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Local Public Finance Impacts of Rural Residential Development: A Case Study in the Rapid City School District of South Dakota

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Local Public Finance Impacts of Rural Residential Development

A Case Study in the Rapid City School District of South Dakota



Agricultural Experiment Station
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Local Public Finance Impacts of Rural Residential Development

A Case Study in the Rapid City School District of South Dakota

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One of the most obvious changes over the past 5 years is in the use of the land. Nowhere is this more apparent than in the Black Hills near Rapid City. Houses and roads have taken over land which only a few years ago was part of an agricultural operation.

This is only the beginning of change; as the population continues to grow and new families acquire housing, more land will be converted to residential, recreational, industrial, and commercial uses.

The decision that citizens must make is where will this change occur, and how will it happen. When land is changed from agricultural to non-agricultural uses, some important public policy issues must be considered. It is not the intention of the author to direct that change, but to (1) present the findings of researchers who have studied other rapidly developing rural residential areas, and (2) give a factual account of some of the non-monetary issues and the public financial impact of a new residential development about 5 miles south of Rapid City.

The Background

The rural-to-urban migration of the United States population in the decades after World War II has been reversed. Non-metropolitan areas gained 4.2% in population while metropolitan areas gained only 2.9% from 1970 to 1973.¹

As a consequence, many small rural communities are feeling development pressures. Citizens are asking:

1. Should the closely knit, compact pattern of urban development be maintained in the country, or should residential development be permitted to scatter at random throughout rural areas?
2. What are the economic, social, and environmental benefits and costs of each of the different residential development patterns?

The Gretna Study

Nebraska researchers have done some work on the southwest fringe of Omaha under their Title V Rural Development Act of 1972 that gives some answers to these questions.

Two development patterns were studied: the compact development pattern in Gretna and its fringe area, and the scattered development pattern in the Gretna rural area.

The compact development area comprised 454 new housing units on about 225 acres, while the scattered area consisted of a total of 116 new housing units located on 617 acres. The average size of the building lot for the compact development pattern was estimated at .26 acre per lot, and for the scattered development pattern at 2.60 acres.

¹ See Calvin L. Beale, "The Revival of Population Growth in Non-Metropolitan America", ERS-605, Economic Research Service, U. S. Department of Agriculture, Washington, D.C.: U. S. Government Printing Office, June, 1975.

² Land Use Development in Gretna, Nebraska. A Cost Analysis Center for Applied Urban Research. The University of Nebraska at Omaha, July 1, 1976.

Private development costs in the compact pattern averaged \$31,039 in 1975, compared to an average \$52,388 in the scattered area. Higher private development costs in the latter were attributed mainly to three factors: larger lots, greater floor space, and individual wells and sewage disposal systems.

Residents in the scattered development areas paid from 10 to 25 mills less property taxes than did residents living in the compact development pattern.

The public costs of providing school and fire protection per housing unit were higher for scattered areas than for the compact pattern. However, the higher school costs were attributed mainly to transportation expenditures incurred by providing extra busing service for families living in the scattered area.

Other types of public costs (general government, streets and roads, and police protection) were higher for the compact development areas.

One aspect of the social and environmental cost associated with the scattered development pattern the researchers found significant: "Production of an estimated 211 bushels of wheat and 52 bushels of soybeans, or a total of 263 bushels of food grain were lost for each house built in the scattered pattern over the compact development pattern."³ This difference can be accounted for mainly because of the size of the housing and lot, and not the location.

Other social and environmental costs (such as greater health hazards) were listed because of the widespread use of

septic tanks in the scattered development patterns.

Increased crime was also reported in the area, but no dollar comparisons were estimated for these non-monetary costs.

Utah Studies

A Utah State University study concluded that residential developments out in the county can be expensive for tax payers.⁴

A computer model was developed to analyze the costs and benefits of providing public services to new residential developments in the county. A residential development located in Summit County, Utah, just off Interstate 80 at the top of Parley's Canyon was studied. For an estimated 550-unit development, the net present value of the Summit Park Development to Summit County, calculated over a 24-year period, was estimated at -\$539,086.⁵

A similar study showed that a proposed 500-home development in Farmington City, Davis County, Utah, would have a net present value calculated over a 20-year period of -\$600,547 to Farmington City.⁶ During the buildup period, the development's return to local government for public services (in present value terms) had an excess of benefits over costs, with a deficit thereafter. "This indicates the problem does not lie with inadequate building permit charges, but insufficient charges for utilities and general governmental services."⁷

Authors of both articles do not imply that development should never take place. The model only forecasts the net economic

³Ibid. p. 53.

⁴James L. Thompson, Paul A. Randle and C. M. McKell, "Subdivisions Out in the County Can Be Expensive." Utah Science Journal, September 1975, 83-86.

⁵Ibid. p. 86.

⁶Paul A. Randle and Philip R. Swensen, "Subdivisions Out in the County Can Be Expensive", An update, Utah Science Journal, June 1976, pp: 42-46.

⁷Ibid. p. 44.

benefits which will accrue to the county or municipality from such development.

It can also be used to show what must be done to make the proposed development economically viable for the unit of government providing public services. Randle and Swensen suggest that the deficit can be recouped in any one or a combination of the following ways: (1) increasing building permit fee, (2) increasing the annual utility services charge, or (3) increasing the property taxes assessed against individual homes in the subdivision.

This model did not include social and economic costs that are nonquantifiable, such as environmental impacts.

Illinois

The results of a study in Illinois showed that income to the private sector increases when agricultural land is converted to residential use, while the public sector in two of the three areas studied incurred deficits relative to property tax costs.⁸ Given the existing fiscal capacities of the various governmental jurisdictions and excluding the county government, "a one-acre residential lot and dwelling unit does not generate sufficient property tax revenue to offset the property tax costs that would be incurred to maintain the existing quantity and quality of public services, as measured by per capita tax levy."⁹

Rice Lake, Wisconsin

In Rice Lake, Wisconsin, the construction of new residences is not always cost free for the other residents in the area,

if the desired public services are provided.¹⁰ "Even though more development will increase the tax base in the town, the taxes of town residents would not decline very much, even if the development were cost free."

Barrows et al also point out that there are many other factors that should be considered when deciding where residential developments should go. Many of these factors are considered potential land use conflicts and might be classified as non-monetary social and economic costs.

In deciding where a new development should go and whether it will be a scattered or compact housing pattern, it may be important to ask whether the new development will conflict with other land uses in the area. Usually it is in the best interest of everyone to avoid mixing incompatible land uses.

Many examples of land use conflicts may be cited. Among these are such things as industrial development in a residential area. There may be smoke, noise, dust, and odor from the industrial site and road congestion from trucks, which may disturb nearby homeowners.

Other conflicts may occur between agriculture and residential land use. Residential neighbors may complain of the dust, noise of farm machinery during early and late hours, and odor of normal farm operations. Because of this, farmers in some areas are forced to modify their farm operations. Farmers may complain about increased traffic on the county roads, and suburban children and their pets may sometimes cause problems for farm livestock or crops.

⁸ David L. Chicoine, "A Framework For Estimating Some Economic Consequences of Rural Non-Farm Residential Development With Application to Persifer and Copley Township, Know County, Illinois."

⁹ Ibid. p. 21.

¹⁰ Richard Barrows, Sam Huffman, Bruce Prenguber, Ward Repp and Karl Schmid, "More Houses, Fewer Farms?" "Land Use, Property Taxes, and Residential Development in the Town of Rice Lake," University of Wisconsin, Madison, Wisconsin, October, 1975.

The basic conclusion that can be drawn from each of these studies is that new residential development, in most cases, is not cost free for the public sector.

However, this doesn't imply that agricultural land should not be changed to residential use in order to meet the future housing needs of a population growth area. Nor does it imply that other non-monetary social and economic costs and benefits should be ignored by developers and elected officials when making the decision on future patterns and locations for new residential development.

Because of the difference in the state school aid formula for South Dakota and the number of public services provided by the county to the scattered rural residential developments in the Black Hills area, it was determined that a public finance impact case study of rural residential development area in Pennington County would be useful.

The methodology is a cost-benefit analysis approach and is a hybrid of Barrows, Chicoine, and Darling models. Both dollar changes and tax rate changes for providing public services can be estimated for the rural housing development.

Methodology

The two taxing jurisdictions that spend collected tax dollars for providing public services to new rural housing development residents are the county general purpose government and the school district. The major public services that are provided by county government are police protection, fire protection, and road maintenance. The school district is responsible for providing education facilities and services for all children in the school district, whether they live in Rapid City itself or in the county.

Other services such as water, sewer and garbage pickup are provided by the homeowner, the housing development, or private contractors. The local residents from the rural housing development pay for these costs on an individual basis.

Additional county expenditures financed from local taxes are estimated by assuming that each new resident will require an expenditure equivalent to recent per capita tax receipts from personal and real property tax. The product of the average number of persons per dwelling in the new housing development times the per capita tax receipts from personal and real property tax times the number of new dwellings in the housing development is the estimated additional county expenditure.

The marginal cost per unit may differ from the average cost estimated in this fashion. However, the information required to estimate marginal costs is difficult to obtain. Thus, it was necessary to assume that marginal and average costs are approximately the same.

To estimate additional revenue per dwelling unit, estimates are made of the average market value of the home, the lot, and personal property. The county assessment sales ratio is used to determine the taxable value. In Pennington County the sales ratio for structures is 35% and for lots 30%. The mill rate is used to find the total county tax revenue from the new housing development.

Additional school expenditures financed from local taxes are estimated by obtaining the operating cost and capital outlay cost per average daily attendance times the average number of new students per dwelling unit. The sum of the average capital cost plus the average operating cost per dwelling unit times the number of new dwelling units for the development gives the estimated additional cost for the school district.

Additional revenue for the school district is estimated the same way as for county government. The only difference is the school mill rate must be used in place of the county mill rate. State aid for the school district can be determined by working through the minimum foundation formula, state apportionment program, and transportation program. The state school revenue plus estimated tax revenue from the new housing units will give the total

revenue for the school district as a result of the new development.

To calculate the tax rate impact of the new residential development on county government and the school district, the difference was found between the revenue generated and the cost of providing public services for each of the taxing jurisdictions. The figure was then divided by the total taxable value for the taxing jurisdiction to find the new mill rate.

Taxable values for the dwelling units and lot were obtained from the county assessor and county auditor. Costs of providing the public services by the county were obtained from the county agencies responsible for providing the service and the county auditor. School costs were obtained from the Rapid City School District and the State Department of Education. For more detailed information on the sources of data for this study see Appendix A.

Case Study of the Rural Residential Development in the Rapid City School District

The selected rural residential development is one of many that are being developed within an area up to 15 miles from Rapid City or other Black Hills communities. These housing developments are located outside of incorporated municipalities but within easy travel distance of Rapid City or other communities. Water for these residential developments is provided by a community water system owned and operated by the homeowner. Individual sewage systems are provided and maintained by the homeowners at no direct cost to local county government.

The rural residential development analyzed in this research project is one of the larger developments in the area and is located just off an oiled highway 5 miles south of Rapid City.

At the time the study began, there were 40 new occupied homes in the development. However, there were still a number of vacant lots where more homes will be built. Only the 40 completed homes were analyzed

in this study. A total of 143 people lived in the development with 60 elementary and secondary school-age children attending the Rapid City School District.

The main services provided to the housing development by county government are road maintenance, snow removal, police protection, and fire protection.

Taxes paid to the county by the residents in the development are also used for the operations of the general county government and for providing public services available to all county residents. The Rapid City School District is responsible for providing educational facilities and services.

Water, sewage systems, and garbage pickup are not provided by county government; for this reason no extra cost has been added to the public sector for these services.

Residents of the development also have available to them other facilities and services (such as parks, swimming pools and library) that are provided by Rapid City and are available at little or no cost to county residents living outside the city limits.

Taxes for the people living in the rural residential development were 23% lower than what they would be for a similar house in Rapid City.

This is because people living in the rural residential development do not pay the consolidated city tax but only the consolidated county tax, while the city residents pay both the county and the city tax. Both city and rural residential residents pay the same school tax rate per \$1,000 assessed valuation.

Cost Analysis of Providing Services by County Government

Based on the present relationship between the per capita county tax levy, the property tax assessed valuation, and the county tax mill rate, the county government stands to benefit by an estimated \$695.46 annual revenue over costs incurred

from providing public services to the 40-unit residential development. The analysis used for estimating the financial impact of the residential development on the county government is shown below.

In interpreting the results, caution should be taken regarding the increased costs of providing law enforcement protection, fire protection, road maintenance, and snow removal to the development. In this study no additional costs were added for each of the four services. Law

enforcement protection is provided by the Pennington County Sheriff's Department, and it is very difficult to estimate the additional expense of providing protection to the residential development. The county pays for the service from the county general funds and the county salary funds, as suggested by the sheriff's department. Residents in the new development would pay their share if no new equipment or personnel are required to service the area, which is the case with this residential development.

Additional Pennington County Government Expenditures and Revenue, 1975-76 Data

1. Additional county expenditures

3.58 people/dwelling unit times \$34.77 tax levied/capita = \$124.48
per dwelling unit.

2. Additional property tax revenue

\$12,041 taxable value/dwelling unit times .00971 tax rate = \$116.92

\$1,635 taxable value/lot times .00971 tax rate = \$ 15.87

\$59.00 taxable personal property/dwelling unit times

15.88 percent of the total personal property tax

levy for county government. = \$ 9.36

3. Total tax revenue/dwelling unit

= \$142.15

4. Surplus tax revenue/dwelling unit

= \$ 17.67

5. Surplus for 40 dwelling unit residential development

= \$706.80

6. Tax revenue lost by taking agricultural land out of

production = \$22.50 taxable value times .00971 tax

rate times 52 acres

= \$ 11.34

7. Residential development surplus less tax revenue lost

by changing land use

= \$695.46

Volunteer fire protection is provided to the residential development by the county at a charge of 7¢ per \$1,000 assessed valuation.¹¹ This is included as part of the county funds. Counties can levy a tax up to one mill on all taxable property for fire fighting purposes.¹²

Again it was suggested by the county officials that the new residents pay their share for fire services, unless the new residential development is large enough to require additional costly equipment. However, in this case the residential development under study did not receive any additional equipment.

Before residential development roads can be dedicated to the county in Pennington County, the developer must meet the minimum road development requirements. Under this policy the county does not pay for the residential road development and construction costs.

There are four sources of county road tax levies under the county fund for 1975. Pennington County levied .28 mill for highway and bridge reserve, .80 mill for special road and bridge fund, and .50 mill for snow removal and emergency disaster. A special levy of ¹³.99 mill is used on road maintenance.

The county also receives state road funds which, in part, are used for road improvements such as putting an oil surface on a graveled county road. There were no road development costs to the county for the new residential development, and it is intended that the assessed tax levies cover road maintenance costs.

Cost Analysis of Providing Services By School District

The residential development studied is located in the Rapid City School District,

and all students attend the Rapid City schools.

Of the 40 families living in the subdivision at the time of the study, 12 had been living in Rapid City. Only 8 of the 12 had homes to sell, 3 families were victims of the Rapid City flood, and 1 family had rented an apartment.

In the residential development at the time of the study there were 60 school-age children with 15 of the 60 having lived in Rapid City before moving to their new homes. The families who bought the eight vacant homes in Rapid City added 16 new children to the school district. Thus, the overall total net gain to the school district was 61 school-age children.

It is difficult to estimate the additional costs of a small number of new students in the school district. It would seem reasonable that the addition of three or four new students would involve very little extra cost to the school district since there might be sufficient room, desks, and teachers available. The only additional expense might be for supplies. Even though the cost of a few extra students might be very low, it is obvious that as new students are added in sufficient numbers the cost to the school district for a new school or extra classrooms, additional teachers, some more support services and supplies would not be zero.

In this study it was assumed that the average cost per pupil for those costs which are likely to change with additional enrollment would approximate the additional costs to the system. These cost categories include: teacher salaries and benefits paid by the school district, instructional supplies, and school district transportation costs. While the capital outlay for school buildings and

¹¹ Pennington County, Tax Levy Sheet, 1975. Pennington County Auditor.

¹² County Tax Levy for Fire Fighting Purposes, South Dakota State Law, Chapter 34-31, Section 34-31-3, Pierre, South Dakota.

¹³ Pennington County Tax Levy Sheet. Op. Cit.

equipment did not increase with the net addition of the 61 new students, it is expected that more school facilities will be needed as additional students enroll in the school district as a result of increased population growth in the school district.

The capital outlay and bond redemption figure used in this study was the average annual per student cost of \$99.61 for the Rapid City Independent School District during the 1974-75 school year.¹⁴

The average daily membership operating expenses per student are listed below. However, it should be noted that all costs are the average cost for the school district except for transportation. Transportation costs were adjusted upward to reflect the increased cost of providing transportation to the eligible students living in the residential development.

The adjustment procedure was to take the average contracted cost per bussed student in the Rapid City School District to determine a transportation cost for the eligible students from the residential development.

The Rapid City School District receives state school aid under the minimum foundation program, state apportionment program, and transportation program for eligible students.

Under the minimum foundation program, the net gain of 61 new students to the school district would increase the original number of classroom units from 623.55 to 626.46, giving a gain of 2.91 classroom units. This figure (2.91 CRU) and the increase of the school district's tax base by \$549,000 were used to calculate the flat grant and equalization support for the 61 new students from the state.

Two points should be noted here:

1. The percentage equalization support paid to the school district may change from year to year, depending on the amount of state funds available for this program.

2. The classroom unit cost of \$11,250 as given in the 1976-77 State of South Dakota Minimum Foundation program publication was used in place of the \$10,000 classroom unit cost use previous to this time.

Operating Expenses Per Student

1974-75 School Year¹⁴

<u>Expense</u>	<u>Amount</u>
Administration	\$ 20.80
Instruction	\$572.09
Transportation	\$ 78.04
Maintenance and Operation	\$102.46
Fixed Charges	\$ 84.86
Other	\$ 8.19
Special Education	\$ 41.49
Total	\$907.93

¹⁴ Educational Statistics Digest, 1974-75 Dept. of Education, Pierre, South Dakota, p. 45.

Additional Rapid City School District Expenditures and Revenue - 1975-76

Data:

1. Additional School District Expenditures

a. Operating Expenses

\$907.93/ADM times 1.525 students/dwelling

unit = \$1,384.59/dwelling unit

b. Capital Cost

\$99.61/ADM times 1.525 students/dwelling

unit = \$151.90/dwelling unit

2. Additional Expenditures

= \$1,536.49/dwelling unit

3. Additional Property Tax Revenue

\$12,041 taxable value/dwelling unit times .05143

tax rate = \$619.26/dwelling unit

\$1,635 taxable value/lot times .05143 tax rate = \$ 84.08/dwelling unit

\$59.00 personal property/dwelling unit times

84.16 percent of personal property tax levied = \$ 50.83/dwelling unit

4. Total Tax Revenue/Dwelling Unit

= \$754.17

5. State Aid to Education/Student for Increased Enrollment

State Apportionment = \$ 27.85

Flat Grant = \$ 73.94

Equalization = \$111.73

Transportation = \$ 36.00

Total = \$249.52

State aid/student \$249.52 times 1.525 students/

dwelling unit = \$380.51

6. Total School Revenue/Dwelling Unit

= \$1,134.68

7. Average Deficit/Dwelling Unit = \$401.81
8. Deficit for Forty Residential Development Unit = \$16,072.40
9. Tax Revenue Lost By Taking Agricultural Land Out
of Production = \$22.50 taxable value times .03543
tax rate times 52 acres. = \$41.44
10. Residential Development Deficit Plus Tax Revenue
Lost By Changing Land Use = \$16,113.84

As shown in the analysis, the average cost per student was \$1,007.54. Of this amount, the school district paid 75.3% and the state paid 24.7% of the cost per student. With state aid paying one-fourth of the cost, there was a \$16,113 annual deficit in the amount of school taxes being levied from the 40-unit residential development as compared to the total cost of providing education for the additional 61 children. When computed on a per dwelling unit basis, the tax deficit amounted to \$402.84. However, under the present tax structure the \$16,113 annual deficit would be paid for by all property taxpayers with the Rapid City School District by increasing the mill rate in order to levy \$16,113 more school taxes unless the school district is able to take one of the following actions or a combination of the two:

1. Reduce expenditures per pupil by (\$16,113 ÷ 13,128) \$1.23. This may mean cutting out some programs.
2. Raise additional funds in the amount of \$16,113 on an annual basis.

The average cost of providing education in the Rapid City School District is the same in Rapid City as it is in the rural residential developments around the city.

The only variable that is a function of location is bus transportation, and it accounts for about 8% of the total cost for those students who are eligible for busing. However, under the state transportation program up to "50% of the school district's net cost for providing bus service, but not to exceed 25¢ per mile for those miles actually and necessarily traveled by school transportation to get pupils to and from school and between centers" is paid to the district by the state.¹⁵

As the residential development adds more houses in the school district, the deficit will increase if the number of students increase at a rate of more than one student per additional \$14,739 taxable property value with all other variables remaining constant such as state aid, mill levy, sales assessment ratio, assessed valuation, and cost per student.

Under the guidelines of the federal school aid programs, the school district was not eligible for additional funds as a result of the new residential development.

It would be desirable to see what budget changes actually did occur in the school district as a result of the new

¹⁵ Department of Education and Cultural Affairs, Division of Elementary and Secondary Education, Pierre, South Dakota.

rural residential development. However, because of the many other new housing developments within the Rapid City School District during the same time period it would be extremely difficult to determine the exact changes that did occur in the school district budget as a result of the 40-unit residential development.

Estimated Tax Rate Change

The residential development analyzed in this study added \$549,000 to both the general county and the school district's taxable value. With this added taxable value, estimated taxes levied as a result of the new development for the county were \$5,674 and for the school district \$30,125, based on the 1975 tax levies for Pennington County and the Rapid City School District. The estimated public service expenditures from local tax funds for the residents of the new 40-unit residential development were \$4,979 for the county and \$46,239 for the school district.

To determine the mill rate change for both the county and school district the following formula was used:

$$\frac{\text{Change in Tax Revenue} - \text{Tax Expenditures}}{\text{Old Taxable Value} + \text{New Taxable Value}}$$

= Added Mill Rate

In Pennington County the annual savings to taxpayers as a result of the new 40-unit residential development is .002874 mills per \$1,000 of taxable value in the county. The savings is so small that in most cases it would not be passed on to the taxpayers.

In the Rapid City School District the total tax mill change as a result of the 61 additional school children was an increase of .093003 mills per \$1,000 of taxable value in order to levy sufficient tax revenue to cover the \$16,113 annual school fund deficit under the present funding system.^a

However, when the school tax mill levy is increased the mill rate for agricultural property changes by one-half the amount that the mill rate for non-agricultural property changes after the first eight mills.¹⁶

This means that a house with a market value of \$36,000 would have an estimated annual increase in school taxes levied of \$1.19. An agricultural operation with a market value of \$500,000 would have an estimated annual increase in school taxes of \$7.10. These two examples show the estimated increase in school taxes to property owners in the Rapid City School District if they are required to levy through increased taxes the \$16,113 deficit in order to cover the educational costs of the 61 new students.

Other factors which will influence the amount of this deficit in the future are the number of new houses yet to be built in the residential development, changes in state school aid, and the net number of children entering school from the development each year. While these changes could convert the deficit to a surplus, it appears unlikely that the residential development would result in major tax savings to current residents.

Other Aspects of Rural Residential Developments

While it is important for policy-makers to consider the cost of providing services to new residents, and the tax revenue generated from developments, it is also very important to look at the economic effects in the private sector and the non-monetary aspects of developments as well. Leaving out any one of the three areas leaves gaps in the decision-making process.

The economic effect to the private sector of changing the use of land from agricultural production to residential use can be identified in terms of agricultural

^a For the above calculations see Appendix B.
¹⁶ SDCL 10-12-31.

income foregone over an extended period of time, and other income generated as a result of the land use change.

The factors affecting agricultural income foregone with the conversion of land from agriculture to residential use will vary with the soil productivity, types of crops grown, and livestock raised, the level of management, prices of agricultural inputs, and market price of products.

The major sources of private income as a result of the residential development would come from labor for the building of the houses and the development of any infrastructure such as roads, utilities, etc., and interest on home loans. The income to the private sector will vary directly with the size and quality of the dwelling units constructed.

Among the social and environmental aspects of residential development, there are many factors that can be taken into consideration such as crime rates, air, water and noise pollution, effect on wildlife habitat patterns, health and sanitation, the location of employment, exposure to natural hazards, personal satisfaction of living in areas of open space, and the compatibility of land uses in order to maintain the quality of living desired.

While it is difficult to put direct costs and benefits in monetary terms on the above items listed, they should not be ignored when deciding where residential development should go.

Summary: Conclusions and Implications

More land will be converted into residential, recreational, industrial, and commercial uses in the future. With the addition of new rural residential developments comes added property tax base for the county and the school district. Someone must provide the following public services to the residents living in the new developments: road maintenance, snow removal, police protection, fire protection, water, sewage disposal,

solid waste disposal, and educational facilities for the children.

To gain some insight into the cost of providing these services as well as who pays for them, a 40-unit rural residential development located about 5 miles south of Rapid City was analyzed.

The development has its own community water system and each individual residence has its sewage disposal system. Garbage pickup is provided by a private contractor. The costs for these services are paid in full by the individual residents.

The county government provides road maintenance, snow removal, police protection, fire protection, and other general county services that are available to all county residents. Based on 1975 tax information, the 40-unit residential development added \$549,000 to the county and school district tax base, and the county levy an annual estimated total of \$5,686.00 taxes from the development. After paying for the services provided by the county to the development's residents, the annual surplus county revenue was estimated at \$695.46.

The Rapid City School District provides the school services and facilities for the 61 new students. The 61 new students was a gain of 2.91 classroom units for the school district under the state minimum foundation program.

The estimated cost of providing educational services for the 61 students on an annual basis was \$61,459.94.

The estimated cost of providing educational services for the 61 students on an annual basis was \$61,459.94. The tax revenue levied by the school district from the residential development based on 1975 tax information was estimated at \$30,166.80. Increased state aid to the school district under the minimum foundation program, state apportionment program, and transportation program for the 61 new students was about \$15,220 or one-fourth of the total cost. The total deficit for the school district for a year was about \$16,000 or an estimated \$400.00 per home

in the new development. However, it should be noted here that the only increased cost for education as a result of residential location was the cost of bus transportation, and it amounted to about 8% of the total cost for those who ride the bus, of which the state pays up to 25 cents per mile or 50% of the cost.

When this \$16,000 deficit for the school district is spread over the entire Rapid City School District tax base, it amounts to an annual increase of .09468 for non-agricultural property and .04734 for agricultural property per \$1,000 taxable value.

While the information discussed in the analysis of providing public services is important, it is just as important for policymakers to study the economic effects to the private sector as well as the non-monetary social and environmental aspects of residential development. Leaving any one of the three subjects out leaves the decision-making process incomplete.

Conclusions

The major object of this study was to analyze the local public finance impact of rural residential developments and to determine to what extent current residents are subsidizing new rural residential

developments. The study's conclusions relative to this objective with the housing development analyzed are:

1. The developer and local residents within the development are providing for the utilities (water, sewage disposal and garbage disposal) and the development residents are paying full cost for them.
2. The total dollar benefits of providing public services by county government to the new residential development exceeded the cost of the service by a small margin.
3. Busing transportation cost is the only variable that is greatly affected by the location of the residence in providing education for school age children.
4. The major cost of education is a function of the number of school age children and not the location of the residency, which implies that housing developments located in Rapid City or Pennington County with the same taxable value will require about the same public school tax subsidy given the same number of school age children.

APPENDIX A

Source of Data

<u>Data</u>	<u>Source</u>
1. Tax Mill Levies	Pennington County Auditor
2. Total Assessed Valuations	Pennington County Auditor and State Department of Revenue
3. Personal Property Tax	Pennington County Auditor
4. County Population	Sixth Planning District
5. Number of Dwellings	Pennington County Assessor
6. Size of Lot	Pennington County Assessor
7. Acres Taken Out of Production	Pennington County Assessor
8. Assessed Value of Dwellings and Lots	Pennington County Assessor
9. Number of people in Residential Development and Number of Students	Developer & Homeowners
10. ADM Cost for Education	Rapid City School Administration and State Department of Education
11. State School Aid	Rapid City School Administration and State Department of Education
12. Federal Aid	State Department of Education
13. Road Costs	Pennington County Highway Dept.

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APPENDIX B

Tax Rate Change

County

$$\frac{- \$695.00}{\$241,844,600} = - .000002874$$

School District

$$\frac{\$16,113}{\$173,251,836} = + .000093003$$

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