

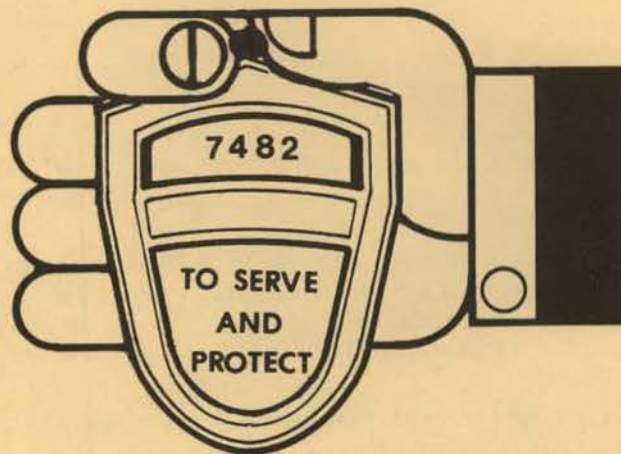
Cost of Public Service

Police Protection

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This is one of eight bulletins supported by Title V of the Rural Development Act of 1972 on estimating costs of public service in Idaho communities of various size. The services covered in the series are:

- Education
- Fire Protection
- Police Protection
- Sewage Collection and Treatment
- Sheriff Protection
- Solid Waste Disposal
- Water Supply

A worksheet for estimating costs for each service area is designed to facilitate citizen use. Relationships are used to derive costs and are expressed in terms of state averages. You may use the standards as given to derive cost estimates for the services or change them to reflect the situation in your community.

Extension Bulletin 602, *Residential Growth: Its Benefits and Costs to the Local Community*, is used as a format for an overall look at what effects increases in the number of residential dwellings and people have on revenues for the public and private sector and on costs in the public sector. The estimation procedure is outlined for cities, counties and school districts.

This publication outlines a method of estimating your community's increased costs in police protection caused by population growth.

About the Authors

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Cost of Public Service: Police Protection

N. R. Rimbey and N. L. Meyer

This publication presents a method of estimating expenditures for police protection. A method of estimating the impact of population growth on these expenditures is also detailed. The cost estimates derived through these processes are based on relationships derived that approximate the actual situation in communities and counties. The relationships are based on state or national averages and can be changed to reflect the situation in the community being considered. Worksheets are provided to assist in the estimation procedure.

Introduction

Idaho is currently one of the fastest growing states in the nation. This growth brings economic benefits such as increased tax revenue to the public sector, possibly more service-oriented jobs and increased spending in the private sector. This growth may also bring general social benefits such as meeting and interacting with people from different cultural backgrounds, more specialized health care and more cultural programs through schools and civic organizations.

However, this growth does not come without additional costs. Many communities and counties in Idaho are not prepared for this growth. The public sector (present residents) must handle the added costs of providing services to the new residents. For example, growth may create needs for a new sewage treatment plant, school buildings, fire and police facilities and equipment, water wells or reservoirs and garbage collection and disposal equipment. Sizable public expenditures may also be necessary for land acquisition and additional employees.

Areas can accommodate growth more easily if the public service infrastructure already exists. That means having excess capacity in the sewage treatment facility, school system and police department and that other services can absorb the population increases without the need for major capital expenditures. Excess capacity in public services does not exist in many rural areas.

The increasing of service capability coupled with the movement toward government spending limitations poses a severe problem for many Idaho communities. "How can we accommodate the rapid population growth and additional service demands of residents and finance the services with reduced or 'frozen' revenues?" This is the most perplexing issue facing state and local government officials.

One possible alternative for local government officials is a program which would require new development to pay its "fair share" of the added service costs. Although this may seem to be a simple policy move, this action will require certain kinds of information. For example, information should be collected and analyzed to determine: the present costs of various services, the estimated costs for new residents, when expansion of which capital facilities will be needed (based on capacities of existing systems and projected growth rates), and what the existing policy of the governmental unit is concerning who should pay the additional costs.

Present costs of services are available in the annual audit report or annual budget of the unit of government. The policy aspect may require investigation of zoning regulations, building permit procedures or conversations with a city or county administrator.

The cost estimates presented here are based on relationships or standards that typify state or national averages. Standards for each service are

presented with the intention that you will change or modify them to fit the situation in your municipality. Worksheets, an abbreviated interest table and sources of information within the municipality are also given to help you in the estimation process.

A word of caution should be injected at this point. The cost figures presented here are **estimates** of actual costs and should be analyzed carefully before basing policies upon them. To help you critically evaluate costs, remember that the standards given should be changed when they prove inaccurate. Variations between actual and estimated costs may result from using average figures, topography of the area, the time lag between estimation and construction and a variety of other circumstances.

Be advised, then, to use care in using the cost figures presented.

This publication was designed to give you, as a concerned citizen or government official, a **framework** for estimating the current costs of a public service. A method to estimate the added costs of population growth is also given. The service covered is police protection.

Methods of Estimating Expenditures

You can estimate costs several ways. The procedure used most often in fiscal impact studies is known as the average cost method. This involves:

1. Using the existing budget or audit report to derive current costs of services.
2. Dividing these costs by number of people or households to determine a per capita or per household cost for each service.

3. Projecting this cost to new residents by multiplying the per capita or household costs by the number of new residents or houses.

This technique may be adequate for projecting the operation and maintenance costs of services but will severely underestimate the impact if capital expansion is needed. The problem lies in basing the estimates on past costs.

A more reliable method is using average cost figures and adding estimated capital costs. In other words, you can use average cost figures from the budgets as well as the estimated increases in capital costs to derive estimates of the impact on expenditures.

The most reliable (and costly) estimation method is conducting a detailed audit of each department within the municipality to determine the actual costs per household (or resident) and determining the anticipated date and cost of needed facilities expansion. This would involve a detailed study of each employee's duties, the anticipated equipment and personnel needs and the municipality's projected growth rates. This procedure is obviously very time consuming and expensive. However, it is the most reliable method to support local policies which require new development to pay for added service cost.

The following section gives standards and procedures for estimating the existing costs of police protection and the added costs of development. This information should be used in conjunction with the publications on fire protection, sheriff protection, education, sewer, solid waste, and water and Extension Bulletin 602, **Residential Growth: Its Benefits and Costs to the Local Community**.

Police Protection

Police protection in Idaho varies considerably by community size. For example, the smaller communities are usually served by a one-person force. In some areas this person uses his own vehicle, is on call 24 hours each day and is usually quite dependent on the county sheriff or state patrol for support. The police "office" in smaller communities is usually the officer's home, and no jail facility is available. The officer may also be a part-time employee with other community duties such as water master, dog catcher, etc.

Larger communities are served by police forces with full-time officers and generally have their own police offices and jails. The larger forces usually have more job specialization such as robbery, homicide and other crime areas. Larger police forces also usually mean greater expenditures for equipment — more automobiles, sophisticated communication systems and other special equipment.

This publication gives standards that can be used to estimate the costs of providing police protection and the impact of growth on these costs. The data are based on returns from a mail questionnaire sent to Idaho police chiefs in March of 1978. The questionnaire was sent to 54 police departments and had a response rate of 74 percent. The returns were grouped by community population, and mean values were derived for number of personnel, salaries and other figures.

The following standards are used to estimate police service expenditures:

Standard 1 — The number of officers per 1,000 population varies with the population served.

Population	Officers per 1,000 population
up to 999	2.00
1,000 to 2,499	2.25
2,500 to 24,999	1.80
25,000 and over	1.60

Standard 2 — The salary and benefits per officer varies with the population served.

Population	Average salary	Average benefits	Salary and benefit cost per officer
up to 999	\$ 5,390	\$ 327	\$ 5,717
1,000 to 1,499	7,910	1,466	9,376
1,500 to 1,999	9,014	1,384	10,398
2,000 to 3,999	10,425	1,393	11,818
4,000 to 14,999	10,503	2,182	12,685
15,000 and over	14,107	3,189	17,296

Standard 3 — The ratio of support staff (secretary, dispatcher, etc.) per officer varies with the population served.

Population	Support staff per officer
0 to 1,499	0
1,500 to 4,499	.50
4,500 to 9,999	.33
10,000 and over	.30

Standard 4 — The salary and benefits of support staff vary with the population served.

Population	Average salary	Average benefits	Average annual salary cost per staff
up to 999	\$ 0	\$ 0	\$ 0
1,000 to 5,499	6,538	541	7,079
5,500 to 14,999	8,010	1,509	9,519
15,000 and over	8,100	1,827	9,927

Standard 5 — The ratio of vehicles per officer varies with the population served. The vehicle cost per unit remains constant for all populations served.

Population	Ratio of vehicle per officer
500 to 4,499	.60
4,500 to 9,999	.51
10,000 and over	.23

Communities with populations of less than 500 people are served by part-time officers who are on call 24 hours a day and use their own vehicle. The average cost of each police car for all populations (500 and above) is \$5,192. The range of values is \$3,700 to \$6,583.

Standard 6 — The total annual maintenance and operation cost of vehicles can be expressed as a percentage of the total cost of the vehicles.

Population	Maintenance and operation as % of vehicle cost
up to 999	29
1,000 to 9,999	57
10,000 and over	85

Standard 7 — Other equipment (radar, communication system, typewriters, etc.) cost can be

Population	Other equipment as % of total vehicle cost
500 to 1,999	47
2,000 to 4,499	55
4,500 to 9,999	72
10,000 and over	63

Standard 8 — The total square feet of office building and jail varies with the population served. The smaller communities (up to 749 population) generally have no office space, except for the officer's private home, and no jail facility. These communities rely upon the county sheriff's office for confinement and other support.

The communities with populations from 750 to 2,499 people tend to have office space ranging from 150 square feet to 1,440 square feet with an average of 650 square feet. Communities of 2,500 to 6,999 persons report office space ranging from 400 square feet to 2,200 square feet with an average of 1,250

Table 1. Amortization rates for different interest rates and loan periods.

Interest rate	Years					
	3	5	10	15	20	30
7	.381052	.243891	.142378	.109795	.094393	.080586
8	.388034	.250456	.149029	.116830	.101852	.088827
9	.395055	.257092	.155820	.124059	.109546	.097336
10	.402115	.263797	.162745	.131474	.117460	.106079
11	.409213	.270570	.169801	.139065	.125576	.115025
12	.416349	.277410	.176984	.146824	.133879	.124144
13	.423522	.284315	.184290	.154742	.142354	.133411
14	.430700	.291200	.191700	.162800	.150900	.142800
15	.437900	.298300	.199200	.171000	.159700	.152300

This table will help you calculate the annual payments on investments for community services. For example, the annual payments for a \$40,000 loan at 10 percent interest rate for 15 years can be calculated:

$$\begin{array}{rcl} \text{Loan amount} \times \text{amortization rate} & = & \text{annual payment} \\ (\$40,000) & \times & (.131474) \\ & = & (\$5,259) \end{array}$$

An annual payment of \$5,259 would pay the principal and interest on this loan and retire the debt in 15 years. If an interest rate and the time period for a loan are not listed in this table, your local bank can provide the figures.

square feet. Again, communities of these sizes rely heavily upon the county sheriff's department for confinement facilities. Confinement space and care and feeding of prisoners are usually contracted.

Communities of 7,000 to 9,999 persons have offices and jail facilities ranging from 1,400 square feet to 2,500 square feet with an average of 1,600 square feet. The larger communities (10,000 to 25,999 population) generally have their own jail facilities. The total square footage of the facilities range from 6,187 to 8,000 (6,500 square feet average). Several of the communities in the 7,000 to 9,999 range still depend upon the county sheriff's office for confinement.

Although there is no definite breaking point, it appears that in the population range of 9,000 to 10,000, the shift is made to larger office facilities with jail facilities attached. For communities with populations from 26,000 to 40,000, the office facilities range from 8,000 to 27,400 square feet with an average of 15,800 square feet.

Population	Average facility area in square feet
up to 749	—
750 to 2,499	650
2,500 to 6,999	1,250
7,000 to 9,999	1,650*
10,000 to 25,999	6,500*
26,000 to 40,000	15,800*

*including jail facilities

Standard 9 — The average construction cost per square foot of building space varies with population.

Population	Cost per square foot
up to 999	\$ 8.00
1,000 to 2,499	25.00
2,500 to 7,999	56.00
8,000 to 10,999	57.00
11,000 to 25,999	63.00
26,000 to 40,000	65.00

Standard 10 — Maintenance and operation of building and other costs (training, uniforms, office supplies, etc.) can be expressed as a percentage of the department's total wages and benefits. This figure ranges from 6.5 to 19.2 percent with an average of 10 percent.

Standard 11 — Financing for the vehicles and office is available as 10 percent loans for 3 years for the vehicles and 30 years for the building. A 10 percent salvage or resale value for each of these expenditures is assumed (Table 1).

Estimating Police Protection's Cost

Using the 11 standards listed, you can estimate the cost of police service for a community of a given size. For example, consider a community of 2,000 people.

Step 1 — Estimate the number, salary and benefits of the officers using Standards 1 and 2:

$$2,000 \text{ population} \times .00225 = 4.5 \text{ officers}^1$$

Estimate police salaries and benefits by multiplying:

$$\begin{array}{l} 4.5 \text{ officers} \times \$10,425 \text{ salary/officer} = \$46,913 \text{ salaries} \\ 4.5 \text{ officers} \times \$1,393 \text{ benefits/officer} = \$6,269 \text{ benefits,} \\ \text{Officer salaries and benefits} = \$53,182 \end{array}$$

Step 2 — Estimate the number, salaries and benefits of the support staff (Standards 3 and 4):

$$\begin{array}{l} 4.5 \text{ officers} \times .5 \text{ support staff/officer} = 2.25 \text{ support staff,} \\ 2.25 \text{ support staff} \times \$6,538 \text{ salary/staff} = \$14,711 \text{ salaries,} \\ 2.25 \text{ support staff} \times \$541 \text{ benefits/staff} = \$1,217 \text{ benefits,} \\ \text{Support staff salaries and benefits} = \$15,928 \end{array}$$

¹Fractional results of officers or vehicles are handled as follows. Officers may be hired on a part-time basis. In this case, for example, there are an estimated 4.5 officers on the police force — four full-time and one working half-time. Fractions of vehicles may indicate an auto that is more expensive because of more options than the standard police car has.

Step 3 — Calculate the number and total cost of vehicles (Standard 5):

$$4.5 \text{ officers} \times .6 \text{ vehicle/officer} = 2.7 \text{ vehicles.}$$

$$2.7 \text{ vehicles} \times \$5,192 \text{ per vehicle} = \mathbf{\$14,018} \text{ total vehicle cost}$$

Step 4 — Calculate the annual cost of vehicle ownership. The annual cost of owning the vehicle is dependent upon the community's buying the vehicles on a contract over time (much like a private citizen buying a vehicle with a bank loan and making monthly payments). Using Standard 11, the total vehicle cost is amortized for the given loan rate and time period (in this case, 10 percent and 3 years). The salvage or resale value of the vehicles (10 percent) is deducted from the total vehicle cost before amortizing. This is done to indicate a trade-in or resale value of the vehicles when replacement vehicles are purchased. Table 1 gives amortization rates for other interest rates and time periods:

$$\begin{aligned} &\$14,018 \text{ total vehicle cost} - \$1,402 \text{ salvage value} \\ &= \$12,616 \times .402115 \text{ amortization rate} \\ &= \mathbf{\$5,073} \text{ annual vehicle cost} \end{aligned}$$

Step 5 — Estimate the annual maintenance and operation cost of the vehicles by multiplying the total vehicle cost by the appropriate percentage figure in Standard 6:

$$\begin{aligned} &\$14,018 \text{ total vehicle cost} \times 0.57 \\ &= \mathbf{\$7,990} \text{ annual maintenance and operation cost of vehicles} \end{aligned}$$

Step 6 — Estimate the cost of other equipment by multiplying the total vehicle cost by the appropriate percentage in Standard 7:

$$\begin{aligned} &\$14,018 \text{ total vehicle cost} \times 0.55 \\ &= \mathbf{\$7,710} \text{ other equipment cost} \end{aligned}$$

Step 7 — Estimate the square footage of the office/jail complex by using Standard 8. This figure is then multiplied by the construction cost figure in Standard 9 to get total construction cost:

$$\begin{aligned} &650 \text{ square feet} \times \$25 \text{ per square foot} \\ &= \mathbf{\$16,250} \text{ total construction cost of office/jail} \end{aligned}$$

This figure is again amortized (Standard 11) after the salvage value is deducted (10 percent for 30 years):

$$\begin{aligned} &\$16,250 \text{ total construction cost} - \$1,625 \text{ salvage} \\ &= \$14,625 \times 0.106079 \text{ amortization rate} \\ &= \mathbf{\$1,551} \text{ annual cost office/jail} \end{aligned}$$

Step 8 — Calculate the annual maintenance and operation of the building and other costs by multiplying the department's total wages and benefits by the percentage figure in Standard 10:

$$\begin{aligned} &\$62,719 \text{ total wages and benefits} \times 0.10 = \mathbf{\$6,272} \\ &\text{maintenance and operation of building and other costs} \end{aligned}$$

Step 9 — Calculate the total annual cost of the police department serving a community of 2,000 people by summing the wages and benefits of officers and staff, annual vehicle cost, maintenance and

operation of vehicles, other equipment cost, annual building cost and the maintenance and operation of the building and other costs.

Step 1. Officers salaries and benefits	\$53,182
Step 2. Support staff salaries and benefits	15,928
Step 4. Annual vehicle cost	5,073
Step 5. Annual vehicle maintenance and operation	7,990
Step 6. Other equipment cost	7,710
Step 7. Annual office/jail cost	1,551
Step 8. Maintenance and operation of office/jail and other costs	6,272
Total annual police cost	<u>\$97,706</u>

Estimate the cost per capita by dividing the total cost by the population or households:

$$\begin{aligned} &\$97,706 \div 2,000 \text{ population} \\ &= \$48.85 \text{ per capita} \\ &\text{or} \\ &\$97,706 \div 625 \text{ households} \\ &= \$156.33 \text{ per household of 3.2 people.} \end{aligned}$$

Estimating Population Growth's Impact

You can also use the standards to estimate the impact of population growth on police expenditures. In our example community of 2,000 residents, what would be the impact of a population increase of 1,000 people?

The degree of impact will vary because of an individual community's circumstances. For example, are the new residents from a higher crime risk group than the existing residents? Will special personnel be needed to help with the special problems? Will more patrols be needed to service the area? Will the new population be housed within existing city boundaries or in outlying areas? These examples of special considerations will affect the cost of police protection and vary from one community to another.

Communities facing population increases should consider these kinds of questions when planning for growth. This example estimates the added cost of population growth using the standards as written. You should change the standards to fit the situation in your community.

The variables affected and the added costs are:

Standard 1 — The number of police officers will increase from 4.5 to **5.25**.

Standard 2 — Salary expenditures will increase from \$46,913 to \$54,731. Benefits will increase from \$6,269 to \$7,313. The total salary and benefit increase is estimated to be **\$8,862**.

Standard 3 — Support staff will increase from 2.25 persons to **2.6** persons.

Standard 4 — Support staff salary expenditures will increase from \$14,711 to \$16,999. Support staff benefits will increase from \$1,217 to \$1,407. The total increase in support staff salaries and benefits is estimated to be **\$2,478**.

Standard 5 — An estimated 3.15 automobiles will be needed for a police department serving 3,000. The total vehicle cost will increase from \$14,018 to \$16,355. The annual vehicle cost will increase from \$5,073 to \$5,919, or an annual increase of \$846 (Standard 11).

Standard 6 — The annual maintenance and operation of vehicles will increase from \$7,990 to \$9,322 or an annual increase of \$1,332.

Standard 7 — Other equipment costs will increase from \$7,710 to \$8,995, an annual increase of \$1,285.

Standard 8 — The office/jail space will nearly double from 650 square feet to 1,250 square feet. In other words, the office/jail facility will require expansion of 600 square feet.

Standard 9 — Total construction cost will increase from \$16,250 to \$70,000. Note the difference in the cost of construction per square foot. This suggests a much higher quality building than the office/jail for a community of 2,000 people. The annual cost of the office/jail will increase from \$1,551 to \$7,426, an increase of \$5,875.

Standard 10 — The maintenance and operation of the building and other costs will rise from \$6,272 to \$7,888, an increase of \$1,616.

Total annual cost of the department is estimated to increase from \$97,706 to \$120,000, an increase of \$22,294. The total annual cost per resident would be \$40.00 or \$127.93 per household of 3.2 persons. The decreased cost per capita and per household are because of efficiencies from a larger scale of service provision.

	2,000 population	3,000 population	Change
Step 1	\$53,182	\$62,044	\$ 8,862
Step 2	15,928	18,406	2,478
Step 4	5,073	5,919	846
Step 5	7,990	9,322	1,332
Step 6	7,710	8,995	1,285
Step 7	1,551	7,426	5,875
Step 8	6,272	7,888	1,616
	\$97,706	\$120,000	\$22,294
per capita	\$ 48.85	\$ 40.00	
per household	\$156.33	\$ 127.93	

Observations

Table 2 presents estimated annual costs for different community sizes. Several observations about the cost estimates in this table are:

1. The annual per capita cost generally increases over the range of populations (\$18.42 per capita to \$47.08 per capita). However, this is not a smoothly rising cost curve. Some of the communities show much higher per capita cost than

others. The addition of salaries and benefits for support staff and office space costs may account for this difference.

2. The change from single shift with officers on call during off-hours to a multi-shift department appears to take place around the 10,000 population level. The ratio of vehicles to officer declines from 0.51:1 to 0.23:1 at this point. This suggests a double shift where there are less than half as many vehicles as were needed in the single shift department.
3. The standards may also be used in situations other than the two described here. For example, the personnel, building and vehicle sectors may be used by communities considering expansion in those areas. Physical terms such as number of officers on staff, square feet of building space or numbers of vehicles may be more worthwhile for certain communities than the cost estimates.
4. This publication demonstrates how to derive estimated costs and where to get information; it does **not** show what a community's police costs should be. The cost relationships given in Table 2 are for illustration only and **should not** be accepted as the cost for a given community. Figures concerning local conditions should be substituted for those given in the standards to derive a community's costs.

Community Information Sources

- The city police department should be able to provide information on personnel needs and requirements, special problems concerning growth, most of the cost figures listed as assumptions in this publication and equipment used and needed.

- The city budget will also provide information on the current police service cost. Generally, the budget will not provide information on equipment and personnel. Budgets are usually prepared on the basis of revenues and expenditures and emphasize gross amounts. It is usually difficult to tell what is taking place within a department by using only a budget.

- The building inspector should be able to tell you the necessary building requirements for a jail/office complex. This information would be helpful if the jail/office is to be expanded or a new one constructed.

- Local financial institutions will be able to provide information on loan rates and other terms concerning financing the building and equipment.

- The city manager may be able to provide information on some of the concerns facing the police department, expected growth rate and growth areas and other considerations regarding the police department.

Table 2. Annual police service costs by community size.

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
Population	No. of officers	Officers salary & benefits	No. of support staff	Support staff salary & benefits	No. of vehicles	Total vehicle cost	Annual vehicle cost	Maint. & oper. of vehicles	Other equipt. costs	Office/jail space (sq. ft.)	Total office/jail cost	Annual office/jail cost	Maint. & oper. of building	Total annual cost	Total cost per capita
500	1.0	\$ 5,717	0	\$ 0	.6	\$ 3,115	\$ 1,127	\$ 903	\$ 1,464	0	\$ 0	\$ 0	\$ 0	\$ 9,211	\$18.42
1,000	2.25	21,096	0	0	1.4	7,269	2,631	4,143	3,416	650	5,200	496	2,080	33,862	33.86
1,500	3.4	35,353	1.7	12,034	2.0	10,384	3,758	5,919	4,880	650	16,250	1,551	4,672	68,167	45.44
2,000	4.5	53,181	2.3	16,282	2.7	14,018	5,073	7,990	7,710	650	16,250	1,551	6,849	98,636	49.32
2,500	4.5	53,181	2.3	16,282	2.7	14,018	5,073	7,990	7,710	1,250	70,000	6,683	6,849	103,767	41.51
3,000	5.4	63,817	2.7	19,113	3.2	16,614	6,013	9,470	9,138	1,250	70,000	6,683	8,176	122,410	40.80
3,500	6.3	74,453	3.2	22,653	3.8	19,730	7,140	11,246	10,852	1,250	70,000	6,683	9,575	142,602	40.74
4,000	7.2	91,332	3.6	24,777	4.3	22,326	8,080	12,726	12,502	1,250	70,000	6,683	11,448	167,548	41.89
4,500	8.1	102,749	2.7	19,113	4.1	21,287	7,704	12,134	11,708	1,250	70,000	6,683	12,015	172,106	38.25
5,000	9.0	114,165	3.0	21,237	4.6	23,883	8,644	13,613	17,196	1,250	70,000	6,683	13,351	194,889	38.98
5,500	9.9	125,582	3.3	31,413	5.1	26,479	9,582	15,093	19,065	1,250	70,000	6,683	15,480	222,898	40.53
10,000	18.0	228,330	5.4	51,403	4.1	21,287	7,704	18,094	13,411	6,500	370,500	35,372	27,582	381,896	38.19
15,000	27.0	466,992	8.1	80,409	6.2	32,190	11,650	27,362	20,280	6,500	409,500	39,095	53,974	689,262	45.95
20,000	36.0	622,656	10.8	107,212	8.3	43,094	15,596	36,630	27,149	6,500	409,500	39,095	71,965	920,303	46.02
25,000	40.0	691,840	12.0	119,124	9.2	47,766	17,287	40,601	30,093	6,500	409,500	39,095	79,961	1,018,001	40.72
40,000	64.0	1,106,944	19.2	190,598	14.7	76,322	27,621	64,874	48,083	15,800	1,027,000	98,049	127,938	1,664,107	41.60

A. Population × Standard 1 value

B. A × Standard 2 value

C. A × Standard 3 value

6 D. C × Standard 4 value

E. A × Standard 5 value

F. E × \$5,192 (Standard 5)

G. F × amortization rate (Standard 11)

H. F × Standard 6 value

I. F × Standard 7 value

J. Standard 8

K. J × Standard 9 value

L. K × amortization rate (Standard 11)

M. B + D × .0986

N. B + D + G + H + I + L + M

O. N ÷ population

Bibliography

The Law Enforcement Planning Commission, Boise, Idaho, provided a list of Idaho police departments and chiefs, addresses and phone numbers for the survey upon which this publication is based.

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WORKSHEET

Estimating Police Expenditures

A.	_____	=	(_____)	×	_____	)
	Number of officers		Population		Standard 1	
B.	_____	=	(_____)	×	_____	)
	Officer salaries & benefits		(A) Number of officers		Standard 2	
C.	_____	=	(_____)	×	_____	)
	Number of support staff		(A) Number of officers		Standard 3	
D.	_____	=	(_____)	×	_____	)
	Support staff salaries and benefits		(C) Number of support staff		Standard 4	
E.	_____	=	(_____)	×	_____	)
	Number of vehicles		(A) Number of officers		Standard 5	
F.	_____	=	(_____)	×	_____	)
	Total vehicle cost		(E) Number of vehicles		Standard 5	
G.	_____	=	(_____)	×	_____	)
	Annual vehicle cost		(F) Total vehicle cost		Standard 11 (Table 1)	
H.	_____	=	(_____)	×	_____	)
	Annual maintenance & operation cost		(F) Total vehicle cost		Standard 6	
I.	_____	=	(_____)	×	_____	)
	Other equipment cost		(F) Total vehicle cost		Standard 7	
J.	_____	=	(_____)	×	_____	)
	Office jail square feet		Population		Standard 8	
K.	_____	=	(_____)	×	_____	)
	Total construction cost		(J) Office jail square feet		Standard 9	
L.	_____	=	(_____)	×	_____	)
	Annual cost of building		(K) Total construction cost		Standard 11 (Table 1)	
M.	_____	=	(_____)	+	_____	)
	Annual building maintenance & operation cost		(B) Officers salaries & benefits		(D) Support staff salaries and benefits	
			×		_____	
					Standard 10	
N.	_____	=	(_____)	+	_____	)
	Total annual cost		(B) Officers salaries & benefits		(D) Support staff salaries & benefits	
			+		_____	
					(G) Annual vehicle cost	
					(H) Annual maintenance & operation cost	
			+		_____	
					(I) Other equipment cost	
					(L) Annual cost of building	
			+		_____	
					(M) Annual building maintenance & operation	
O.	_____	=	(_____)	÷	_____	)
	Annual cost per capita		(N) Total annual cost		Population	

WORKSHEET

Estimating Population Growth's Impact on Police Costs

Estimated population increase _____

A. _____	=	_____	-	_____
Number of new officers		Officers for new population (Standard 1)		Officers for previous population (Standard 1)
B. _____	=	(_____)	×	_____
New officers salaries & benefits		(A) Number of new officers		Standard 2*
C. _____	=	(_____)	×	_____
Number of new support staff		(B) Number of new officers		Standard 3*
D. _____	=	(_____)	×	_____
New support staff salaries & benefits		(C) Number of new support staff		Standard 4*
E. _____	=	(_____)	×	_____
Number of new vehicles		(A) Number of new officers		Standard 5
		- (_____)	×	_____
		Number of previous officers		Standard 5
F. _____	=	(_____)	×	_____
Total cost additional vehicles		(E) Number of new vehicles		Standard 5
G. _____	=	(_____)	×	_____
Annual additional vehicle cost		(F) Total additional vehicle cost		Standard 11 (Table 1)
H. _____	=	(_____)	×	_____
Additional annual maintenance & operation cost		(F) Total additional vehicle cost		Standard 6*
I. _____	=	(_____)	×	_____
Other additional equipment cost		(F) Total additional vehicle cost		Standard 7*
J. _____	=	(_____)	×	_____
Additional office/jail square feet		New population		Standard 8
		- (_____)	×	_____
		Previous population		Standard 8
K. _____	=	(_____)	×	_____
Total cost of new construction		(J) Additional office/jail square feet		Standard 9*
L. _____	=	(_____)	×	_____
Annual cost of new construction		(K) total cost of new construction		Standard 11 (Table 1)
M. _____	=	(_____)	+	_____
Annual new building maintenance & operation cost		(B) New officers' salaries & benefits		(D) New support staff's salaries & benefits
		× _____		
		Standard 10*		
N. _____	=	(B) New officers' salaries & benefits	+	(D) New support staff's salaries & benefits
Total additional annual cost				
+ _____	+	(G) Annual additional vehicle cost	+	(I) Other additional equipment cost
		(H) Additional annual maintenance & operation costs		
+ _____	+	(L) Annual cost of new construction	+	(M) Annual new building maintenance & operation cost
O. _____	=	(N) Total annual cost	÷	New population
Annual cost per new resident				
P. _____	=	(N) Total annual cost	÷	Total population*
Annual cost per resident of population growth				

*Use total new population when using this standard in your estimating.

Cost of Public Service: Police Protection is the fourth in a series of bulletins on estimating costs of public service in various size Idaho communities. Other bulletins in that series available from the University of Idaho Agricultural Information Department are as follows:

EXT 602	Residential Growth: Its Benefits and Costs to the Local Community	50 cents
EXT 604	Cost of Public Service: Education	25 cents
EXT 605	Cost of Public Service: Fire Protection	25 cents
EXT 607	Cost of Public Service: Sewage Collection and Treatment	25 cents
EXT 608	Cost of Public Service: Sheriff Protection	25 cents
EXT 609	Cost of Public Service: Solid Waste Disposal	25 cents
EXT 610	Cost of Public Service: Water Supply	25 cents

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