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# A Crash Course in Infrastructure

## Expensive but Essential Components for Rural (and Urban) Nebraska's Future

**Sandy Scofield, Director, University of Nebraska Rural Initiative**

"Ironically rural America has become viewed by a growing number of Americans as having a higher quality of life not because of what it has, but rather because of what it does not have." This quote from an unknown author found by a graduate student in the University of Nebraska Rural Initiative focuses on a point we often forget.

No doubt you can name many things we are happy not to have in rural Nebraska: smog, traffic jams, urban canyons, lack of green or open spaces, the list goes on. Many of these "deficiencies" amount to assets that rural areas may be able to turn into future opportunities. For example Dr. Larry Swanson, a rural sociologist, originally from Nebraska and now at the University of Montana, made the point that young people, like his twenty- something sons, are going to be looking for places to move that have amenities because "they can't afford to buy a house in western Montana." By "amenities" he is speaking of rivers, the wide open spaces, big skies and lush prairies, mountains, lakes, forests, and wildlife. Rural Nebraska offers many of the amenities his sons and others like them are seeking. We rank 10th in stream miles nationally, we have pine forests in the West and beautiful broadleaf trees in the Northeast and Southeast, expansive prairies with the Sandhills being the largest, and abundant wildlife. At least some of these enterprising young people who might consider Nebraska as they search for new roots will bring their own jobs with them or create them when they settle down. Retirees are another group who look for affordable places with amenities that offer an enjoyable lifestyle. Yet to appeal to these potential future rural Nebraskans we need to be planning long term to insure that the basics that underlie any successful community are built and maintained. I'm talking about the broad category of infrastructure.

Infrastructure is defined by Webster's as "the basic installations and facilities on which the continuance and growth of a community, state, etc. depend, as roads, schools, power plants, transportation, and communications systems etc." Infrastructure is easy to ignore and put off at budget time. It is largely taken for granted by many until it starts wearing out. Yet, without sufficient communications, transportation, schools, hospitals and other infrastructure essentials our natural amenities will not be enough to retain and attract a critical mass of citizens to build our future.

As one example of how important communications infrastructure is to attracting and keeping young people, let me relate something that happened a year ago when I was speaking to a University of Nebraska-Lincoln journalism class on rural issues. I asked how many would be willing to live in a community where internet service wasn't fast and affordable enough that they could download the latest games, movies and so on. No one raised a hand and in fact there was a look of incredulity on their faces that made me feel rather silly for even asking the question. It is true that Universities have especially fast internet services, and these graduates are leaving with expectations that they will have a similar level of service available at an affordable cost wherever they live. And they are not going to be willing to accept less.

We have places in Nebraska where access to internet and cell phone service would not meet the standards of these college students today. Those places are getting fewer and prices are getting better, but the trouble with technology is, it keeps changing. Upgrades are a constant need if we are to compete with urban areas. Furthermore the electronic "pipes" that carry internet services are filling up with file-sharing applications that crowd out other content and cause consumers' "last-mile" connections to get clogged. There is still a need to build out those last mile connections in some rural areas. New "peer-to-peer" (P2P) applications place even more disadvantages on those who use dial up, wireless or even cable connections, whether they live in rural or urban areas.

The current internet providers cannot be expected to invest in infrastructure that doesn't give them a return acceptable to their shareholders. It's going to require either a greatly increased number of customers in rural areas or some type of government support to insure rural areas are not left behind. There is also an ongoing debate about whether the Federal Communications Commission should place more regulations on the internet system in this country. Rural residents who are concerned about their future attractiveness to young people and the business competitiveness of their communities need to pay close attention to these issues and communicate with the providers of services and elected officials at both the federal and state level to insure our rural internet highways get better and cheaper instead of slower and less accessible.

Nebraska has done a remarkably good job over the years of maintaining highways, roads, schools, distance education networks, water and wastewater facilities, power plants and so on given we have a small population (just under 1.8 million, ranking us 38$^{th}$ in the nation) spread over 77,354 square miles. If you were to set out from the extreme southeast corner of Nebraska near Rulo and drive to the far northwest corner near Harrison you would travel just over 600 miles. North to south from Valentine to McCook is 200 miles, and a line straight east to west from Omaha to Scottsbluff would amount to about 475 miles. Nebraska ranks 15$^{th}$ in land area nationally. So just to maintain our 10,000 miles of state highways is a big effort.

Over the decades, visionary leaders in the Nebraska Unicameral Legislature (former Senator Jerry Warner comes to mind) and at the local level have championed the funds necessary to maintain these roads, bridges, power plants, parks, schools, and water supply and wastewater systems for communities.

As with all physical structures, maintenance of our state and local infrastructure is ongoing and expensive. For example, the cost of building roads has skyrocketed due to inflation in the cost of materials (many are petroleum based) and the cost of energy to complete construction and maintenance projects. Today a four-lane interstate highway costs about six million per mile to build, and a two lane highway about $1.5 million per mile. Too many people think infrastructure is either free or else don't think about it all. It's easy to ignore these big investments when they might be made before a crisis situation exists. Some communities now find themselves with aging infrastructure that they have put off upgrading because of the cost. It's a big problem. Unfortunately, we've underfunded infrastructure at the state and federal level, too.

Funding for roads in Nebraska has traditionally come from the Nebraska gas tax and motor vehicle taxes supplemented by federal funds. It's about a 50-50 mix. The use of funds from the Cash Reserve Fund in this year's legislative session is the first time we've allocated general funds (money from sales and income taxes) to roads. This is because we and all other states are concerned about changes in federal highway funds. The state highway construction program was $390 million in FY 2006, $350 million in FY 2007, and $341 in FY2008. The FY 2009 program is published at $317 million. The Nebraska Department of Roads is cautiously optimistic that additional federal funding could boost the program back up to $380 million, but that would still leave us below where we've been at a time when costs are increasing. Also, high-priced gasoline has reduced the amount of driving we are all doing, and that results in a drop in revenue both to the federal Highway Trust Fund as well as our own state roads coffers.

Our legislators are to be commended for stepping up in the 2008 session and addressing this issue. They know there is more to be done because the costs of transportation infrastructure are so expensive they cannot be maintained without adequate federal funds. Dipping into state general funds competes with other demands such as Medicaid. Medicaid pays for healthcare for the poor, who are primarily children and low income elderly-- most of whom are in nursing homes. K-20 education, prisons, law enforcement, and justice systems are a few other essential but expensive state responsibilities that squeeze a limited budget. We're going to need to find more long-range solutions unless the federal government further increases funding for highways. That may be a possibility given the concerns about the bridge collapse in Minnesota and the fact that people campaigning for office at the national level are talking about the importance of infrastructure, but rural areas need to make themselves heard in these debates to insure we aren't forgotten in the rush to address urban needs.

The roads funding formula Nebraska uses benefits the whole state. State funding generated by the gas tax and motor vehicle sales taxes not only goes for highways but also for the construction and maintenance of city and county streets and roads. In general 50.3% of these revenues go for state highways and 46.66% are sent back to cities and counties. This formula distribution is especially important to communities and counties across the state. Another advantage of Nebraska's road planning and construction is the fact the process is governed by an appointed Commission representative of all regions across the state. This buffers the funds from being distributed politically. Recently I was in a fairly good-sized small town in Montana and the streets off the main drag tended not to be paved. I was told this isn't uncommon. It made me wonder how many other states have maintained their infrastructure at the local level as well as Nebraska has.

While our state bridges are in reasonably good condition, some county bridges are showing problems and are being shut down or having weight limits placed on them. The federal government has increased requirements on local governments to inspect bridges which, while not a bad idea, puts already squeezed budgets under more pressure. A recent report in Iowa highlighted the need to upgrade rural bridges. This is not just a rural issue. Urban residents probably don't think about the need to maintain farm to market roads and bridges, but they relate directly to food and fiber supply as well as alternative energy transportation.

Good highways, roads, streets and bridges are essential. Alex Marshall, writing in the August 2008 edition of *Governing* magazine, observed, "The U. S. Constitution gives Congress the power to 'establish Post Offices and post Roads,' which shows that federal involvement with communication and transportation is as old as the country itself. …Despite this legacy, federal involvement in transportation has been on-again, off-again over the centuries…In recent decades, federal involvement has consisted more and more of the infamous 'earmarks,' where grants for say, bridges, are given on the basis of the sway of individual legislators." Marshall predicts more federal involvement in "the care and feeding of infrastructure" including more than roads and bridges but also water and sewer systems, electrical grids and transit systems. Yet it seems to me it is possible that rural America could be left behind the door unless we band together as rural states and speak clearly with one voice to our elected representatives about our needs. It is more important we address the shortfall facing the federal Highway Trust Fund rather than bog down in a debate about earmarks. In fact, in Nebraska earmarks have allowed for critical infrastructure to be built that would not otherwise have received federal funds.

Next year a new transportation bill will come up for debate in Congress. In 2005 this bill provided $21.6 billion for highways, bridges, rail and bus facilities, bike paths, and recreational trails. Rural advocates would be wise to pay as much attention to this bill as they do to the farm bill. The most recent proposal sent to Congress that will form the starting point for discussions about the new Transportation Bill places emphasis on urban areas, national highways and places with populations greater than 500,000. This will not be the final bill, but it's time now for states like Nebraska, and especially rural areas, to weigh into this debate while there is still time to influence where funds go.

Urban areas can be expected to request increases to improve mass transit funding. It may be time for rural areas to propose creative mass transit systems for our communities. Rural communities have aging populations that need transportation both in town and to other cities that offer medical care and shopping not available at home. As fuel costs increase, the number of nonelderly who would make use of such systems will likely increase as well.

Nebraska has two major railroads crossing its geography, the Union Pacific and the Burlington Northern Santa Fe, but they are largely devoted to the transportation of coal from the Powder River Basin in northeastern Wyoming to coal fired power plants both in and outside of Nebraska. Some of our rail system handles ethanol cars and also containers, but railroads to date have not had any financial incentive to provide passenger services. It would probably take an extensive expansion of the current rail system to accommodate passengers. Will the energy costs today lead us in that direction?

Nebraska is unique in the nation with its public power system and the Nebraska Public Power District (NPPD) is currently undergoing a planning process for the future. Our primary sources of energy are coal (60%) and to a lesser extent nuclear (20%). We also use some natural gas, and 10% of our power comes from wind and hydro. The cost of energy is projected to continue to rise under the current mix of sources, and expansion into more sustainable sources will also be costly. NPPD has already taken steps to move toward the development of more wind power. We rank 6$^{th}$ in the nation in wind potential yet only 20$^{th}$ in using wind to generate electricity. To make more use of wind will require building additional transmission lines and wind turbines which may mean increases in our electricity bills, but we can likely

expect increases even if we stick with our current mix due to new regulations on coal plants and other rising costs. Moving to alternative sources of energy will play an important role over time in increasing our energy independence. Our University professors report many queries about alternative energy sources including wind, solar and biofuels, and it appears the public is ready to push for new research and application of energy alternatives. One breakthrough that would help the feasibility of increased use of wind power would be batteries that could store the power generated by wind. Our infrastructure budgets should plan for the costs that will naturally accompany these changes. The good news is many of these changes promise new business and employment opportunities that will benefit rural areas.

At this point I can't resist putting in a plug for increased funding for research, education and outreach in the areas of water, climate change and options for reducing energy costs in various venues including cities, farms, public buildings and homes. While technically not infrastructure, such work would reduce money Nebraskans are exporting out of the state to heat, cool and light our public and private buildings and homes.

There are a few other communities nationally that are emphasizing "going green," so some of these might be used as advisors or examples. Greensburg, Kansas, which was destroyed by a tornado last year, is one example of such a community. Fairfield, Iowa is also doing work in this area. The *Wall Street Journal* featured a special section on energy on February 11, 2008, and highlighted innovative ways communities around the globe are cutting energy use. Nebraska will need to adapt existing strategies as well as devise its own, but there are models emerging we can draw from and various partners in the state who would be willing collaborators.

Other big ticket items in our infrastructure are water and wastewater systems. When I was in the Legislature we were concerned about remediating LUST—not what you are thinking, but groundwater contamination from Leaking Underground Storage Tanks. These were old gasoline storage tanks that had rusted and were contaminating drinking water. Other issues such as nitrates in the drinking water, which are particularly harmful to babies, were of concern. Compared to 25 years ago, we are in reasonably good shape on clean drinking water issues and wastewater programs. Funding for these issues come from Federal Safe Drinking Water Programs and waste water programs. Only nine percent of the Department of Environmental Quality budget is state funded, with the balance coming from federal funds and fees. The total DEQ budget is about $30 million, with 42% of that coming from federal funds. One new cost is that of regulating ethanol plants to protect water quality. Scientists and others are now raising concerns about emerging contaminants in our drinking water, such as pharmaceuticals, which could lead to new water quality initiatives. But for the most part, our attention today has shifted to water quantity issues.

Two other concerns remain in the water quality area. First, we have no contingency funds to deal with emergencies, so we are dependent upon federal funds to take care of contamination of water supplies. If we were to see another fire in a tire recycling facility or a tornado hit an ethanol plant, for example, we would have water quality issues and possibly contamination of air and land and the need to evacuate nearby residents as well. Second, in the case of super funds, which are used to clean up old contaminated areas such as munitions depots, the federal government sets an allocation and the state is

required to provide a 20% match. Currently we have $1.7 million for super fund expenditures. However, it would be prudent to have a fund set aside just for these kinds of emergencies, so that we can handle them as quickly as possible.

In the area of water quantity, the Platte River Cooperative Agreement is an example of a potentially expensive new issue that must be resolved. For example, if the state finds itself in the position of buying out water rights along the Platte River to comply with the agreement among Nebraska, Colorado and Wyoming, it would be very expensive for Nebraska taxpayers. Some have said it could make the cost of the Republican River issue look minor by comparison. So far, we have spent roughly $10 million to satisfy Kansas' demands on the Republican River. Unlike the area of water quality, the issues of water quantity and use do not receive any help from federal funds. A few years ago the Department of Natural Resources obtained some federal EQUIP money to help pay farmers for the difference in income between irrigated and dry land farming to help with Republican River flows. That was one-time money. We can expect additional costs in the future to settle water disputes as competing interests seek more water.

Along with highways, roads and bridges, communications systems, power plants, and water quality and quantity, health care facilities, schools, parks and libraries are essentials to undergird a high quality of life statewide and to keep our communities attractive to current and future residents.

Most hospitals in the state are private nonprofit with some being municipally or county owned. My hometown of Chadron is currently building a new hospital using LB 840 funds. Those funds are additions to the local sales tax that must be approved by a vote of the local taxpayers. They are a source of funding many other communities have used for a variety of local development purposes. The new public health program at the University of Nebraska Medical Center could be a real asset to expanding public health education and outreach in rural areas, but the facilities costs will continue and will be the responsibility of local entities. As our population ages, communities without good healthcare systems are at risk of losing their senior populations to places closer to medical facilities. Similarly, younger populations will seek out the places with good health care facilities.

State aid to schools is one of the largest portions of the state budget, and those funds, coupled with local property taxes, pay for the operation of the schools including salaries, supplies, utilities and so on. New facilities for public schools require a local bond issue. Probably most school buildings, like our houses and other public facilities, could reduce energy costs with additional conservation measures such as energy-efficient doors, windows and appliances --but finding funds for these upgrades can often be a challenge.

State aid to libraries, a relatively miniscule part of Nebraska's budget, provides for technical assistance to libraries and other services. These funds are supplemented by some federal funds that can be used on a project by project basis, but they don't sustain services over time. Federal funds can't be used for physical facilities but allow for such things as purchases of technology, software and special programs. Recently the Bill and Melinda Gates Foundation started the U.S. Libraries Program to assist libraries in purchasing computers. That stimulated efforts by libraries to upgrade their internet connections from

dial-up to broadband. The Nebraska State Library Commission also got a grant to help move small libraries from no internet or dial-up service to broadband. Some small libraries that are only able to be open a few days a week chose not to participate because of limited budgets. A new program from the Gates Foundation is expected soon to help upgrade broadband services, but regardless of size the physical facilities and staff for local libraries require local support. In an era of technology, libraries continue to be important places for the public to access information, particularly for those who cannot afford internet services at home. Libraries also improve the desirability of a community in the eyes of those seeking a new home.

Parks should not be forgotten as another feature that creates appealing communities. Nebraska is fortunate to have an extensive system of local, state, and national parks and historic sites. While state and federal sites obtain federal funds, local parks and historic sites usually rely primarily on local funds and contributors. Nebraska funds its state parks with cash generated by the dreaded "park sticker," but without these funds we could not maintain this outstanding system. There is concern at the Game and Parks Commission about the decline in sales of hunting and fishing permits because those funds are used to maintain and sometimes expand access to land suitable for wildlife. As with libraries, we should not underestimate the importance of parks and other recreational spaces in creating a Nebraska that is not only pleasant for current residents but appealing to new ones.

Recognizing the importance of our "green infrastructure," a collaboration of four units in the University of Nebraska's Institute of Agriculture and Natural Resources (the Nebraska Forest Service, the Nebraska Statewide Arboretum, the Department of Agronomy and Horticulture, and the University of Nebraska Rural Initiative) have banded together with many partners outside the University to form *ReTree Nebraska* (http//www.retreenebraska.unl.edu). The purpose of *ReTree Nebraska* is to encourage the planting and maintenance of one million new trees over the next decade. Because of storms, disease, aging, and development, our community tree canopy statewide has declined by nearly half since the 1970s. Trees benefit the environment, but they are also protectors of our infrastructure by shading streets. They increase property values, prevent soil and contaminants from entering waterways, clean our air and absorb carbon dioxide. Properly placed, trees can reduce home heating and cooling costs up to 25%. We are also threatened by the Emerald Ash Borer which has been found in states east of us. This insect kills ash trees and will be as deadly as Dutch Elm Disease was. Can you imagine our communities without ash trees? Probably 50% of rural trees are ash, so ReTree is proactively working to plant new trees before such a devastating event occurs.

Finally, rural and urban communities rely on Community Development Block Grants (CDBG), which are federal funds from the Department of Housing and Urban Development. They are administered by the Department of Economic Development in Nebraska and provide funds for such things as building community centers or providing infrastructure needed to accommodate new industry. Some large cities (Lincoln, Omaha and Grand Island in Nebraska) get a separate block of these funds and are known as "Entitlement Cities." All others in the state, the "Nonentitlement Cities," compete for one pool of CDBG funds. Federal funds provide around $30 million for these Nonentitlement Cities in Nebraska. A few years ago a proposal at the federal level would have rolled these and other community development funds into one pool which would have been a significantly smaller amount than the total available

through all the separate funds. Fortunately, the outcry from cities all over the nation prevented this cut, which would have been especially damaging to small rural towns.

The topics discussed above are not comprehensive. I've made no mention of fire departments, airports, or other critical community needs, but I thought I'd better stop before you started grabbing your heart with one hand and your wallet with the other. Clearly, we are talking about very expensive needs that taxpayers who want a future for the state and their communities are going to need to fund. We'll get some help from the federal government but not enough to do everything.

In order to insure these fundamentals are built and maintained, citizens need to pay attention to the quality of their infrastructure and its life expectancy. Then we need to advocate, NOW, for what we believe is important with our local, state and federal elected officials. And we have to be willing to pay for those things for which we advocate. Beyond that, it seems like a great opportunity to explore ways we can cooperate as communities to maintain the quality of life in our regions. Just as our ancestors came together to build barns and brand cattle, we need to work with our neighbors to find cost effective solutions to very expensive needs. For the most part, infrastructure isn't just "nice to have," it is essential and cannot be crowded out by other demands if we are to have a viable future. Some examples of cooperation are found now, with some Nebraska communities building water systems together that allow them to meet new federal water standards related to arsenic and uranium. More cooperation is needed in a variety of areas.

During my time in the Legislature I served for six of my seven years on the Appropriations Committee and represented the legislative district furthest from Lincoln. It was also the third (now the second) largest legislative district. My philosophy as to how I could best serve my constituents was "we don't have enough money to do everything, so try to steer funds toward infrastructure that provides the foundation for development of rural regions." Or, in other words, fund those things cities and counties cannot fund themselves but must have to undergird their efforts to be sustainable. When I was Chief of Staff to the Governor and then later head of the State Budget Office I became much more attuned to urban and rural differences, and it became even more obvious that maintaining a strong infrastructure across the state was probably the single most important thing state government could do for future economic development and for retaining and attracting a viable population base. However, state government can't carry the burden alone, unless the public is willing to pay higher taxes. Federal funds, local funds, cost effective cooperation, and some creativity are required.

Soon the Legislature will be reconvening, and the current large surplus will draw the attention of lots of well-meaning people with ideas to spend it. When the economic future is uncertain, it is a good strategy to spend surplus funds on one-time programs rather than those that will create ongoing demands for tax support. Many infrastructure projects are one-time expenditures. Now is the time to assess our infrastructure priorities for the future-- statewide, regionally and locally-- and get them on the Legislature's list. The more we can collaborate rather than compete as communities on these issues, the more likely we will be able to fund what we need. Likewise, as more rural states collaborate and advocate for federal funding that is good for rural areas, the chances improve for obtaining what we

need for a viable future. If we don't act now, the future will be very difficult in both rural and urban Nebraska.