (full-time-equivalent employees) was developed after an discussion with an insurance broker who is familiar with insuring local jails. The formula assumes $2 million in liability coverage.

The cost of supplies is estimated to be $3.91 per prisoner day. Variation in actual county estimates that were gathered from site visits ranged from $2.81 to $5.33 per prisoner day but appeared to be unrelated to size of jail.

The selection of the building cost estimation methods are important because the cost of building a new jail represents the single largest one-time cash flow obligation made by local decision makers in regard to jail services. Thus, perhaps the most contentious process in estimating total jail costs is selection of the methods used for estimating the charge for fixed building expenses. Several different approaches are appropriate depending upon the policy question being asked. For example, if the question is, “What is the minimum that should be charged to house outside prisoners?” The standard answer provided by production economics is that the price charged should be equal to or greater than the jail operating cost per prisoner day, excluding any building charge for existing jails. In this example, the building cost represents a sunken cost. Therefore the operating cost represents a minimum break-even charge. Any rate charged above the operating costs provides a net contribution to cash flow and a return to building ownership.

In the long run, county officials want to recover their “full costs” which means they not only want to break-even, they also would want to receive a return on their building investment comparable to what would be received for alternative uses. Thus an opportunity cost methodology was used to estimate the building costs for each jail in Tables 1.1, 1.2, and 1.3. It is important to note that jail size is not perfectly correlated with community size. The additional alternative approaches for calculating building costs are considered in Section VII.

To estimate the building costs using the opportunity cost methods, the researchers collected information during the eight jail visits regarding jail space. Jail space per prisoner ranged from 144 square feet per inmate in the 5 bed jail to 471 square feet per inmate in the 40 bed jail. The estimate of jail space was multiplied by a prevailing local rental rate for good quality commercial space as determined through interviews with several realtors from communities where the jails were located. Particularly in smaller communities, consistency of the rental rate estimate over

time becomes a concern due to lack of market liquidity for commercial space. In many cases, USDA leasing rates of $7.25 per square foot were significantly above the rest of the local market and average quality space was rented for as little as $2.75 per square foot or was not rented on a square footage basis. Therefore in general, commercial rental rates were presumed to increase as city population increased. Based on this principle, the researchers assigned rental rates in counties where liquidity was viewed to be a major concern.

Table 1.3 results show that costs for existing jails range from a high of $56.63 per prisoner day to a low of $35.20 per prisoner day for a range of $21.43. This represents more than a 40 percent variation across the sample of counties stratified by size. A U-shaped cost curve is implied by comparison of costs over jails of increasing size. Costs in excess of $50 per prisoner day occur for the smallest and largest jails examined, while costs were below $40 per prisoner day for the mid-sized jails examined.

Table 1.1 Characteristic for Selected Iowa Rural County Jails by Size, 1997.

County	**A**	**B**	**C**	**D**	**E**	**F**	**G**	**H**
1990 Pop	18,600	14,300	13,300	8,400	17,100	15,100	21,500	40,300
City Pop	6,000	2,700	3,700	2,100	7,900	7,400	10,600	25,900
Jail Capacity	5	8	9	10	17	17	40	41
Prisoner Days/Year	1551.25	2482	2792.25	3102.5	5274.25	5274.25	12410	12720.25
System Structure	Shared Staffing	Shared Staffing	Shared Staffing	Shared Staffing	Full-time Staffing	Full-time Staffing	Full-time Staffing	Full-time Staffing
Jail FTEs	1.4	1.52	1.39	1.275	6.0	6.5	12.0	14.5
Avg Salary +Ben/FTE	$34,433	$25,324	$30,431	$35,056	$15,343	$18,769	$27,500	$24,110
Jail Area Gr Sq Ft	720	1,200*	1,339	2,040	3,172	5,692	18,850*	14,599*
Gr Sq Ft/ Jail Cap.	144	150	149	204	187	335	471	356
Rent Rate /Sq Ft/Yr	$6	$5	$5	$5	$6	$6	$7	$8

* Based on approximation of dimensions by researchers during site visits.

Table 1.2 Estimated Total Costs for Selected Iowa Rural County Jails by Size, 1997.

County	**A**	**B**	**C**	**D**	**E**	**F**	**G**	**H**
Labor	$48,207	$38,492	$42,300	$44,697	$92,061	$122,004	$330,000	$349,600
Food	13,961	27,922	25,130	25,596	39,557	15,823 **	96,798	56,096**
Utilities	6,624	10,697	12,007	14,458	23,945	29,008	79,176	71,742
Insurance	1,582	1,936	2,010	2,110	6,171	6,434	16,381	17,045
Supplies	6,065	9,704	10,918	12,131	20,622	20,622	48,523	49,736
Operating Costs *	**$76,439**	**$88,751**	**$92,365**	**$98,992**	**$182,356**	**$193,891**	**$570,878**	**$544,219**
Annual Bldg Cost	4,320	6,000	6,695	10,200	19,032	34,152	131,950	116,792
Tot. Costs	**$80,579**	**$94,751**	**$99,060**	**$109,192**	**$201,388**	**$228,043**	**$702,828**	**$661,011**

*Does not include deputy time and transportation of prisoners to and from court services.
** In-house food preparation is attributed to lower food costs and higher labor costs.

Table 1.3 Estimated Costs Per Prisoner Day for Selected Iowa Rural County Jails by Size, 1997.

County	**A**	**B**	**C**	**D**	**E**	**F**	**G**	**H**
Labor/pd	$31.08	$15.50	$15.15	$14.41	$17.46	$23.13	$26.59	$27.48
Food	9.00	11.25	9.00	8.25	7.51	3.00**	7.80	4.41**
Utilities	4.27	4.31	4.30	4.66	4.54	5.50	6.38	5.64
Insurance	1.02	.78	.72	.68	1.17	1.22	1.32	1.34
Supplies	3.91	3.91	3.91	3.91	3.91	3.91	3.91	3.91
Operating Costs/pd *	**$49.28**	**$35.75**	**$33.08**	**$31.91**	**$34.59**	**$36.76**	**$46.00**	**$42.78**
Annual Bld Cost/pd	2.78	2.42	2.40	3.29	3.61	6.48	10.63	9.18
Total Costs/pd	**$52.06**	**$38.17**	**$35.48**	**$35.20**	**$38.20**	**$43.24**	**$56.63**	**$51.96**

*Does not include deputy time and transportation cost of prisoners between jails and court services.
** In-house food preparation is attributed to lower food costs and higher labor costs.

Prior to this study the authors had expected threshold economies of size to be achieved at the 20 to 40 bed capacity rather than the 10 bed capacity. This study provides evidence that the threshold economies of size in existing jails can be achieved at the 8, 9 and 10 bed jail capacity assuming

that shared staffing patterns are allowed. This finding was in contrast to the conventional wisdom and the authors' expectations for a higher 40 bed threshold level in economies of size.

There are three reasons for these unexpected results. The first and most important reason is that jails with the capacity of less than 20 show a much lower level of FTEs than had been expected from reviewing various county jail studies. It is noted in Table 1.1 that all of the jails in the sample with 10 or less beds rely on a shared staffing systems. The use of dispatchers and deputies only when they are needed for jail functions allows most of their salary costs to be charged to other non jail budget functions. Visual monitoring when jails are integrated jails with shared staffing requires 5 to 10 minutes of dispatcher or deputy time per hour. This factor alone accounts for much of the economic efficiency and competitiveness of the smaller jails. The remainder of the shared-staff time is assumed to be charged to law enforcement and/or communications services. These functions would be required to exist in the absence of a local jail.

The second reason for the unexpected results is that the larger 40 and 41 bed jails examined in this study have greater square footage of space per prisoner in comparison to the 8 to 17 bed jails. Most of the efficiency decisions regarding jails are made when the building is designed and constructed and there are limited opportunities for increasing efficiency after the construction takes place. This study estimated the 41 and 40 bed jails to have 356 and 471 square feet per prisoner for all jail functions. The smaller jails ranged from 144 square feet per prisoner in the smallest 5 bed jail to 335 square feet per prisoner in a 17 bed jail.

Another perspective on this issue is that most of the smaller jails are among those constructed more than 50 years ago. In addition most smaller jails were not designed to meet current sight and sound separation for female prisoners, juveniles, violent inmates, inebriated inmates, and pre- and post-sentence inmates. They were built during a time when standards required less square footage of space relative to today's standards. Thus, this study's comparison of building costs across existing jails sizes is not necessarily relevant to current space needs and county jail construction decisions.

A key reason for the higher cost per prisoner day in the 5 bed jail in comparison to the 8, 9 and 10 bed jails is that the 5 bed jail required a comparable amount of jail labor, but the labor costs are spread over fewer prisoners. Site interviews with smaller jails with less than 10 beds revealed a high degree of integration of jail staff functions with functions of law enforcement and dispatcher communication systems. However, the results show that limits to integration efficiency exist in jails of 5 or fewer capacity.

The labor cost per staff FTE in Table 1.1 is higher for the smaller jails. They tend to utilize sheriff deputies who are typically paid up to $10,000 per year more in comparison to full-time jailors. The interviews revealed a significant variation in annual salaries of up to $10,000 among jailors and also among sheriff deputies across counties. In addition, the use of part-time employees accounted for some of the FTE and average salary differences for the larger jails.

V. Comparison of Alternative Jail Staffing Systems.

The findings of the previous section have important economic implications for the consequences of policy proposals that would mandate or impose full-time staffing structures on small jails. Presently, 30 counties have jails with 10 or less beds and 61 have jails with 20 or less beds. Table 2.1 shows the impact of imposing such a requirement on a 10 bed jail. Under a scenario in which dispatchers are no longer allowed to provide 24 hour monitoring of security, a minimum full-time staff of 6.0 FTEs is assumed. This means 1 person for 24 hour supervision seven days a week plus 1.8 FTEs for other jail functions.

The result of imposing full-time staffing is that labor costs per prisoner day more than double for the 10 bed jail. The 10 bed jail becomes uncompetitive compared to the 17 bed jail. The costs for the 17 bed jail are more than 20 percent lower if a uniform minimum standard of 6 FTEs are imposed on all jails. Thus, the net effect of imposing a full-time staffing structure on all jails is the raising of the threshold level for which economies of size can be achieved. The threshold level for efficient jails would increase from a jail capacity of 10 inmates to a jail capacity of 17 inmates in this study.

Table 2.1 Comparisons of Costs Per Prisoner Day for Shared and Full-time Staffing Structures.

	Shared Staffing 10-bed Jail	**Full-time Staffing 10-bed Jail**	**Full-time Staffing 17-bed Jail**
Labor Costs/pd	$14.41	$30.76	$17.45
Other Costs/pd	$20.79	$20.79	$20.74
Total Costs/pd	**$35.20**	**$51.55**	**$38.20**

VI. The Cost of Transporting Inmates to Other Counties.

A note of caution is in order regarding the interpretation of efficiency in relation to high cost counties. Counties with a cost of $50 per prisoner day or more may be operating efficiently given the staffing system and facility characteristics. In many cases, a jail facility may not have the opportunity to achieve lower costs. Such counties cannot necessarily transport prisoners to other counties and save costs. This principle is illustrated in Table 3.1 and Table 3.2. Table 3.1 shows deputy time and auto costs for transporting prisoners to neighboring counties, assuming a 60 mile round trip between jails. These estimates are based on the number of trips to neighboring county jails and prisoner days generated in two county jail studies. Based on the assumptions for distance and salary, transporting prisoners typically adds an additional $10.08 per prisoner day to the housing costs paid by the county transporting prisoners out to the neighboring county.

Table 3.1 Cost of Transporting Prisoners to Neighboring Counties.

Item	Transportation Costs
Deputy: 2 hr/trip@$15.00/hr.	$30.00
Auto: 60 mi./trip@.315/mi	$18.90
Cost/trip	$48.90
Cost/prisoner day	$10.08*

* Assumes each prisoner transported an average of one trip for every 4.85 days.
Selected Reference (8).

For example, if the neighboring county charges $50 per day to house external prisoners, the total cost for housing prisoners in the neighboring county would be approximately $60 per day. Thus a county that continues to house prisoners locally for $60 per day or less is making an economicly sound decision in doing so. However, the estimated transportation costs are likely to increase as jail space becomes more scarce and distance to the available jail space increases. On the other hand, travel costs for some counties may be lower than the $10.08 estimate in Table 3.1 because salaries for transport personnel and distance to neighboring jails are lower than those used in this example or more than one prisoner is transported at a time.

A 1996 Iowa Local Corrections Planning Task Force conducted a survey of county jail officials on rates charged to house out-of-county prisoners (1). Among the 80 responses statewide, rates ranged from $35.00 per prisoner day to $78.93 per prisoner day. Forty-two counties charged $50 per prisoner day and the average was $49.94 per day. A limitation of this data is that not all jails reporting data have extra space to rent. Jails that do are likely to charge above the average. Table 3.2 provides housing rates reported in site interviews supplemented by statewide survey data.

While the out-of-county prisoner housing expenses are typically included in a county's local jail budget, the costs of deputy time and auto expenses to transport prisoners are typically allocated to the sheriff's department budget. By law prisoner transportation is a responsibility of the sheriff's department. Therefore, the full amount of transportation expenses is not likely to be charged to the jail services budget. In addition, if less deputy time is spent transporting prisoners to neighboring jails, more time is typically available for local law enforcement and public safety work.

Table 3.2 Rates Charged for Housing Prisoners for Other Counties, 1996-97.

County	A	B	C	D	E	F	G	H
Housing for Others/pd	$50	$40	$40	$50	$50	$50	$55	$65 * $48 **

* Rate for other counties.
** Contract rate for federal prisoners.
Selected Reference (1).

An issue related to jail overcrowding is the consequences on the judicial system in response to lack of local jail access. All of the sheriffs and some--but not all--of the chief jail administrators interviewed suggested that in their opinions judges and prosecutors were less likely to push for jail time and more likely to modify sentence decisions if the local jail capacity was limited and if overcrowding occurred.

VII. Alternative Methods for Estimating Building Costs.

As indicated in previous sections, different approaches for estimating building expenses are appropriate depending upon the policy question being asked. For example, if the question is, "What is the minimum that should be charged to house outside prisoners?" The standard answer provided by production economics is that the price charged should be equal to or greater than the jail operating cost per prisoner day, excluding any building charge for existing jails. In this case, the building cost represents a sunken cost. Therefore the operating cost represents a minimum break-even charge. Any rate charged above the operating costs provides a net contribution to cash flow and a return to building ownership. Table 4.1 lists the operating cost estimates as Option A for each jail in the sample.

In the long run, county officials want to recover their "full costs" for existing jails, which means they not only want to break-even, but they also would want to receive a return on their building investment comparable to that which would be received for alternative uses. Thus, an opportunity cost methodology was used to estimate the building costs for each jail. This method is used in Table 1.3 and is listed again under Option B in Table 4.1. The estimate of jail space was multiplied by a prevailing local rental rate for good quality commercial space as determined through interviews with several realtors from communities where the jails were located.

Option C reflects building costs when new construction, expansion or replacement is considered. In this case, short term political considerations often influence local jail decisions more greatly than longer term economics. Option C reflects a per prisoner daily cost for an assumed jail construction cost of $150 per square foot, annualized with a 20 year bond at 6 percent interest. The $150 assumption is consistent with other studies (3, 17) and includes land costs. This approach more accurately represents out-of-pocket cash expense projections for a jail during the first 20 years of a jail's useful life. However, Option A would more accurately represent the out-of-pocket cash expense projections for the second 20 years of the jail's useful life, after the 20 year bonds are paid off. During the second 20 years there are no out-of-pocket cash flow building costs, except for repairs.

Option D represents spreading or discounting of the land and construction costs over an expected full 40 year economic life of a jail facility. In this case, the $150 per square foot cost for land and construction are annualized over 40 years at a 6 percent interest rate. While this approach may more accurately represent the economic costs of a jail, the shortcoming is that it represents neither the cash outflow for the first 20 years or the second 20 years.

Table 4.1 Annualized Building Costs, 1997.

County	**A**	**B**	**C**	**D**	**E**	**F**	**G**	**H**
Gr Jail Area Square Feet	720	1,200	1,339	2,040	3,172	5,692	18,850	14,599
Option A. Operating Costs/pd	**$49.28**	**$35.75**	**$33.08**	**$31.91**	**$34.59**	**$36.76**	**$46.00**	**$42.78**
Option B. Rental Rate /Sq Ft/Yr	$6	$5	$5	$5	$6	$6	$7	$8
Annual Bldg Cost	4,320	6,000	6,695	10,200	19,032	34,152	131,950	116,792
Annual Bldg Cost/pd	2.78	2.42	2.40	3.29	3.61	6.48	10.63	9.18
Option B. Tot. Costs	**$52.06**	**$38.17**	**$35.48**	**$35.20**	**$38.20**	**$43.24**	**$56.63**	**$51.96**
Option C. Const. Costs $150/sq ft	108,000	180,000	200,850	306,000	475,800	853,800	2,827,500	2,189,850
Annualized pmt 20 yrs	9,416	15,693	17,511	26,678	41,482	74,438	246,514	190,921
Annual pmt 20 yrs/pd	6.07	6.32	6.27	8.60	7.87	14.11	19.86	15.01
Option C. Tot. Costs	**$55.35**	**$42.07**	**$39.35**	**$40.51**	**$42.46**	**$50.87**	**$65.86**	**$57.79**
Option D. Const. Costs $150/sq ft	108,000	180,000	200,850	306,000	475,800	853,800	2,827,500	2,189,850
Annualized pmt 40 yrs	7,178	11,963	13,349	20,337	31,622	56,745	187,920	145,541
Annual pmt 40 yrs/pd	4.63	4.82	4.78	6.56	6.00	10.76	15.14	11.44
Option D. Tot. Costs	**$53.91**	**$40.57**	**$37.86**	**$38.47**	**$40.59**	**$47.52**	**$61.14**	**$54.22**

VIII. Evaluating the Economics of the Local Jail Alternatives.

Increasingly, local jail officials and policymakers are faced with a decision about whether to transport local prisoners out, expand an existing jail, build a new jail, and house inmates for other jurisdictions. Data from this study can be used to illustrate an economic comparison of alternative local jail strategies. A note of caution is in order because this study provides parameters based on eight unique localities. Whenever possible, local parameters should be substituted into any comparative analysis used in support of a local decision. In addition, the local issue context relating to the need for additional jail space, number of outstanding warrants, jail time waiting lists and willingness of local taxpayers to finance a new jail are often among the key factors in generating public support for making the local policy decision. This study does not identify the "local need" for jail capacity in the counties visited. Costs are estimated for existing jail facilities, and no judgements are made as to whether the existing jails are adequately sized to serve the local jail space needs. A related point is that many of the smaller jails were built prior to recent revisions in jail standards. Therefore, costs for replacing existing capacity are likely to be underestimated for some the jails listed in Table 4.1 because more space per prisoner would be needed to meet existing standards. These costs may be partially offset if jails can be constructed for less than $150 per square foot.

From previous information presented in Section VI, we know that transporting and housing prisoners in a neighboring county may cost $65 per day or more in some counties. This amount might hypothetically include $10 per prisoner day for transportation and $55 for housing charged by the neighboring county (See Tables 3.2). Option D in Table 4.1 shows that all eight county jails examined in this study have combined construction and operating costs below $65 per day (assuming $150 per square foot construction costs, a 6 percent discount rate, and a 40 year useful life). Thus in this example, it is less expensive to expand or construct a new jail in all cases if the needs assessment for local jail space exceeds the space available in the existing local jail.

However, we also know that other counties house out-of-county prisoners for less than $55 per day. What if we assume $45 per day is charged for housing in a neighboring county plus the $10 per prisoner day in transportation costs? In this case, Option D in Table 4.1 shows that at least three counties exceed $55 per day in construction and operating costs. They would be better off transporting prisoners to neighboring jails, particularly if they could lock in lower rates long term. However the other five counties would have an incentive to expand or construct a new jail.

The construction-no construction decision is a little different if a county is strapped for cash and fully funding construction from local cash flows without any state or federal contracts or construction incentives. In this case, Option C in Table 4.1 more closely reflects the cash flow costs. If the cost of transporting is $10 and housing is $55 in neighboring counties for a total of $65 per prisoner day, seven jails would have an incentive to expand their own jail capacity and one may have an incentive to transport prisoners out. But if the cost of transporting was $10 and housing was $45 fro a total of $55 per prisoner day, again only five jails would have an incentive to expand while three may have incentive to transport prisoners out.

In regards to the issue of housing outside prisoners, Option D in Table 4.1 shows that this alternative would be profitable for all eight existing jails if the housing rate charged to other counties, the state, or the federal marshals was $61.14 per day or more. Of course the rate charged to recover full costs is lower for most of the eight jails examined. At the $50 rate, 5 of 8 jails recover their full economic costs. Three jails would not recover their full costs. Two of the three are the 40 bed jails. For the three higher cost jails, the response at a $50 rate is not a straight forward "yes" or "no" answer. The $50 rate is above the break-even rate for all three jails (Option A in Table 4.1). Therefore, the $50 a day rate would cover all operating costs and provide a partial return to building ownership in the longer run.

In regards to building an oversized jail to house out-of-county prisoners, a more detailed pre-construction analysis may be in order to determine if the marginal revenues gained at $50 per prisoner day from adding the additional beds more than covers the marginal operating and construction costs from adding the additional beds. In some jail designs according to one analysis (5,6), the second 20 beds built in a 40 bed jail are less expensive to build than the first 20 beds. The marginal construction and operating costs per prisoner for the second 20 beds represents the break-even cost in deciding whether to build an oversized jail or to simply build a jail sized for local needs only. If the rate charged for housing out-of-county prisoners is greater than the average costs per prisoner including the building construction and operating costs for the full 40 beds (Option C in Table 4.1), a profit contribution from the less costly second 20 beds can be used to help bring down the average cost of the first 20 beds used for local prisoners. However because of the risk of changing market conditions, local officials making such pre-construction decisions should consider ways to lock in long term contracts for space, construction incentive grants and housing rates with those who would be interested in housing their prisoners in the local jail.

IX. Comparisons to State Prisons and Jails with Capacity Greater than 50.

From a statewide perspective, state and local policymakers may wonder how incarceration costs of state prisoners and larger county jails with capacity of 50 or more compare to the smaller county jails with capacity of less than 50 inmates. A perspective on this issue may inform decisions relating to whether or not development of state and local partnerships for housing less violent state prisoners should be considered. Table 5.1 includes data from other sources and provides some limited perspective by comparing estimates based on a state prison study and estimates from two studies of larger county jail facilities.

A 1996 state prison construction project analysis was used to develop comparable estimates for a 750 bed minimum security prison costing $35 million to construct (16). This study provides labor and construction costs which are the largest two components of the estimated costs per prisoner day. Unlike the 85 percent occupancy assumed for local jails, 100 percent occupancy is assumed for state prisons. For purposes of developing preliminary comparisons, food, utility, insurance and supply costs are assumed to equal the reported state average for Iowa prisons (18). The prison would have 265 employees at an average $27,000 income. Construction costs are annualized over 20 years at 6 percent interest, similar to Option C in Table 4.1.

While standards for prison construction and operation are more extensive than the community jails considered in this study, the ballpark estimates provided in Option I, Table 5.1 show that minimum security prison costs per prisoner day are competitive with construction of the highest cost local jails. However, the costs per prisoner day for minimum security prison exceed current housing costs charged by all but one of the local jails analyzed in this study. Therefore, some opportunities for state and local savings are likely to exist for housing state minimum security inmates in local jails. However, the economic feasibility must be examined on a case-by-case basis because of variation in local costs.

There are other potential reasons for considering such options. The state may wish to encourage counties to update their jail capacity in light of today's increasing state and local needs. The state may wish to spread the long term economic benefits of building new prison capacity over a wider coalition of 20 to 40 communities from across the state, instead of favoring one community. Such economic benefits could potentially be significant. The 750 beds and $35 million construction costs spread over 30 counties means 25 jail beds and $1.16 million in construction costs per recipient county. The 265 prison guards spread over 30 counties potentially means an extra 8.8 jail guards per recipient county and an extra payroll of $238,000 per year per recipient county.

Table 5.1 Reported Costs for a 750 Bed Minimum Security Prison and Two Large County Jails, 1996.

County	**I. - State Prison * 750 Bed Capacity 100% Occupancy**	**J. - Local Jail * 324 Bed Rehab. 85% Occupancy**	**K. - Local Jail * 110 Bed New Const. 85% Occupancy**
Labor/ prisoner day	$32.67	$48.52	$21.54
Other Operating Expenses	16.64	17.88	8.00
Total Operating * Costs/prisoner day	**$49.31**	**$66.40**	**$29.54**
Est. Annualized Bldg Cost/prisoner day	11.15	7.80	12.09
Est. Total Costs/ prisoner day	**$60.46**	**$74.20**	**$41.63**

* Information reported in other studies (10, 15, 16, 18).

A review of two large jail studies shows a wide range of estimated costs. This calls into question the conventional wisdom on whether larger jails with 50 or more beds are always more efficient than smaller county jails (10,15). There is a significant range in costs between Option J and K in Table 5.1. Casual observation suggests that the county depicted in Option J should consider transporting prisoners out to neighboring jails if it is presently not doing so. However once it is known that the county is currently transporting prisoners over long distances, then Option J may still be the most feasible strategy for minimizing local jails costs depending on what the cost of transportation is and the daily rate charged by the host counties. It should also be noted that the

researchers consider the data reported for "Other Operating Expenses" under Option K in Table 5.1 to be a little low and unrealistic based on other data and analyses reported in this study. If so, this means that the range in costs for the large county jail studies is overstated in Table 5.1.

An interesting set of comparisons is reported in one of the large county studies reviewed (10). It lists the inmate-to-staff ratios and square footage per inmate for nine different county studies for jails with 50 beds and over. The ratio of inmates to staff ranged from 4.3 inmates/FTE to 2.2 inmates/FTE which nearly represents a doubling of staff per inmate. The gross square footage of space ranges from a low of 191 square feet per inmate to 657 square feet per inmate. Neither ratios appear to be related to jail size. Wages, labor availability for jailors and land costs vary significantly depending on the community and jail location. With this kind of variation in the major cost components for larger and more urban jails, it becomes very difficult to make any statements regarding economies of size in larger jails, unless variation in staffing patterns and prisoner space are controlled over size units in a comparative analysis with assumptions held constant over various size and location criteria.

Thus, decisions regarding space per inmate and staffing costs per inmate are key determinants of efficiency and these decisions appear to be more important than jail size as a determinant of efficiency. The existence of economies of size in larger jails with over 50 inmate capacity appears to be somewhat doubtful and does not appear to be supported by the evidence and reviews conducted as part of this study.

X. Selected Observations and Implications from Site Visits.

Observation 1. The accounting practices used in many counties fail to recognize the management incentives and value of matching expenditures and revenues for specific functions of government. In the case of jail services, no single department and/or budget is responsible for the entire jail budget decision-making and accounting functions.

For example, when out of county prisoners are housed in a local county jail, the revenue received for housing is often placed in the county's general budget account. The expenditures associated with housing this prisoner, such as food and personal items, are charged as expenses to the budget of the jail or sheriff's department. The disassociation of revenue from expenditures creates the perception that the jail has exceeded its budget, when in reality, the result was a net gain in revenue to the hosting county because the rate charged was greater than the marginal costs of housing the prisoners. This problem was expressed universally when law enforcement personnel were interviewed.

Implication: If revenues and expenditures for jail services were associated under one budget, local sheriffs, chief jail administrators and supervisors would have greater information and incentives to make more efficient management and policy decisions.

Observation 2. There appears to be no standard method of budgeting for county jail services. Some counties include the jail expenditures in the sheriff's department budget while other

counties have a separate jail budget for most of the expenditures. In many cases, the insurance and utility expenditures were not assigned to either the jail budget or the sheriff's budget. They were simply absorbed elsewhere in the county's general fund budget.

Implication: With the information systems that presently exist, sheriffs, chief jail administrators, and county supervisors cannot make comparisons across counties as to the efficiency and cost of local jail services.

Observation 3. One sheriff indicated there was currently 138 outstanding warrants and 35 people waiting to serve jail time. He indicated that the county attorney does not push for jail time because the jail is usually full and the county cannot afford to ship prisoners to neighboring counties. He suggests that some judges modify decisions and assign monetary and community service fines instead of jail time. Other sheriffs agreed that lack of access to local jail capacity raises important legal issues regarding uniform and equal access to justice in rural areas of Iowa.

Implication: Lack of local access to local jail capacity is causing the local justice system to alter sentences from jail time to other forms of sentences such as monetary fines and community service. This may raise constitutional issues concerning equal access to or application of justice.

Observation 4. Some jail administrators would rather have empty cells than to have their expenditures increased under the current accounting methods. Market signals are not translated into management incentives because revenues are not the responsibility of the jail manager.

Implication: Some counties are foregoing the opportunity to generate additional county revenues without raising taxes.

Observation 5. Counties that are located along interstates or that have significant tourist areas claim to have a disproportionate number of inmates based on counties with similar population that are not located near interstates or tourist areas.

Implication: To the degree that interstate highways and tourism are of a federal or state benefit versus local benefit, perhaps a legitimate argument can be made for state and federal contributions to local jail services in counties that have increased costs associated with non-residents.

Observation 6. The location of the jail with regard to the courthouse has an impact on the time requirement placed upon certified peace officers for transportation of inmates to and from the court proceedings. It appears that if the jail is located within the courthouse, jailers are more likely to be used for walking inmates to the court proceeding. In this case total costs are also reduced, because the required time for transporting prisoners is reduced and the typical jailor is paid less than a deputy.

Implication: Cost of jail services generally increase as proximity between the jail and court services is increased.

Observation 7. The staffing of a jail greatly impacts the costs associated with operating it. Some smaller jails tend to use deputies to staff it, where larger capacity jails tend to be operated by full-time jailors. While the hourly wage of jailers is lower than that of deputies, the number of staffing hours per prisoner day is typically greater. The use of jailers allows deputies to perform their tasks as certified peace officers by freeing up their time for patrol and other assigned law enforcement functions. None of the counties interviewed for the study that used certified peace officers for jailer functions, appeared to be willing to reduce the number of peace officers if full-time jailers were added.

Implication: No cost savings would likely occur from adding jailors in smaller jails, but additional peace officer's time for local law enforcement duties would likely result.

Observation 8. The feeling was expressed by jail staff that when out-of-county prisoners were accepted, the transferring jurisdiction often attempted to send inmates that have health problems or behavioral problems. In most cases, the receiving county wanted to retain a right of refusal for all prisoners transferred into the county.

Implication: Allowing state prisoners and other county prisoners to be housed in the local county may significantly increase costs for the county if care is not used in accepting prisoners.

Observation 9. Currently an "every county for themselves system" is used to find available space for prisoners among counties with available jail space. This approach may result in wasted time and inefficiency. Use of electronic communications can reduce transportation and coordination time between neighboring jails, prisons and jails, and jails and courtrooms.

Implication: Internet communication and/or regional or statewide networking over the ICN could be used to organize statewide logistics and create a statewide market for housing prisoners in a way that reduces local law enforcement/and jail costs. Adoption of communication technologies may also lower the costs of transporting prisoners between jails and courtrooms in the future. While much of this savings is likely to accrue to the local law enforcement budget and lower transportation costs charged to the jail budget, it may or may not reduce jailor time.

Observation 10. Some counties may appear to be pricing their available space at rates below full-cost, while others may be charging a significant profit. Still other counties have little idea of the full costs for transporting prisoners to other counties.

Implication: Access to greater information on housing prices charged may lead to more informed decisions about where to transfer and house prisoners more efficiently.

Observation 11. Most counties have little idea about the costs of transporting prisoners to other jails and whether it might be cheaper to expand an existing jail or to build a new one. Often, the cost of transportation is allocated to the Sheriff's department rather than the jail service budget. However, these costs are a part of the jail functions regardless of which budget is expensed.

Implication: Many counties have little information for comparing the relative efficiency of alternative local strategies for housing prisoners.

Observation 12. Recent proposals for county housing of state prisoners with sentences of less than two years in local county jails raises concern about additional standards that might also be required by the state such as libraries and structured education programs. In addition, there was concern that the state might attempt to reclassify state prisoners as local prisoners and create for itself a long term jail housing opportunity without paying the full costs. Law enforcement was concerned that the state might try to dictate terms and play one county against another in negotiating any long term contracts.

Implication: Perhaps counties wishing to consider housing of state prisoners should meet and agree to initial contract terms as a group before any state regulations or contracts are passed or negotiated. This approach would define the terms of trade and could result in agreements that are are efficient and in the mutual interests of both the state and local governments involved.

Observation 13. Jails typically have occupancy at over 100 percent of capacity on weekends and at 75 percent of capacity on weekdays.

Implication: Judges could assist in enhancing local jail efficiency by requiring a higher proportion of sentences to be served during the week when normal slack occupancy occurs.

Observation 14. Currently, all prisoners regardless of classification are often held in local maximum security jail settings even though most local inmates pose relatively little risk to society. The greatest percentage of local inmates are those who are alleged to have committed less violent offenses.

Implication: One approach to maintaining a local jail presence and reducing the costs in constructing new local jails, would be to build a selected number of regional sites for regional jails specifically designed to handle the more violent local inmates. Thus resources could be pooled to build the more costly regional jails that focus on maximum security. This would allow local sheriffs to focus use of local jails on incarcerating less violent offenses. In turn this may require less costly jails locally.

Observation 15. Female guards can guard male inmates but males guards cannot guard female inmates. Therefore, three or four part-time matrons are often required to provide 24-hour observation in small jails when a female prisoner is received.

Implication. In smaller jails, it is likely to be more efficient to send female inmates to larger regional facilities where appropriate separation capacity and female staff are available. Therefore, some if not all regional jail facilities should provide some focus on housing for female inmate populations.

Observation 16. County transportation costs and distance between the local county and Oakdale vary by county. Oakdale is the inmate intake from counties to the state corrections system. A county 200 miles away from Oakdale is going to have greater transportation costs per prisoner in the county than counties located in close proximity to Iowa City.

Implication: Perhaps the state might consider covering transportation costs between the county facilities and the state corrections system in order to equalize costs and provide equal access to state corrections. This may also have implications for equalizing the application of judicial decisions on inmate sentences. If this were presently the state policy, the costs of housing state prisoners in county jails or transporting prisoners to regional jails would become a smaller step toward creation of an efficient two way inmate transportation and housing market.

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