SERVICES AND FUNDING ALTERNATIVES FOR SUBTERMINAL IMPACTED ROADS, THE CASE OF STARK AND HETTINGER COUNTIES, NORTH DAKOTA

Denver D. Tolliver
Daniel L. Zink

UGPTI Staff Paper No. 73
January 1985

SERVICE AND FUNDING ALTERNATIVES FOR SUBTERMINAL IMPACTED ROADS, THE CASE OF STARK AND HETTINGER COUNTIES, NORTH DAKOTA

BY

DENVER D. TOLLIVER
AND
DANIEL L. ZINK

UPPER GREAT PLAINS TRANSPORTATION INSTITUTE
NORTH DAKOTA STATE UNIVERSITY
P. O. BOX 5074
FARGO, NORTH DAKOTA 58105

JANUARY 1985

Introduction and Background

Agricultural and other commerce in North Dakota traditionally has taken place over a system of interstate, state, county and township roads. Each segment has been constructed and maintained to accommodate existing or expected traffic conditions. Ideally, roads designed for a particular purpose would be matched with traffic volumes, densities, vehicle types and other factors in order to permit the efficient flow of commerce and maximize the effective road life. However, commercial and other traffic patterns often change over short time periods, leading to under-utilization of some roads and over-utilization of others. A road system with an average life of decades often remains inflexible and cannot keep up to the more rapidly changing commercial trading patterns.

Such is the case of the country grain marketing system in North Dakota. Prior to 1980, smaller farm trucks hauled grain to local country elevators for subsequent reshipment by rail or truck to terminal markets. The heavy truck movement was usually over the most convenient route to the nearest Interstate or other major highway. Institutional changes in the grain marketing system have now contributed to significant intrastate truck shipments whereby many grain elevators truck grain to another, usually larger, elevator for subsequent rail shipment. In the 1983-84 crop year, 54 elevators shipped over 100,000 bushels of grain to another North Dakota elevator for reshipment (Figure 1).

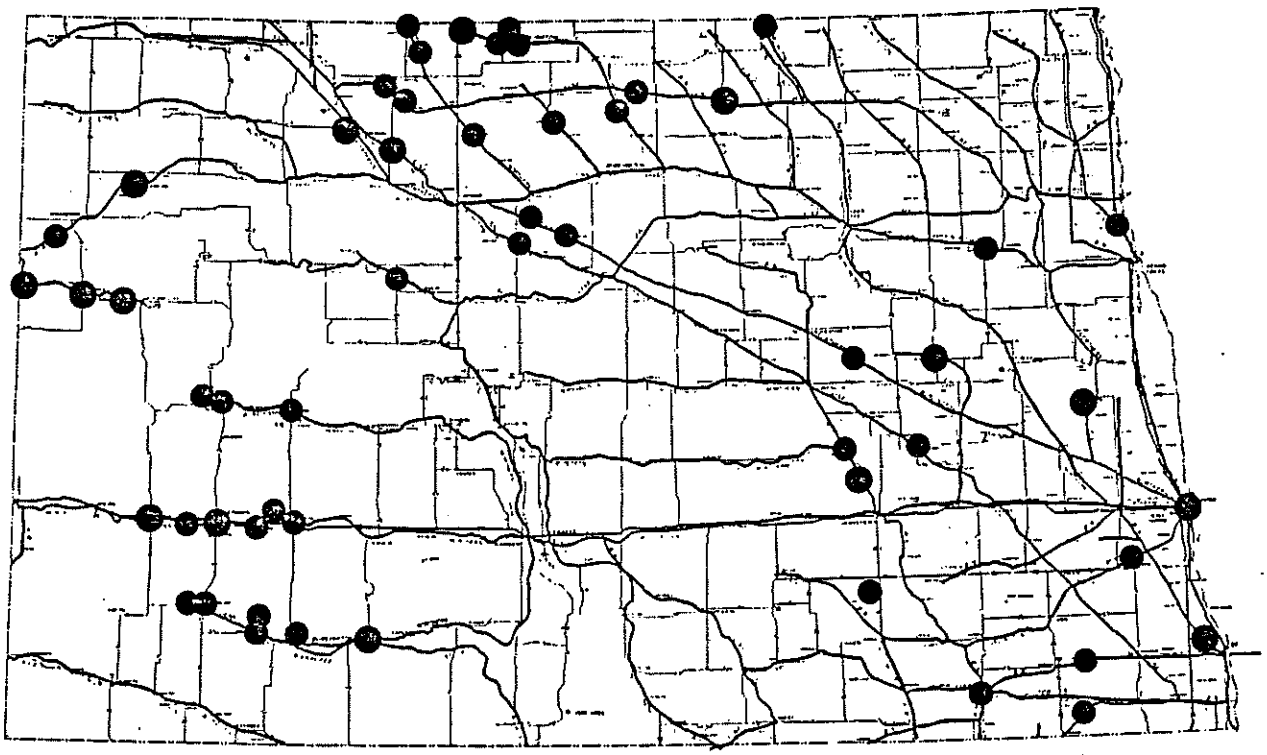
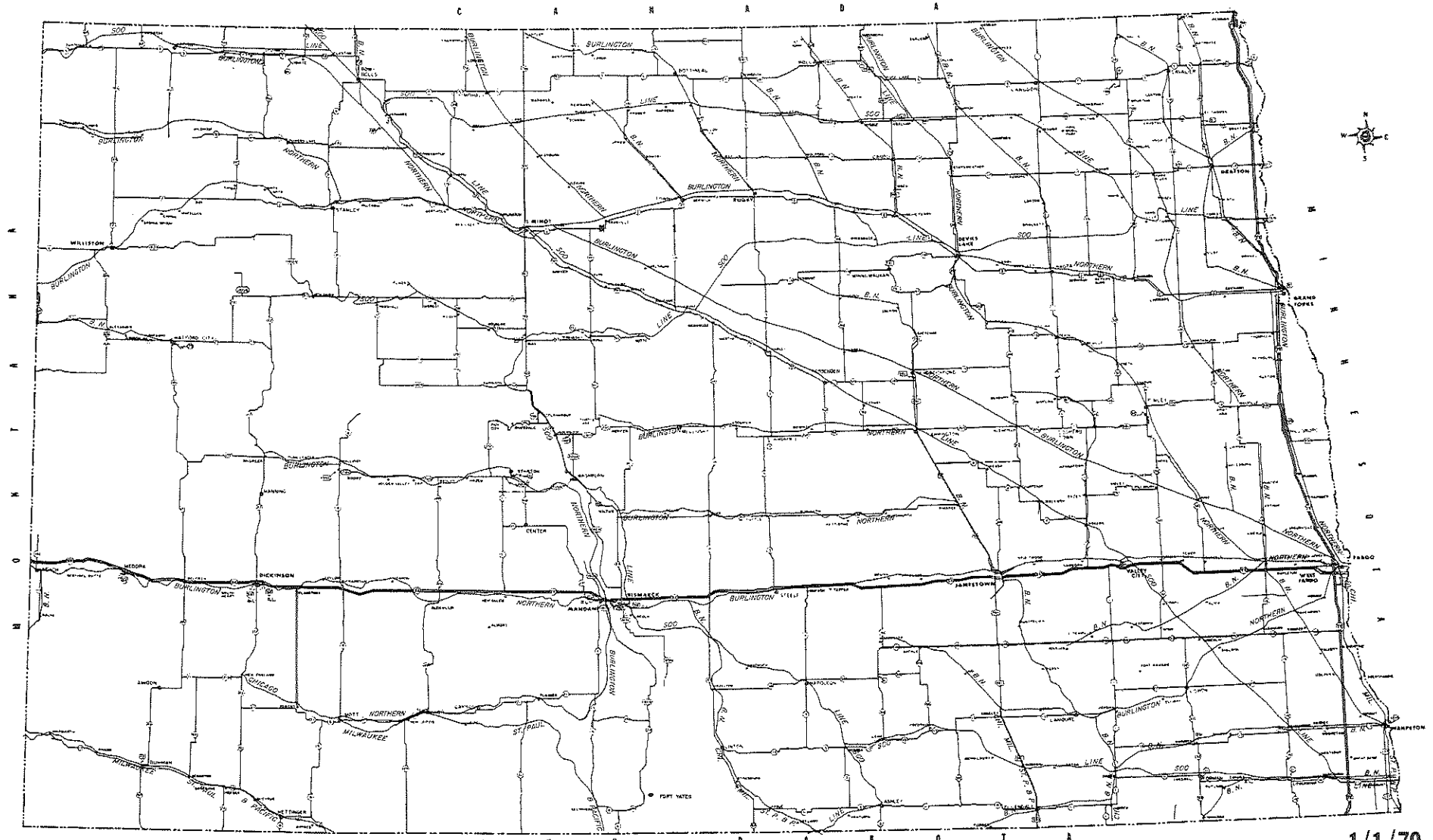


Figure 1. Locations of Grain Elevators Shipping 100,000 Bushels or More to Other ND Elevators for Reshipment.

This type of rerouting of truck traffic has occurred in southwestern North Dakota (and other areas) due to the consolidation of elevator facilities and construction of a subterminal near Gladstone. Heavy truck traffic is now routed toward Gladstone from surrounding elevators rather than simply gaining access to Interstate 94 for the remainder of the shipment. This has put increased pressure on local roads, specifically a 34 mile county road extending from Gladstone to Regent, more commonly called the Lefor road (Figure 2).

According to local residents, and by subjective judgments from an inspection of the road by Upper Great Plains

North Dakota State Highway and Rail Network



1/1/79

Transportation Institute personnel, surface condition has deteriorated to the point that a safety problem has emerged, reduced speeds are required, and some avoidance of the road has occurred.

The problem of subterminal-impacted roads is not unique to the southwestern part of the state. Local roads in other portions of the state including Ward and Cass counties have experienced increased surface damage due to the citing of high volume grain elevators. Heavy concentration of trucks into such facilities is becoming more of a state-wide problem.

Private and local public concerns have requested that the North Dakota State Highway Department incorporate the Lefor road into the State Highway System and thereby assume funding responsibilities for bringing the road up to higher standards to accommodate heavy truck traffic. The North Dakota State Highway Department, on the other hand, has expressed concerns that funding for road construction and maintenance is limited, and that the size of the State Highway System is constrained by law.

This report will address the problem of subterminal-impacted roads by examining the Lefor road situation in southwestern North Dakota. The report will detail relevant issues and concerns which must be addressed, who affected parties are in the subterminal-impacted road issue, and what the viable service and funding alternatives may be for resolution of the problem. The report will serve as a methodology for evaluating similar situations state-wide.

Statement of Problem

A reorganization of commerce and institutional change in the manner grain is marketed has changed the location of major grain "collector arteries" as well as adding larger trucks to the traffic mix contained on those collectors. The advent of the "subterminal-satellite" elevator system has been one result of recent institutional changes in grain marketing. The general operating structure of the subterminal/satellite system is that local surrounding "satellite" stations truck grain to a major "collecting" subterminal for subsequent rail shipment, as opposed to each local country elevator receiving grain from farmers and shipping by rail in smaller consignments. Under the new system, the local country elevators still receive grain from farmers, but an additional truck movement has been added--the satellite to subterminal movement.

The southern-most elevator members of Southwest Grain Coop formerly trucked grain to terminal markets on State Highways leading north to I-94. The most economical and most convenient routes for grain trucked from these coop stations was formerly over State Highways which are generally of a much higher design standard. The new most economical and convenient route, however, is over a county road through Lefor, ND (Figure 3). This is a direct route to the cooperative's main shipping station at Gladstone, but the road is not designed to accommodate heavy grain truck traffic. Routing the trucks over roads

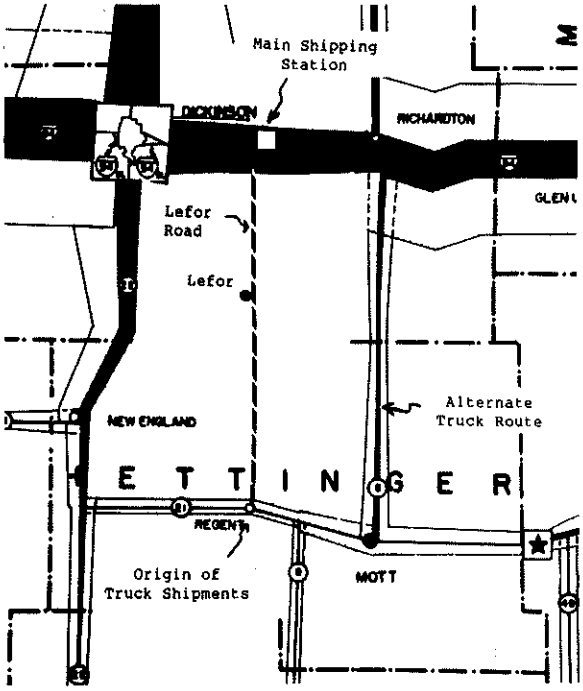


Figure 3. Location of the Lefor road and alternate truck route from Regent to Gladstone, ND.

which are capable of handling the loads involves circuitous routing (62 additional miles/trip), increased fuel consumption (18 additional gallons/trip) and increased time in transit (0.6 hours/trip).

Due to the reorganization of traffic flow and the resultant deterioration of the road's condition, a request has been made to the North Dakota State Highway Department to incorporate the Lefor road into the State Highway System. Transfer of the road from the responsibility of the counties to the state would relieve the counties of funding responsibilities, those responsibilities being taken over by the State Highway Department. However, due to several constraints the State Highway Department is reluctant to accept the road into the state system. Those constraints include:

a. Legal constraints on the size of the entire State system;

b. Legal restrictions on the maximum annual increase in the size of the State system;

c. Limited financial resources for all State highway projects.

The problem, therefore, is that a county road (currently) is in dire need of rehabilitation and limited resources are available (at all funding levels) to deal with that need. In addition, commercial traffic patterns have transformed this particular road from one serving only local needs, to one which serves the more general needs of several jurisdictions. Indications are that this is not a short term problem due to the longevity of elevator facilities which have been constructed. Also, the problem is not exclusive to southwestern North Dakota. Similar instances of road deterioration caused by truck rerouting have been experienced in other areas of the state.

Affected Parties

A number of people and parties are affected by the dilemma of subterminal-impacted roads. These parties basically can be broken into three groups: 1) users of the roads, 2) parties responsible for construction, maintenance and funding of the roads, and 3) the general taxpaying public at various jurisdictional levels who are currently financing or may be financing subterminal impacted roads.

Users of the Lefor road include a variety of local interests. Commercial traffic consists primarily of local grain truckers hired by Southwest Grain Coop (and other elevators) to haul grain to the subterminal near Gladstone. For the grain truckers, the road's condition requires slower speeds and therefore increased transit time. If required to take an alternate route, the grain truckers experience increased vehicle mileage, transit time and fuel consumption. Management and owners of Southwest Grain Coop are affected in that many of these same costs are experienced in operating their own trucks, and in the ability to attract truckers on a for-hire basis.

Other commercial users include milk trucks, mail carriers, school buses, gravel haulers, farm trucks, and others. These interests are affected similarly by the poor road condition. Residents adjacent to the Lefor road are also affected by its condition. Travel on the road must be done at generally slower speeds, and users are prone to experiencing increased vehicle wear and maintenance. These types of effects are also experienced by non-residential road users. Farmers tilling fields adjacent to the road are affected similarly. Field access and road use is affected due to the higher traffic volume and resultant dust problems.

One effect of the heavy truck traffic over the Lefor road which is felt by all the above mentioned parties is the safety hazard caused by dusty conditions on the road. Billowing dust is experienced by all vehicle traffic, but is a much larger problem

when heavy trucks are traveling over the road. Passing or meeting other vehicles and gaining access to the road from fields or farmsteads are two examples of the type of hazard caused by the dusty conditions.

The second group affected by the Lefor road situation includes those responsible for construction, maintenance and funding of North Dakota roads. Immediately affected are the county officials concerned with road conditions, including county engineers, commissioners, and the local taxpaying public. It should be noted that two independent jurisdictions are involved, each concerned with a specific section of the Lefor road. The heavy truck traffic, while local in one sense of the word, still represents inter-county or cross-jurisdictional traffic. Officials of both Stark and Hettinger county are concerned about the general condition of the road and its effects. Due to demographic and other considerations, local alternatives and specific concerns may be different between counties.

Both counties, however, are affected by the road conditions in that they are faced with limited financial resources and a large financial requirement for road rehabilitation and/or maintenance. Local jurisdictions are faced with financial constraints from both local sources and by the amount of non-local funding sources at their disposal.

Due to the local request that the road be incorporated into the state system, State Highway Department officials are faced with constraints as well. From a financial perspective, funds

for the maintenance of the state highway system are limited, as are funds to be allocated to the individual counties. Also, state projects must be prioritized in order to allocate scarce funds. Any road segment included in the state system would be subject to this same prioritization procedure. From an institutional perspective, the size of the state highway system is limited by law to a 7,700 mile maximum. Also, the system is limited by law to an annual maximum increase of 50 miles.

Finally, taxpayers at the local and state level are affected by the issue of subterminal-impacted roads. Prior to the re-routing of truck traffic, the Lefor road was utilized primarily by local interests. The road is now serving a larger area because of the size and scope of the economic impact area served by the cooperative utilizing the truck shipments. A determination must therefore be made as to who the beneficiaries of the road are, and who is bearing the cost of the road. To the extent that users of the road and beneficiaries of the road services are local and easily identified, the costs should be borne locally or privately. On the other hand, if the road is determined to have regional or statewide use, a case can be made for funding from a more braoder base, such as county or state taxation.

The problem of determining whether costs should be borne privately or socially is complicated in the case of the Lefor road. One of the primary users and apparent cause of the accelerated road damage, the coop's grain truckers, may appear to

be the beneficiary of road services. However, given the number of coop patrons and their wide geographic dispersion, the benefits of the road would seem to be more widespread. Also, the more general economic benefits from the coop to the region would suggest a need for funding from a broader tax base. Therefore because it is easy to identify specific users of the road, yet the economic benefits created by that use are more general, a conflict exists as to who should be responsible for providing the road services.

Current Status of the Lefor Road

The Lefor road is approximately 34 miles long and extends from Gladstone to Regent. It is bisected at approximately its midpoint by the Hettinger-Stark county line. The road was originally constructed 24 feet wide in Stark County and 32 feet wide in Hettinger County, with 3.5 inches of gravel overlay. Both counties perform maintenance on the road "as required", however county officials have estimated that machines are required to spend approximately 2 days per week on the road to control the surface condition. Neither Hettinger nor Stark county impose any load limitations on the Lefor road. Stark county, however has reduced the speed limit to 45 mph in an attempt to reduce road damage and dust. Officials from both counties have expressed interest in incorporating the road into the State Highway System. Traffic counts on the northern section of the Lefor road (north of Lefor) have revealed a traffic

density of 100 vehicles per day, both ways. Bridges on the road are generally in good condition, according to county officials, however concern was expressed as to a potentially cracked bridge abutment near Gladstone.

An on-site inspection of the Lefor road revealed several factors relating to its condition. Existing gravel is pushed toward the road's edge, leaving the clay sub-base exposed. County road maintenance officials confirm that grading only temporarily resolves this problem. Occasionall severe "washboarding" occurs, as well as moderate rutting and surface break-up. Lack of effective drainage is experienced in spots due to the rutting and gravel displacement. Bridges appear in generally good condition. Speeds were reduced due to the rough road surface. Dust was somewhat of a problem when meeting or following other vehicles, particularly large trucks.

Alternatives for the Lefor Road

Jurisdictional alternatives are few and relatively simple. The road can either be incorporated into the State Highway System or left to the individual counties for supervision. If incorporated into the state system, the road would have to compete with other road projects for scarce funds. This actually may lead to fewer funds available for the road than currently available through the counties due to prioritization of projects. If left under county jurisdiction, available funds will be

limited due to the smaller funding base from which to work, in spite of the roads apparent needs.

Transportation engineering alternatives, however, are more diverse. Upgrading the road for heavy trucks would appear to be the most direct approach to the problem. However, a strict evaluation of the costs and benefits of such a project would have to be conducted before pursuing this alternative. A second alternative may be to divert traffic to another route. However, taxpayers and area commercial concerns may disagree with the philosophy that they be restricted from existing roads and that the existing road network dictate the patterns of area economic activity. Other alternatives may include the incorporation of smaller, lighter equipment into the system or issuance of special permits to allow heavier lading weights on existing, stronger roads. This latter alternative would attempt to compensate truckers for the additional cost of using a more circuitous route.

Financial Alternatives

A financial or funding solution to the problem presented by the Lefor road is inherently tied to the question of jurisdictional responsibility. Incorporating the road into the State Highway network would make available a broader set of financial alternatives than if the highway were to remain the responsibility of Hettinger and Stark counties. Setting aside for the moment the question of jurisdictional duty, this section

of the report will examine the array of financial tools or strategies which are available at each level of government.

A. State Financial Strategies

The Lefor road exemplifies the problem of highway impacts which are occurring throughout the state as a result of changing traffic patterns caused by subterminal elevator location and/or railroad abandonment. The road is itself only one of potentially many such cases which are likely to surface in the future, each creating a similar demand for state resources. The financial solution to the Lefor road, from a state-wide perspective, lies with the solution to the broader problem of subterminal related highway impacts.

There are a range of financial alternatives which are available to state government for dealing with this issue. These include:

- increasing the level of existing user taxes;
- introducing new "third-structure" highway charges;
- allocating general fund appropriations;
- applying an economic activity or "subterminal" tax earmarked for highway purposes;
- applying a commdity tax for highway purposes.

Each of these alternatives is discussed below.

1. Increase Existing User Taxes

One potential solution to the problem of subterminal related impacts would be to increase existing user fees. The increase in

user taxes would provide the state with additional revenues which could be used to incorporate highways into the network or which could be earmarked and passed on to the counties.

There are two principal classes of user taxes in existence in North Dakota today: (1) motor vehicle registration fees and (2) motor fuel taxes. Increasing the level of either tax would be administratively straightforward, as the system for collecting user taxes and administering the program is currently in place. Increasing either tax could generate dedicated revenues to deal with the problem of subterminal impacted roads. According to 1982 estimates developed by the State Highway Department[1] a $.01 increase in the motor fuel tax on gasoline and gasohol would result, over a biennium or two-year budgetary period, in an additional $6,200,000 in revenue; a $.01 per gallon increase in diesel fuel tax would result in $2,000,000 in revenues; and a 10% increase in the existing level of motor vehicle registration fees would result in an additional $5,600,000.

There are several options available with regard to increasing the level of existing user fees.

a. Increase all motor fuel taxes, both diesel and gasoline.

b. Increase diesel fuel taxes only.

c. Increase motor vehicle registration fees for all classes of vehicles.

---

[1]North Dakota State Highway Department, Planning Division. Highway Financing Alternatives, August 1982.

d. Increase motor vehicle registration fees selectively based on the class or type of vehicle.

e. Increase both vehicle registration and motor fuel taxes.

Increasing vehicle registration fees, while administratively straightforward, would not result in taxation in proportion to use. Increasing all classes of registration fees would be less equitable than selectively increasing fees on certain classes of vehicles. But even selective increases on a state-wide basis would not be directly related to the use of the impacted highways.

Even if the equity issue could be resolved, increasing motor vehicle registration fees would have only a limited revenue impact on a statewide basis. A 10% increase would be required just to raise $5.6 million.[2] The initial cost estimate for upgrading the Lefor road alone is $8,000,000. A substantial increase in the existing level of motor vehicle registration fees would thus be required in order to address only a limited number of cases.

Increasing motor vehicle fuel taxes would also raise the question of equity. Such a tax would be more use-related than vehicle registration fees but would still not tax those users directly who are responsible for increased highway impact. An increase solely on diesel fuel taxes would more directly pinpoint

---

[2] Ibid.

the class of users involved but would not, of itself, isolate the specific users of the impacted highways.

Following this option (increasing motor fuel taxes) would necessarily lead to a sizeable increase in the level of the tax. In order to deal with the problem of subterminal impacted roads on any significant scale, an increase of several cents per gallon would be required.

2. Assess Third Structure Taxes

A second alternative with respect to state financing of subterminal impacted roads would be to introduce a so-called "third-structure" tax. Third-structure taxes are designed to extract revenues from highway users in accordance with the damage (and the resulting cost) which their use inflicts upon the highway system. According to a 1982 estimate, eleven states have some sort of third-structure tax already in place.

Third-structure taxes fall into one of three general categories: (1) weight-distance taxes, (2) ton-mile taxes, or (3) axle taxes. A weight-distance tax is based on the registered gross weight of a vehicle. Normally, an operator is required to provide the state with a declaration of the maximum weight at which he intends to operate during the year. The opertor must then record his annual mileage and a tax is assessed baed on his registered weight and the mileage which he reports. The tax rate itself will normally be related to gross vehicle weight, with heavier classes of vehicles bearing a higher tax rate.

According to the State Highway department, a weight-distance tax would be administratively straightforward with low compliance costs. Such a tax would also produce sizeable revenues. The Highway Department estimates in 1982 that a 1 mill assessment would yield $24,000,000 in revenues over a 2-year period.

An alternative to weight-distance taxes is a ton-mile tax. Whereas weight-distance taxes are based on annual mileage at the maximum registered operating weight of the vehicle, a ton-mile tax would be based on individual trip records. Such a tax would normally be assessed on a per mile basis at rates which reflect the actual weight of the vehicle, not its registered gross weight.

A ton-mile tax would provide a truer assessment of cost responsibility than a weight-distance tax. But on the negative side of the equation, a ton-mile tax would necessitate stringent record-keeping requirements. For this reason, it may be more difficult to administer and enforce. A ton-mile tax would have significant revenue potential. The Highway Department has estimated, based on 1981-1983 biennium forecasts, that $18 million could be raised through the introduction of a ton-mile tax.

An axle tax might be based upon the number of axles per vehicle or the weight distribution per axle unit ("axle loading"). In either form, the axle tax is an effort to capture the effect which larger, heavier vehicles have on highway use. The state of Ohio, for example, employs an axle tax based on the

number of axles per vehicle and the number of annual in-state miles. Axle taxes, while equitable in theory, have inherent practical and administrative problems, including: (1) determining the proper cost allocation for each class of vehicle and (2) administrative and compliance costs.

Any of the third structure taxes, in general, will have an impact on the operating costs of larger trucks. Such taxes, therefore, may be politically unpopular.

3. General Taxation

An alternative to increasing existing user taxes or introducing new ones is to treat the problem of subterminal impacted roads as one of general taxation. If the problem is treated as one of general taxation, there are two basic strategies which might be followed: (1) increase the proportion of general fund dollars which are allocated for highway purposes, or (2) increase the existing level of general fund money available to the state. The latter option requires either a rise in the overall level of economic activity or an increase in the tax rate.

There are two possibilities for increasing the share of existing revenues devoted to highways: (1) increase the amount of undedicated general fund monies appropriated for highway purposes, or (2) earmark certain revenue sources which might otherwise become undedicated general fund monies for highway purposes. A portion of the sales tax on new automobiles,

automotive parts and repairs, new trucks, or truck parts, for example, could be dedicated for highway purposes. This appropriation might be more palatable since the goods or services which are being taxed are those which will eventually impact the highway network. The adoption of either of the above strategies without an increase in the tax rate may mean that funds have to be transferred from non-highway to highway uses.

4. Facility-Specific Tax

As an alternative to general taxation, revenues for upgrading and maintaining locally impacted highways could be generated thorugh a "subterminal tax". Such a tax could be levied at the facility responsible for generating the traffic and could be expressed on a per-hundred weight basis. For every unit handled at the facility, for example, a mill or a set number of mills could be assessed.

A subterminal tax would identify the economic activity which causes the impact and assign some cost responsibility to that activity. There would be several drawbacks to such an assessment, however. First, it would require an administrative scheme or apparatus for assessing and collecting the tax. Second, the cost responsibility or that portion of highway costs which should be borne by the facility would have to be determined. The allocation of highway costs among users is in many respects a difficult and imprecise practice. Third, such a tax could negatively impact a given facility. If the tax were

large enough, the competitive position of a facility already in place could be damaged. Fourth, such a tax could impact the configuration of the grain elevator industry itself. A relatively large tax could alter the location and/or marketing decisions within the industry.

5. Commodity Tax

Another possibility for financing subterminal impacted roads would be the assessment of a commodity tax. A commodity tax, while not identifying specific highway users, would identify a class or group of users who are responsible, to some degree, for increased highway impact. The difference between a subterminal tax and a commodity tax is that the latter would assign a degree of highway cost responsibility to the entire elevator industry rather than to specific facilities.

Administratively, a commodity tax would be quite feasible. the tax could be assessed on a hundred weight basis at each elevator.[39] A commodity tax, however, would present problems similar to those which would arise in the instance of a subterminal tax. A level of cost responsibility would first have to be determined. Second, the potential negative impacts on the grain elevator industry would have to be estimated and given due consideration.

---

[39]Because of the differences in densities among commodities, a hundred weight tax would appear to be preferable to a bushel tax.

B. County Financial Strategies

Counties generally will have a similar array of financial alternatives available for dealing with subterminal impacted roads as those which were discussed in relation to state government. The absolute magnitude of the financial resources will of course be much smaller at the county level, plus there are certain disadvantages arising from the limited size of the jurisdiction, particularly in the case of an inter-jurisdictional highway such as the Lefor road.

County financial strategies may generally be classified as either: (1) local user fees, (2) local taxation, or (3) debt financing. Each of these alternatives is discussed in the following paragraphs.

1.1 Establish Local Fuel Tax

Stark and Hettinger counties could assess a motor fuel tax which would raise revenues for upgrading and maintaining the Lefor road. Administratively, the tax could be "piggy-backed" on the existing state fuel tax.[4]

The problem with any motor fuel tax is that it does not really pinpoint the users of the impacted highway, nor does it tax them in proportion to their use. In addition to the equity problem, a county fuel tax poses the potential dilemma of evasion

---

[4]Highway Financing Alternatives, 1982.

through out-of-county purchases or uneven revenue potential for the counties. Truckers may purchase all of their fuel in either Stark or Hettinger county, a portion of each, or in neither.

1.2 Establish County Motor Vehicle Registration Fees

Stark and Hettinger counties might raise revenues for the Lefor road through a special motor vehicle registration fee. A fee could be established for one or more classes of trucks with the rates varying according to number of axles or other criteria.

The drawback of a local motor vehicle registration fee is that it does not tax in proportion to use. Also, an appropriate tier of rates based on some concept of cost responsibility would have to be determined. Also, trucks are very mobile and have wide geographic coverage. Registration fees therefore may not be equitable because of county road use by out-of-county truckers, and vica versa. A local registration fee may also be administratively difficult.

1.3 Tolls

A third possibility for the develop of local user taxes would be the establishment of tolls. Although toll roads are considered archaic in many circles, they nevertheless offer a potentially equitable solution to the question of highway use.

Turning the Lefor road or any impacted county road into a toll highway would have a number of drawbacks. First, an apparatus would have to be established to collect and manage the

tolls. The administrative costs of a toll road can be high. Toll roads normally require a gate or some structure plus personnel or an automated collection system. Normally, toll roads on light density routes have been found to be impractical because of the administrative overhead. Second, toll roads represent an inconvenience to motorists and a loss of time. Third, the proper toll or cost responsibility for each class of vehicle must be determined. Cost allocation, as noted previously, is not a simple task. Fourth, the revenue potential on a light density highway such as the Lefor road would not be very significant in relation to the size of the revenue problem.

2.0 Local Taxation

In lieu of or in addition to the establishment of local user taxes, Stark and Hettinger counties have the option of raising revenues for the Lefor road through taxation. Several options are available to the counties including: (1) reallocation of existing mill levy funds, (2) the assessment of an excessive levy and/or an extraordinary outlay, (3) the assessment of a county road levy, and (4) the assessment of a dedicated county sales tax.

2.1 Reallocate Existing Mill Levy

The July 1983 Schedule of Levy Limitations issued by the North Dakota State Tax Commissioner's office identifies six levies that counties can use to raise funds for road and bridge maintenance and upgrading. The basic levy limitation of a county

is 23 mills. The general funds which are collected under this levy may be allocated by county commissioners between roads and bridges and non-highway uses as seen fit, with a stipulation that a minimum of .25 mill be dedicated to highway purposes.

Although the basic levy limitation of a county is 23 mills, percentage increases allowed by legislative action over the last 2 bienniums have pushed many counties beyond the limitations. In the 1981-1983 biennium, counties were allowed to levy an additional 7% over the previous year's dollar amount, and an additional 4% in the 1983-1985 biennium.[=]

Of the current general fund levy, Stark county devotes 1 mill to road and bridge purposes, while Hettinger county devotes .34 mill (Table 1). At the counties' discretion, a greater proportion of the general fund levy could be devoted to road and bridge purposes. If all of the general fund levy were devoted to road and bridge purposes, Hettinger county could raise $258,768 and Stark county could raise $944,209. If 15 mills of the general fund levy were dedicated, the counties could raise $111,250 and $462,868 respectively.

[=]The mill rate also can increase when taxable land valuations in the county decrease because counties are allowed to collect the same amount of dollars as the year before.

Table 1. County and Unorganized Township Property Valuation and Levies for 1983.

	Hettinger	Stark
County Taxable Valuations	$7,416,696	$30,856,508
General Fund Mill Levy		
Road & Bridge	.34	1.0
Other	34.55	29.60
FAS Levy	10.17	--
Unorganized Township		
Taxable Valuation	--	$9,611,282
Road Mill Levy	--	25.28
Net County Road Levy	$77,942	$273,829

Source: Unpublished State Highway Department Data.

2.2 Assess an Excessive Levy

In addition to the general fund levy which encounters statutory limitations, counties are empowered to apply an excessive levy. An excessive levy can be assessed for any specific purpose that is identified to voters and approved by 60 percent of the votes cast. The levy amount cannot exceed an amount equal to 50% of the general fund levy. The excessive levy can be for one year and cannot continue past one succeeding year.

An excessive levy could raise $129,384 in Hettinger county and $472,104 in Stark county based on current levy limitations.

2.3 Assess an Extraordinary Outlay

Another type of levy, the "extraordinary outlay", can be assessed by counties. An extraordinary outlay can be assessed for any specific purpose, such as roads and bridges, but must be approved by a majority of the electors. The extraordinary outlay, however, is restricted to 3 mills.

The assessment of an extraordinary outlay by Hettinger and Stark counties could raise $14,150 and $92,569 respectively given current levy limitations.

2.4 Allocate Excess of Matching Federal Aid for Secondary and Farm Roads

Counties are also empowered to assess levies to raise funds to match federal aid for secondary and farm roads (FAS roads). Currently, Hettinger county assesses 10.17 mills for FAS roads (Table 1). Stark county makes no assessment. The levy rate for collections to match federal aid for secondary and farm roads cannot exceed 15 mills. Again, the county may collect the same dollar value as the previous year although county taxable land valuations decline, therefore possibly pushing the mill rate higher than 15. A 50 percent approval by electors will allow funds in excess of those necessary to meet federal matching to be used for "paving or for other hard surfacing or maintenance of county roads."

2.5 Establish County Road Fund

An additional levy of up to 5 mills may be assessed for the county road fund in counties of 2,000 population or more. A 60 percent majority vote of electors is required.

Neither Hettinger nor Stark counties currently assess this special highway improvement tax. Under current levy limitations, the counties could raise $37,083 and $154,282 respectively to be used for road and bridge purposes.

2.6 Levy Special Assessment

Counties are empowered to levy special assessments against property owners for highway improvements. Special assessments are normally targeted at adjacent landowners who benefit from improved access to land.

There is no statutory limitation on the level of a special assessment.

2.7 Enact County Sales Tax

A county sales tax could be enacted with all or a portion of the tax dedicated to roads and bridges. The tax could be "piggybacked" onto the existing state sales tax, minimizing the administrative expense involved. The revenue potential will depend on the volume of activity within the counties and the level of the tax.

With the exception of the special assessment, none of the levies mentioned previously provide a high single source of

potential revenue. Used in conjunction with each other, they may approach the estimated annual equivalency cost estimate of $1,000,000 for the Lefor road. Obtaining the initial upgrading or outlay costs of $8 million would appear to be beyond the counties' taxing capabilities for a given year or biennium, without a special assessment.

3.0 Debt Financing

In addition to their powers of taxation, counties also are empowered to issue general obligation bonds. Such bonds are long-term debt instruments for which payment is guaranteed by the county. Currently, state law limits the amount of general obligation bonds which can be issued to 1% of the county's assessed valuation. Under this legal debt restriction, Hettinger and Stark counties could issue bonds with total face value of $74,169 and $308,515 respectively.

Conclusions

North Dakota's grain transportation system has undergone significant changes in the past several years. Several benefits have accrued from these changes including increased transportation capacity and potentially reduced rail transport costs. However, the changes have not come about without associated costs. The rural road network has suffered due to the increase in heavy truck traffic on the rural road system.

Several solutions to this problem exist, but each has associated shortcomings, the least of which is not the absolute cost of upgrading and maintaining the system. The source of these funds is a critical issue in resolving the dilemma of road damage caused by truck traffic routed to a subterminal elevator. Jurisdictional decisions aside, the absolute level of funding required for mitigation of impacted roads will be substantial. Generating sufficient funds for solving the problem would require any one of the current funding sources to be increased significantly.

Due to the limits on local mill levies and the taxable valuations at the county level, it appears that road rehabilitation cannot be accomplished by county funds alone. On the other hand, outside parties may consider it a local problem to be resolved at the local level. State officials are not averse to handling such problems if funds are made available and if restrictions as to the size of the state system were removed or relaxed. But funds at the state level are also restricted, and current sources of highway funds would have to be expanded or new sources found if a state solution was used.

The absolute dollar amount which may be required to mitigate subterminal-impacted roads will preclude some state-level alternatives. For example, motor fuel taxes and vehicle registration fees would have to be increased significantly in order to address impacted roads on an effective scale. Other revenue sources such as ton-mile or weight-distance taxes may not

be feasible due to the impacts on the trucking industry. The state revenue source most conducive to generating sufficient revenue as well as ease of administration appears to be a form of general taxation, such as a general tax increase or earmarking some currently undedicated general fund monies for highway purposes. Alternatively, a levy could be assessed in order to more specifically or precisely assess the individuals or parties responsible for the road damage. Two alternatives are a tax on specific facilities utilizing interelevator truck shipments or a more general commodity tax.

Another alternative which may alleviate county funding limitations as well as state jurisdictional preferences may be some sort of intergovernmental arrangement. For example, a bond issuance at the state level specifically for rehabilitation of the Lefor road would avoid county debt financing limits while still leaving the road under county jurisdiction. County debt retirement may then be established through a sinking fund or other state-county arrangement.

It is apparent that the state is in need of a firm policy regarding inclusion of additional mileage into the state system, if one is not currently in place. This policy must certainly be compatible with laws regarding maximum mileage on the state system, as well as maximum annual state system growth. Both of these statutes, however, should be re-evaluated regularly to examine their appropriateness given the dynamic nature of

commercial and personal transportation patterns, and variable funding levels.

An evaluation must also be made of the current contribution by affected local jurisdictions to maintaining the Lefor road as well as others in the state. To the extent that a subterminal-impacted road serves both local and regional needs, it would be appropriate that some type of cost-sharing agreement be reached by the state and local jurisdictions for care of such highways.

Regional, state and local planning agencies must be continuously cognizant of commercial development in their areas and its potential road impacts. Officials must then work with private developers in planning a reasonable facility location in order to provide adequate transportation services, while at the same time minimizing negative impacts on the existing infrastructure. In addition, private developers and all concerned with commercial facility siting should be made aware of state and local transportation planning efforts. This would assist in preventing substantial investment in facilities without consideration of transportation-related factors. A strong educational compaign by existing planning agencies may be one way of accomplishing this objective. Without this advance planning, investments will be made and conflicts will naturally arise. Public officials will expect resultant local road costs to be internalized while private individuals will expect some solution from the public sector. Preventing this conflict far in advance of its occurrence would be in everyones best interest.