

Consumer Identification of Community Service Problems in Planning Region IV, North Dakota

William C. Nelson and Wayne Becker

Providing community services which meet federal and state standards and the needs of residents is becoming increasingly expensive in sparsely populated rural areas. New government standards and requirements are more often the cause of increased costs than is collective action by rural residents. This problem is particularly acute in the Great Plains states which share the common characteristics of low population density in rural areas and large distances between full service cities.

A joint effort by researchers in Texas, Nebraska, South Dakota and North Dakota has focused on identifying problems, needs and costs associated with the use of rural community services as indicated by residents.¹ Personal interviews were held with a random sample of 210 residents in three North Dakota counties.² These counties, Foster, Logan and Stutsman, were chosen on the basis of the size of the major city and rural population density in each county.

Services studied were water supply, sewage, solid waste disposal, fire protection, law enforcement, education and health. Questions were asked concerning frequency of use and source of services, costs, time, and distance traveled to use services, specific problems and level of satisfaction associated with services. This paper deals with only four questions: (1) within the last three years, what specific problems have you had with _____ (name of service)?; (2) which problem would you most like to see eliminated?; (3) would you be willing to pay an additional amount above your present cost to eliminate that problem?; and (4) are you getting your money's worth from what you spent on _____ (name of service)? Each question was repeated for each service. Comparison of North Dakota data is made with averages based on data from each of the four cooperating states.

¹This research was performed as part of a North Central project titled "The Economics of Institutional Arrangements For Viable Rural Communities in the Great Plains."

²An equal number of residents were selected from each county and from rural areas and cities in each county except from the city of Jamestown which was excluded from the study.

Dr. Nelson is associate professor, and Becker is a research assistant, Department of Agricultural Economics.

UTILITIES

Water Supply

Most municipal residents (82 of 105) obtained water from a municipal system, while nearly all rural respondents (99 of 105) obtained water from a private well. Only 16 of the 210 respondents stated that alternative water sources were available.

About half of the respondents (110 of 210) indicated one or more problems with water supply (Table 1). Hardness was the major problem for both rural and municipal respondents. Municipal respondents also identified color, odor and taste as problems, while rural residents mentioned iron, system failures and supply problems.

Hardness was identified most often as the problem most desired to be eliminated. However, less than half (13 of 38) were willing to pay an additional amount to eliminate it. Only one-third of the respondents (23 of 72) who identified other problems were willing to incur additional cost to eliminate them.

Sewage Systems

Municipalities provided sewage service to 85 of 105 residents, while 97 of 105 rural residents had private septic tank systems. Few of the respondents (40 of 210) identified sewage problems. Overloaded drain fields and plugged pipes were mentioned most frequently. Sixteen of the 40 respondents who mentioned problems stated that they were willing to pay an additional amount to eliminate sewage problems.

Solid Waste Disposal

Municipal or commercial collection of solid waste was the primary disposal method for 115 of

Table 1. Problems associated with water, sewage, and solid wastes.

Service and Problems	Frequency encountered ¹		Most wanted to be eliminated		Willing to pay to eliminate problem	
	city	rural	city	rural	city	rural
Water Supply						
Hardness	26	25	18	20	7	6
Color	18	1	9	1	2	1
Taste	14	4	9	1	3	—
Odor	12	1	5	—	2	—
Iron	7	9	4	9	2	4
System failures	5	7	4	5	1	2
Other ²	10	15	5	10	2	4
None	51	59	51	59	35	29
Total responses	143	121	105	105	54	46
Sewage Systems						
Overload drain field	1	14	1	10	1	3
Plugged pipes	7	7	7	6	4	1
Other ³	8	11	7	9	4	3
None	90	80	90	80	6	18
Total responses	106	112	105	105	15	25
Solid Waste Disposal						
Pickup miscellaneous	8	—	8	—	—	—
Other ⁴	6	4	6	4	—	2
None	91	101	91	101	14	2
Total responses	105	105	105	105	14	4

¹Multiple responses were allowed so totals may be greater than 105.
²Includes bacteria, salt, supply, slow repair, sand, city problems, unreliable repair.
³Includes odor, pipe breaks, low capacity.
⁴Includes odor, animals, time, expense.

the 210 respondents. Eighty-seven of the 95 respondents who hauled their own garbage, hauled it to private landfills or open dumps. The remaining eight residents hauled garbage to county or city landfills.

Eighteen respondents mentioned problems associated with solid waste and only two were willing to incur additional cost to eliminate them.

Seven residents mentioned problems with pickup, while five were concerned with animals feeding on garbage.

PROTECTIVE SERVICES

Fire Protection

Nearly all respondents (187 of 210) stated they experienced no problems with fire protection (Table 2). Most problems reported were associated

Table 2. Problems associated with fire and police protection.

Service and Problems	Frequency encountered ¹		Most wanted to be eliminated		Willing to pay to eliminate problem	
	city	rural	city	rural	city	rural
Fire protection						
Slow response	2	10	2	10	—	4
Other ²	5	6	5	6	1	2
None	98	89	98	89	6	10
Total responses	105	105	105	105	7	16
Police protection						
Vandalism	4	12	2	11	1	—
Unequal enforcement	10	—	10	—	2	—
Lax enforcement	4	4	3	4	—	1
Other ³	14	7	13	4	4	2
None	77	86	77	86	21	16
Total responses	109	108	105	105	28	19

¹Multiple responses were allowed so totals may be greater than 105.
²Includes poor organization, faulty equipment, slow reporting system, coverage area too large, false alarms.
³Includes traffic offences, drugs, cattle rustling, trespassing, lack of personnel, problem personnel, distance, respect for law.

with response time. Seven of the 23 residents reporting problems were willing to pay an additional amount for elimination.

All but four respondents stated their primary source of fire protection was a municipal and/or rural department. Several residents also cited personal efforts as a source of fire protection. Eighteen respondents reported fires on their property in the past three years. The average loss per fire was \$4,061, and this high average was due primarily to two large fires. Most fires reported were prairie or machinery fires.

Police Protection

County sheriff's office, North Dakota highway patrol and municipal police were cited by 205, 141 and 93 respondents, respectively, as sources of law enforcement. Eighty respondents reported that law enforcement agencies made regular patrols near their property. Seventeen requests for assistance had been made during the last three years. Law enforcement personnel responded in less than 30 minutes in 12 of the 17 cases, and 15 of 17 respondents indicated satisfaction with the service received.

Vandalism and minor theft were the most frequently reported violations of the law. Unequal enforcement was the most common problem associated with law enforcement agencies. Seventy-eight per cent of the respondents reported

no problems of either the violation or agency types. Only 10 of the 47 respondents who indicated problems were willing to incur additional costs to eliminate the problem.

EDUCATION & MEDICAL SERVICES

Education

About half of the respondents (101 of 210) had one or more family members enrolled in school, with an average of 2.3 students per family. The families with students spent an average of \$249 annually for food, lodging, books and supplies, but excluding tuition and fees.

Lack of special courses, in most cases vocational courses, was the most frequently mentioned problem (Table 3). More respondents were willing to incur additional cost to solve this problem than other education problems. Discipline in schools, problems with teachers, size of school and high cost were each mentioned by 5 to 10 per cent of the respondents. Forty-three per cent of the respondents mentioned one or more problems with education, which was the second highest percentage of any of the seven services.

Health Delivery

Fifty-three per cent of respondents were located more than 10 miles from a medical doctor, and 70 per cent live more than 10 miles from a hospital. Ambulance service was more than 10

Table 3. Problems associated with education and health delivery services.

Service and Problems	Frequency encountered ¹		Most wanted to be eliminated		Willing to pay to eliminate problem	
	city	rural	city	rural	city	rural
Education						
Lack special courses	19	16	19	16	11	10
Discipline	13	6	8	4	—	—
Problems with teachers	11	6	6	5	4	2
School too small	6	8	5	4	5	2
High costs	6	6	6	6	—	—
Other ²	4	13	3	9	1	5
None	58	61	58	61	26	25
Total responses	118	115	105	150	47	44
Health Delivery						
Long wait in office	6	12	3	10	—	1
Unable to obtain appointment	3	6	3	5	—	—
Long wait for appointment	3	6	3	6	1	2
Dislike doctor	7	1	7	1	1	—
No doctor in town	5	1	5	1	2	1
Other ³	2	4	2	3	—	2
None	82	79	82	79	19	20
Total responses	108	109	105	105	23	26

¹Multiple responses were allowed so totals may be greater than 105.

²Includes school too large, wrong courses, lack of equipment, grading process, busing.

³Includes lack of transportation, no house calls, distance.

Table 4. Summary of responses from North Dakota and four state averages.

Service	Occurrence of problems		Willing to pay to eliminate problems		Are you receiving your money's worth - yes	
	N.D. 4-state average		N.D. 4-state average		N.D. 4-state average	
Water	48%	45%	17.1%	20.7%	98.6%	93.8%
Sewage	19	29	7.6	9.4	97.6	93.4
Solid waste	9	22	0.9	7.1	92.8	88.8
Fire protection	11	15	3.3	6.8	93.3	89.8
Police protection	22	14	4.8	2.2	91.9	80.5
Education	43	49	19.0	17.2	89.0	66.5
Health	23	33	4.8	6.7	92.8	80.6

miles away for 40 per cent of the respondents. The majority of respondents (124 of 210) incurred non-medical costs of securing medical assistance of less than \$100, while 82 respondents reported costs of \$100 to \$1,000.³

Three of the major problems with health services were the time spent waiting for an appointment or in the office (Table 3), absence of or dislike of the local doctor. Few of the respondents expressed willingness to pay more to remove the problem.

NORTH DAKOTA AND REGION COMPARISON

North Dakota respondents indicated a greater frequency of problems than the average of the four-state regional respondents in only two services, water supply and police protection (Table 4). The relative level of problem occurrence in North Dakota was similar to that in Texas, Nebraska and South Dakota. North Dakota residents expressed a greater willingness to pay to eliminate problems associated with police protection and education than did respondents from the other states and were more likely to believe they were getting their money's worth from current expenditures.

Water and education were the most frequently mentioned problems in North Dakota and in the other states. A greater willingness to pay also occurred with these two services. Education also was rated as the poorest current expenditure in terms of the respondents getting their money's worth.

CONCLUSIONS

The authors of this paper and researchers in Texas, Nebraska and South Dakota expected to find higher frequency of problems and willingness to pay, and lower level of satisfaction with use of current expenditures than were indicated by re-

spondents.⁴ The low frequency of problem identification may be due to: (1) no real problem exists; (2) problems exist, but respondents are not aware of them; (3) problems exist, but are within the level expected and accepted by respondents as normal; and/or (4) respondents assume many of the services are private responsibilities and are not "public" problems.

The low percentage of respondents who identified problems and were willing to pay an additional amount may indicate: (1) the identified problems were not serious; (2) solutions were believed to be too expensive to even consider additional payment; or (3) reallocation and reorganization was believed to be the solution rather than additional funds. Another reason for the lack of willingness to pay additional funds to eliminate a problem may be related to the concept of the "freerider." The "freerider" is one who receives the benefit of a service even though he does not contribute to its support. When this situation occurs, it is easy for an individual to let someone else pay the cost or to obtain federal or state grants to finance service improvement.

The data analyzed in this paper do not provide definite conclusions concerning actual quality of services or why respondents indicated a low frequency of problems and willingness to pay or a high degree of satisfaction with value received for current expenditures. The data reveal one reason why citizens in rural areas often do not respond to requests to attend meetings aimed at initiating change or solving problems. Many of the "problems" in rural areas have been created via establishment of federal or state standards which are applied uniformly across municipal and rural areas. Others are identified by professionals. The rural resident may not be showing apathy by nonattendance, but demonstrating that he has a different set of problems and priorities than those associated with the services included in this study.

⁴Researchers in other states included Dr. Lonnie Jones and Dr. Larry Morgan, Texas A. & M. University; Dr. Paul Gessamen, University of Nebraska; and Dr. William Kamps, South Dakota State University.

³Nonmedical costs included transportation, lodging, food, etc., not fees charged by doctors or hospitals.