

Rural Voices

THE MAGAZINE OF THE HOUSING ASSISTANCE COUNCIL

Summer 2004 • Volume 9 / Number 2



Rural Infrastructure

Dear Friends,

Rural Americans are often the last to access basic services such as electricity, water and wastewater systems, communications systems, and transportation. The lack of such infrastructure constrains affordable housing development in these areas and limits the sustainability of rural communities. While there has been significant progress in closing the infrastructure gap over the past several decades, many rural areas still struggle with access and affordability issues.

Adequate water and wastewater systems are vital to community health, economic development, and the environment. This issue of *Rural Voices* begins with an overview of water and wastewater infrastructure development in rural areas and an example of how a community in West Texas was able to pull together the needed resources to provide safe drinking water for its residents.

Rural residents have also lagged behind cities and metropolitan regions in access to utilities. In Nebraska, the challenge of supplying rural residents with reliable, affordable electricity was met by developing an entirely consumer-owned public power system. Efforts to provide rural residents with communications systems, including Internet access, and transportation systems, including public transit and roads, have connected rural communities to services and opportunities they otherwise would not enjoy.

Finally, we have provided an overview of the programs and services offered by the USDA Rural Utilities Service (RUS) to aid rural infrastructure and development.

The articles included in this issue illustrate the continuing need for basic infrastructure in rural America and the impact these developments have on quality of life for rural Americans.

Sincerely,



Arturo Lopez, Chair



David Lollis, President



Moises Loza, Executive Director

Contents



1 HAC FACTS

FEATURES

2 Progress and Peril

by Randolph A. Adams

The United States has made amazing progress in making clean, safe water and proper sanitation universally available; however, there are challenges to maintaining these systems.

5 Possum Kingdom Water Supply

by Matt Gergeni

A small rural community finds the partners, knowledge, and funding needed to provide safe drinking water for its residents.

7 Providing Affordable, Reliable Electricity to Rural Nebraska

by Wayne Price

Nebraska's unique public power system extends cost effective electric service to the state's rural residents and businesses.

11 The Streets of Lindsay

by Tom McCurdy

A city in the San Joaquin Valley tightens its belt to improve and maintain deteriorated streets.

13 A Rural Highway is a Place

by Joanne McEntire and Ross Lockridge

Context sensitive design preserves the historic, scenic, and environmental integrity of rural communities.

15 KARTS: A Lifeline to Society

by Diane Cox

Public transportation links rural residents to much-needed jobs and social services.

18 Reaching Rural America through Wireless Broadband

by Milana M. Barr

Rural broadband programs address challenges to extend Internet service to part of the "last mile" — reaching residents living in remote rural areas.

20 The View from Washington:

An Overview of the USDA Rural Development Rural Utilities Service

21 BOARD MEMBER PROFILES

John Foster, Pedro Rodriguez

HAC Facts

NOTES ABOUT SOME OF THE RECENT ACTIVITIES, LOANS, AND PUBLICATIONS OF THE HOUSING ASSISTANCE COUNCIL

HAC to Host Its National Rural Housing Conference

It's that time again! Those interested in and working toward affordable rural housing across the country are invited to attend *Building Homes, Celebrating Leadership: National Rural Housing Conference 2004*, December 9-11 in Washington, D.C. The HAC-hosted national conference will focus on the importance of leadership in rural housing and offer workshops, trainings, policy roundtables, and networking opportunities. HAC will also honor local and national leaders with the Skip Jason Community Service Award and the Clay Cochran Award for Distinguished Service in Housing for the Rural Poor. Major sponsors include the Enterprise Foundation, Fannie Mae Foundation, Fannie Mae Corporation, Federal Home Loan Bank and System, U.S. Department of Agriculture, and the Neighborhood Reinvestment Corporation. For more information, contact Pam Goodell, Conference Planner, 202-842-8600, ext. 144 or e-mail pam@ruralhome.org.

USDA RD and HAC Celebrate 40 Years of Self-Help Housing

To commemorate USDA Rural Development's 40 years of self-help housing and Homeownership Month in June, USDA and HAC hosted a nationwide poster contest for children. Young people whose families have benefited from the USDA Mutual Self-Help Housing Program were asked to illustrate through artwork what self-help housing means to them. "Self-Help Housing: What it Means to My Family and Me" drew over 80 entries from students across the country, with posters and stories from children ages 5 to 16 years old. There were five winners for each age group: elementary school, middle school, and high school. Each winner will receive a savings bond. All contest entrants will be presented with a certificate of appreciation for their participation in the contest. One picture has been produced as a poster for distribution during Homeownership Month. The 11 x 17" poster is available from HAC for a mailing charge of \$1.00.



USDA Rural Development 40-year anniversary and National Homeownership Month commemoration poster, "Self-Help Housing: What it means to my family and me." Artwork by Tessa Grooms, age 7, Bloomingburg Ohio.

Loan Fund Conducts Online Training

HAC's Loan Fund Division utilized an innovative training method this spring. On April 7, the Loan Fund division conducted a web-based training session for its new Self-Help Homeownership Opportunity Program (SHOP) borrowers. This training session gave organizations the opportunity to review the basics of closing a SHOP loan, as well as an overview of the loan disbursement and repayment processes. All organizations new to HAC's SHOP loan program were invited to participate.

The new training format integrated an online presentation with informal discussion. It allowed participants to interact both by telephone and through the web. The loan closing training session was the first in a series of trainings that the Loan Fund staff anticipate conducting over the next year.



Participants of the Sept. 2003 RCDI Peer Exchange Program at Tallahatchie Housing, Inc.'s forum in Gainesville, Ala. Pictured are Walter Beverly, maintenance supervisor; Gwen Dailey, operations manager; Jerome Little, executive director; and Betty Powell, site manager.

RCDI Peer Exchange Program Helps Tallahatchie Housing Increase its Capacity

Tallahatchie Housing, Inc. (THI) of Webb, Miss. was able to upgrade its property management capacity with the help of Panola Land Buyers Association Housing Development Corporation (PLBA-HDC) of Gainesville, Ala. and the HAC Southeast Office. As part of the RCDI Peer Exchange Program (funded by USDA and Ford Foundation), which enables groups to share their skills and experiences directly with each other, THI studied PLBA-HDC's approach to property management. THI owns 12 multifamily projects and currently manages four, and is interested in both taking additional properties under its management and improving its performance at the properties currently managed. As part of the Peer Exchange Program, THI spent four days in September 2003 at PLBA-HDC, with PLBA-HDC making a visit to Webb in return for three days in November 2003. HAC's Southeast Office coordinated the exchanges. Participants in the program have appreciated the forum for groups to share their expertise and grow together. HAC hopes to provide additional peer exchanges in the future.

PROGRESS AND PERIL

by Randolph A. Adams

As we approach universal access to water and sanitation services, serious challenges remain.



Aerial photo courtesy of Bonestroo, Rosene, Anderlik & Associates, Engineers & Architects.

Cambridge, Minn. wastewater treatment plant

In the last half of the 20th century, the United States made amazing progress in making clean, safe water and proper sanitation universally available. In 1950, more than one-quarter of all households lacked indoor running water and/or indoor toilets. By 2000, the number of homes with inadequate water or sanitation was well below 1 percent. These improvements reflect a huge public investment in basic water and wastewater infrastructure over the past 50 years.

As we approach universal access to water and sanitation services, serious challenges remain. We face the prospect that the gains already made may not be sustainable, especially in small rural communities and on tribal reservations. The water and wastewater infrastructure put in place over the past five decades is deteriorating and investments in maintenance and replacement are simply not keeping up. Massive infusions of money and effort are needed to reverse this trend.

The Good News in Rural America

Despite geographic isolation, higher costs for installing basic infrastructure, and many economic disadvantages, rural communities in the United States have made huge strides in getting access to proper water and sanitation. While it remains true that rural households are somewhat more likely to lack indoor plumbing, the gap is shrinking.

As was and is the case with electrification and communications infrastructure, rural communities generally have been the last to access water and wastewater infrastructure. Many rural towns and villages might not have been able to access these systems without intervention and support by federal and state programs and agencies. According to the U.S. Environmental Protection Agency (EPA), more than \$1 trillion has been spent on drinking water treatment and supply and wastewater treatment and disposal nationally, and a significant

proportion of that has been used to extend water and sanitation services to rural communities.

Historically, there has been little federal assistance for drinking water systems. Local communities built most of the public municipal water systems around the country. Before 1996, the primary source of federal funding was the U.S. Department of Agriculture (USDA).

Through its Rural Utilities Service (RUS), USDA provides both municipal water supply and wastewater treatment grant assistance of more than \$600 million a year and more through loans to communities with populations of less than 10,000. Today, the U.S. has more than 54,000 community water systems. These systems consist of drinking water treatment plants, wells, storage facilities, and transmission and distribution water mains.

Following enactment of the 1996 Safe Drinking Water Act Amendments, Congress began providing grants to states to capitalize Drinking Water State Revolving Loan Funds (SRFs), modeled after the Clean Water SRFs. Between fiscal year 1997 and fiscal year 2001, Congress provided \$4.4 billion for the Drinking Water SRFs. From 1996 to 2000, states provided about \$2.4 billion in assistance through this program. Forty-one percent of that assistance was provided for projects to meet treatment needs; 29 percent was allocated to meet transmission and distribution needs. The remaining 30 percent was provided for water storage, developing sources, technical assistance, and other drinking water needs.

On the wastewater front, infrastructure is largely comprised of systems that collect and treat wastewater, and additional interceptor and collector sewer systems that transport storm water runoff. Federal, state, and local investment in our national wastewater infrastructure has been approximately \$250 billion since the early 1970s. Of this amount, Congress has appropriated approximately \$100 billion to EPA to provide funding through the Construction Grants program, Clean Water SRFs, and other programs. State and local governments have contributed the remaining \$150 billion, primarily from revenues received from local ratepayers. Other sources of state and local funding include the 20 percent match provided by states to receive federal funds for the SRFs, revenues from state bonds, grants from state funds to local communities, and municipal debt.

This investment has provided enormous environmental, public health and economic benefits to rural communities. For example, the number of people served by secondary or advanced wastewater treatment has more than doubled from 85 million in 1972 to 179 million today. Though the percentage for rural communities is somewhat lower, about 70 percent of the total U.S. population now has access to “secondary wastewater treatment,” the basic standard for municipal wastewater treatment in the Clean Water Act or better. While the population has increased by 30 percent in 20 years, the total pollutant discharges from wastewater facilities have decreased by about 40 percent.

Indeed, one could safely argue that the state of rural water and wastewater infrastructure is better than it has ever been.



RURAL VOICES

ruralvoices@ruralhome.org

Statements made in *Rural Voices* are the opinions of the authors of the individual articles, not of the Housing Assistance Council. Subscriptions to *Rural Voices* are free, but donations of \$12 per year are gratefully accepted. Single copies and back issues are \$4. Material may be reproduced without permission, but *Rural Voices* should be credited.

The Housing Assistance Council (HAC) is a national nonprofit corporation founded in 1971 and dedicated to increasing the availability of decent housing for low-income people in rural areas. HAC strives to accomplish its goals through providing loans, technical assistance, training, research and information to local producers of affordable rural housing. HAC maintains a revolving fund providing vital loans at below-market interest rates to rural housing developers. Developers can use these funds for site acquisition, development, rehabilitation or new construction of rural, low- and very low-income housing. HAC has a highly qualified staff of housing specialists who provide valuable technical assistance and training, and research and information associates who provide program and policy analysis and evaluation plus research and information services to public, nonprofit, and private organizations. HAC is an equal opportunity lender.

EDITORS Milana M. Barr, Theresa Singleton, and Alice Settle-Raskin **ISSN 1903-8044**

HOUSING ASSISTANCE COUNCIL

NATIONAL OFFICE	MIDWEST OFFICE	SOUTHEAST OFFICE	SOUTHWEST OFFICE	WESTERN OFFICE
1025 Vermont Avenue, NW, Suite 606 Washington, DC 20005 TEL 202-842-8600 FAX 202-347-3441 E•MAIL hac@ruralhome.org	10920 Ambassador Drive, Suite 220 Kansas City, MO 64153 TEL 816-880-0400 FAX 816-880-0500 E•MAIL midwest@ruralhome.org	615 Peachtree Street, NE, Suite 1130 Atlanta, GA 30308 TEL 404-892-4824 FAX 404-892-1204 E•MAIL southeast@ruralhome.org	3939 San Pedro, NE, Suite 7-C Albuquerque, NM 87110 TEL 505-883-1003 FAX 505-883-1005 E•MAIL southwest@ruralhome.org	131 Camino Alto, Suite D Mill Valley, CA 94941 TEL 415-381-1706 FAX 415-381-0801 E•MAIL susan@ruralhome.org

www.ruralhome.org

Aerial photo courtesy of Bonestroo, Rosene, Anderlik & Associates, Engineers & Architects.



Carver, Minn. wastewater treatment facility

The Infrastructure Gap

In a landmark report issued in 2000, the Water Infrastructure Network (WIN) made the case that while the U.S. spends about \$22 billion per year on wastewater treatment infrastructure and \$24 billion on water infrastructure, that spending is falling short by about \$12 billion and \$14 billion per year, respectively. EPA's Infrastructure Gap Analysis of 2001 data puts those figures at approximately \$13 billion and \$13.5 billion, but those numbers assume no growth in revenue. Factoring in revenue growth, EPA's gap estimates drop to about \$2.25 billion and \$1.5 billion per year.

While much of the publicity regarding the infrastructure gap has been focused on urban communities, the situation in rural communities is of no less concern. For example, a study by the West Central Initiative in rural Minnesota shows that state's small communities will need to spend \$6.9 billion over the next 20 years to repair and replace aging water and wastewater infrastructure.

Where rural communities are concerned, there is yet another factor to consider: The gap analyses, regardless of their sources, assume that communities will continue to make at least some investment in their infrastructure and can take advantage of state revolving loan funds and other funding sources. This, in turn, assumes that present economic conditions and population patterns will remain the same or improve. If present trends continue, however, despite the national growth in revenue, many rural utilities may find they have fewer and fewer customers, who cannot afford the rate increases necessary to make up for a shrinking revenue base.

Affordability Issues

Infrastructure maintenance, improvements, and affordability are all interrelated. While water and sewer rates all over the United States are some of the lowest in the world, rates are rising and will continue to do so. In part, rate increases stem from the gap between what water and sewer systems are generating in terms of revenue and what must be spent to maintain service. Systems must set rates to reflect the full cost of capital investment, operations, and maintenance.

In rural areas, water rates vary dramatically by community, based on factors such as the quality of source water, amount of treatment needed, the distance of plants from users, age of the pipelines and treatment works, and maintenance. Geology and history also play a role. The situation is made worse by the lack of social services in many rural areas—services that might assist those who cannot afford higher water rates.

Problems with water affordability seem to be more acute in rural areas. For instance, analyses of Census 2000 data on water and sewer rates indicate that average water rates are greater in rural nonmetro areas than in metro areas. Ohio EPA, for example, estimates that the affordability of combined water and sewer rates is an issue for 13 percent of the urban population, but 33 percent of the rural population.

What Lies Ahead?

When the results of Census 2020 are tabulated, will we find that we have brought clean safe water and sanitation to that last .6 percent of households that lacked them in 2000? Or, will we find that we have slipped back to tolerating a few percentage points less than universal access? Will we continue to improve and maintain the existing infrastructure, especially in small isolated rural communities? Or, will we do the minimum and put off much needed investment until a real crisis looms?

Continued progress will likely depend on a combination of education and investment. Consumers, both rural and urban, must come to understand the value of a clean, safe water supply and proper sanitation, along with the true cost of providing it. Local, state, and federal legislators and agencies must come to understand that investing in basic infrastructure is critically important to public health and economic vitality. And we all must recognize that hard-won progress will evaporate without a continuing effort to maintain it. 🌱

Randolph A. Adams, Ph.D. is executive director of the Rural Community Assistance Partnership, Inc. located in Washington, D.C.

POSSUM KINGDOM WATER SUPPLY

by Matt Gergeni

Local providers were struggling to meet the stringent health and safety requirements set by the Safe Drinking Water Act passed by Congress in 1974.



Photo courtesy of Possum Kingdom Water Supply.

Front view of Possum Kingdom Water Supply facility.

It took only a matter of days for the mighty Brazos River to engulf the deep valleys of Palo Pinto County, creating the great blue expanse now known as Possum Kingdom Lake. However, transforming what was to become a valuable recreational resource into a commodity capable of quenching the thirsts of local residents would require years of perseverance and a helping hand from Fayetteville, Arkansas-based Community Resource Group, Inc.

Water Brings Growth to the Valley

Created in 1941 when the Civilian Conservation Corps first cracked open the nine massive gates making up the Morris Sheppard Dam, Possum Kingdom Lake soon surpassed the expectations of its designers, who predicted that it would transform the region into a “veritable paradise.” Growth and prosperity soon began to blossom along the shores of the lake as the population expanded and the tourism trade took root. However, with the burgeoning population came an increased need for a source of safe drinking water.

“Pretty much everybody had private water systems out here,” said George Bailey, owner of a small fishing camp along the eastern shore of the lake, which covers nearly 20,000 acres of the former riverbed. “Those that couldn’t get hooked up usually hauled in their drinking water, but for everything else they just took it straight from the lake.”

Water: Plentiful, But Not Safe to Drink.

Considered one of the most scenic lakes in Texas, Possum Kingdom’s 310 miles of shoreline offer an assortment of scenic wonders ranging from sandy beaches and soaring cliffs to the spectacular striped bass fishing (current lake record 34.19 lbs.) that has supported Bailey, and many of his neighbors, over the years. “The lake means a lot to us,” he said. “It helped put this area on the map.” While local residents have always considered the shimmering basin a symbol of prosperity, the region’s water problems continued to grow as more and more people were drawn to its scenic shores.

Over time, more than 50 small water systems popped up around the lake, each struggling to meet the needs of local businesses and residents. According to Bailey, who operated one of the private water systems supplying drinking water to his fishing lodge and a few neighbors, “... there was one small hitch. None of us were supplying fully treated drinking water like the law requires.” Local providers were struggling to meet the stringent health and safety requirements set by the Safe Drinking Water Act passed by Congress in 1974.

Water Woes Begin to Mount

Residents say the local water problems were initially overlooked by state authorities who had other concerns, but as the region developed into one of the state’s most popular recreational resources, it became clear that the days of unregulated water treatment must soon come to an end. Possum Kingdom’s potability problem—the prevalence of untreated water that is unfit to drink—became a state problem, as well.

The Salt Fork flows from the Brazos River and as it flows through Stonewall and Knox counties, it picks up chlorides—salt—and carries them downstream to the first dam on the Brazos—Possum Kingdom. After years of warnings, threats, and citations from the Texas Commission on Environmental Quality (TCEQ), the state office charged with enforcing the standards set by the federal Safe Drinking Water Act, the situation became impossible to ignore. For most residents, it was time to “quit playin’ possum” and figure out a better way to supply their homes and businesses with safe drinking water.

Water Flows Faster than Funds

Recognizing their dilemma, a handful of residents living near the lake formed a committee and turned to state officials to find some answers to their problems. “We spent several years looking for a solution and TCEQ basically told us the problem was so big that they didn’t have the money to help us,” said Bailey. “After trying that route, we really didn’t know where to turn. The same people who were telling us we had to do something didn’t seem to have any idea how to go about doing it.”

In the past, a number of barrier projects, including diversion dams, were studied as potential solutions to the salt-water problem in Possum Kingdom. Researchers speculated that without the high salt content, the treatment process could be made more affordable. After numerous studies, state officials eventually turned to technological improvements as the most viable way to treat Possum Kingdom’s water. Those solutions included reverse osmosis and electro dialysis reversal.

Reverse osmosis uses high pressure to force water through synthetic membranes with pores so small that chloride ions cannot get through. Electro dialysis reversal charges the chloride ions so that they are removed through two membranes, leaving fresher water behind. Researchers eventually settled on the reverse osmosis as the most effective and affordable treatment option.

Water is Thicker than Blood in Some Relationships

Full of ideas, but short on cash, local residents were eventually directed to Community Resource Group, Inc. (CRG) and its Texas state coordinator, Mary Baiza, who helped find a solution to their financial woes. CRG is a multi-state, nonprofit organization based in Fayetteville, Arkansas. For over 25 years, as part of the national Rural Community Assistance Partnership (RCAP) network, the organization has worked closely with Rural Development offices across a seven-state service area to provide on-site technical assistance to over 600 small water and wastewater systems. Established in 1975 to help people in the rural South build hometown futures by seeking long-term solutions to community-wide problems, the organization also provides shelter and transportation assistance to communities in their service region.

With Baiza’s help, the residents formed the Possum Kingdom Water Supply back in 1992 and elected its first board of directors. “Mary has been with us from our very first organizational meeting,” said Bailey, who served as the Possum



Photo courtesy of Possum Kingdom Water Supply


Side view of Possum Kingdom Water Supply facility with water tower/holding tank in background.

Kingdom Water Supply’s first president. “She has led us by the hand--bless her heart. We relied on her to help us get this thing put together and she showed us the way. She showed us which doors to open.”

Baiza worked closely with the newly formed water board, as well as state and federal officials, to secure financing for the project.

Nearly a decade was spent planning, organizing, and constructing what will be a \$13 million state-of-the-art water treatment and supply system, and water began flowing into homes around Possum Kingdom Lake this past spring. “We have the first three phases of our five phase plan completed. Right now, roughly 1,700 members have signed up and about 1,300 are already getting water,” said Bailey. “When you consider that at first we only expected about 800 members total, that’s not bad.”

Pleased to be moving toward their goal of providing safe, affordable drinking water to all of the businesses and residents living around the lake, board members say that within the next year they expect to begin supplying water to the entire Possum Kingdom Lake State Park, including its busy campgrounds and marina.

The Possum Kingdom Water Supply board unanimously approved a resolution in March, thanking Baiza for “tirelessly and continually providing advice and genuine expertise on virtually every aspect of the project from the initial idea to a real system delivering water...and providing inspiration and resolve during the first four years when funding for a system of this size began to seem impossible.” 

Matt Gergeni is a feature writer for the State Drinking Water Trust eBulletin.

PROVIDING AFFORDABLE, RELIABLE ELECTRICITY TO RURAL NEBRASKA

by Wayne Price

Today, Nebraska is the only state in America that is completely served by a consumer-owned public power system delivering electricity as a nonprofit service.

History of Rural Electricity in Nebraska

Rural Nebraska in the 1930s, like much of rural America at the time, was home to farmsteads and small towns that were living in the dark. Most of rural America was not being provided the life-changing power of electricity that was already available to many urban areas simply because investor-owned utilities knew they could not make a profit by providing service in rural areas. Public power was created through federal legislation as a means to provide electricity to the entire nation.

In Nebraska, electricity was a vital asset in irrigation and, therefore, important to the agricultural economy. A number of irrigation districts were started in the early 1930s; however, they did not have the funds to move forward until the U.S. Congress passed the Reconstruction Finance Corporation Act in 1932. A year later the Nebraska Legislature made use of this Act and passed Senate File 310 authorizing public power and irrigation districts to be formed as public corporations and political subdivisions of the state. This action opened the door for two of Nebraska's more well-known features, irrigation and public power.



Photo courtesy of Nebraska Rural Electric Association

Lineman Jeremiah Krysl, in the bucket, connects the wire to the crossarm as the other crewmen remove the line sag.

Nebraska Senator George Norris led the movement towards providing power to rural America in the U.S. Congress with the Rural Electrification Act. This act, passed in 1936, required that power generation and delivery systems be owned by the public for the public good. Norris felt that public power represented a way to ensure that every American had access to reliable service at a reasonable price.

Today, Nebraska is the only state in America that is completely served by a consumer-owned public power system delivering electricity as a nonprofit service. Nebraska residents receive dividends in the form of reliable, low-cost electricity.

Nebraska's Public Power System

While the system may seem complicated, the public power governance system is fairly easy to understand if it is broken down into pieces. Nebraska has 121 municipal electric systems, 31 public power districts, and 11 rural electric cooperatives. Each of these systems is governed by Nebraskans, people who are locally elected and appointed. These governing bodies set rates, approve budgets and financing decisions, and oversee quality of service.



Lineman Steve Nelson, left, and Mark Thompson prepare to string wire for a new irrigation service in Holt County.

The Nebraska Rural Electric Association

The Nebraska Rural Electric Association (NREA) is the private nonprofit trade association for the 35 rural electric systems that provide electric service to consumers in most of the rural areas and many of the small towns across Nebraska. Together, the more than 950 dedicated employees of our member-systems serve approximately 215,000 meters and over 400,000 consumers across more than 85,000 miles of line.

NREA was formed in October of 1935 to help the early leaders of public power deal with problems of standardizing line construction and obtaining wholesale power supplies. Over the years, NREA's mission has evolved to include a broad range of activities to assist our member-systems as they face the many challenges of providing low-cost, reliable electric service to the sparsely populated regions of Nebraska.

Today, the quality of electric service in the most remote areas of the state equals or exceeds the electric service available in our largest communities. This achievement continues to be a source of pride for NREA General Manager Jay Holmquist and the directors, managers, and other employees of our member-systems.

"This accomplishment has not been without its challenges, and as we work through the 21st century, we will face many new technical, economic, and political challenges," Holmquist explained. "Nebraska's rural electric leaders will meet these challenges and will continue to be guided by their customer's desire for reliable, high-quality electric service at affordable rates."

For over 60 years, Nebraska's rural electric systems have made Nebraska a better place to live, work, and raise a family. That continues to be the NREA mission for the next century.

The state's largest power supplier, Nebraska Public Power District (NPPD), has been a key factor in providing low-cost, reliable electricity. CEO Bill Fehrman is developing strategies to meet the growing demand and maintain reasonable rates.

"As we're trying to lay out what we're going to do, we're going to be putting a lot of assumptions in our model because none of us can predict what's going to happen 20 years from now," Fehrman said. "But if we can study it and have some comfort in learning what's gone on in the past and applying those lessons to the future, hopefully we can come up with a plan that's within our range."

NPPD has been devoted to economic development and working to enhance the quality of life in rural Nebraska.

"It's an amazing thing to see what our load has done over the past few years," reflected Fehrman. "The irrigation load has gone

Nebraska's public power system has a number of inherent benefits. The ratepayer's dollars remain in the state and are reinvested in the community in the form of economic development or reinvestment in the infrastructure. The system is responsible to Nebraska state residents, not just a board of directors. Not focusing on making a profit for shareholders, public power can pay attention to customer needs and maintain low rates for all residents and businesses, regardless of size.

Public power also offers reliable, efficient, and friendly service. Nebraska's public power providers have a proven track record. Electric service is rarely interrupted and problems are handled quickly by local offices throughout the state. All customers, rural or urban, receive the same priority service from their local public power employees.

Photo courtesy of Nebraska Rural Electric Association



Shane Powell holds the arm on a bucket truck as he raises the wire conductor to be attached to the insulators.

up tremendously and with more ethanol plants and things like that coming into the state, it's a great opportunity for economic development. The challenge for us is to make sure that our energy rates remain competitive so that we can still use that fact to draw people into the state and help build rural Nebraska."

Case Study: the Niobrara Valley Electric Membership Corporation

In 1948 the Niobrara Valley Electric Membership Corporation (EMC) opened its doors for business. Three years earlier, a group of dedicated pioneers faced the challenge of bringing electric power to the rural people of Holt and Boyd counties in north central Nebraska. The towns in this region had power, and these men believed that rural residents should have the same benefits as the townspeople. They filed the Articles of Incorporation for the Niobrara Valley EMC with the Secretary of State of Nebraska on August 13, 1945. It wasn't until 1948 that the cooperative hired Ed Wilson as the first manager and building materials started arriving.

The cooperative formed as the result of many people living in Boyd, Holt, and Knox counties working long hours and driving many miles at their own expense. The result of their effort was the creation of an organization that could borrow money

from the Rural Electrification Administration (REA) to finance the construction of an electrical distribution system to bring electricity to their farm and ranch homes.

On September 12, 1946, the Rural Electrification Administration authorized a loan for \$520,000 to the cooperative for the construction of electric lines and substations. Because of the war and the difficulties in securing priorities for material, it was impossible to start immediately. In early 1948, it appeared this restriction on materials would be lifted and it was time to get started.

In August 1949, the first farmer was connected to lines of the Niobrara Valley Electric Membership Corporation in Boyd County. A second contract for construction of lines was announced and the first farm in Holt County was connected in February 1950. Today, the Niobrara Valley EMC serves over 5,300 meters on more than 2,500 miles of line. The total electric plant investment to serve these customers has grown from \$520,000 in 1946 to over \$20 million today.

In the beginning, power was not cheap. In the first few years of the cooperative, electric power purchased by the members cost 64.5 cents (in today's dollars) per kilowatt-hour. The average monthly electrical use was 60 kilowatt-hours per month.

Today the power sold by the cooperative costs an average of 6.5 cents per kilowatt-hour. The average farmstead in 2004 uses 309 kilowatt-hours per month.

Providing low-cost, reliable electricity to each customer continues to be the goal of General Manager John Hoke, who has served in this position since 1990. Hoke grew up in the electric utility business, choosing to follow in the footsteps of his father and grandfather. Both worked for Kansas Power & Light, an investor-owned utility, in Kansas. Hoke's father later took the job of manager at Southern Public Power District in Grand Island, Neb.

Hoke worked for Midwest Electric Cooperative Corporation in Grant, Neb. prior to becoming the general manager at Niobrara Valley EMC. He understands the cooperative principles and the need to provide reasonable, efficient electricity to the rural areas.



Photo courtesy of Nebraska Rural Electric Association

NVEMC Foreman Mark Thompson, center, changes a spool of wire with help from Shane Powell, left, and Steve Nelson, operating the digger truck.

“I feel like our cooperative can provide better service because we know our members when they walk in the door,” Hoke said. “We know their names. An IOU [investor-owned utility] sees them as just another meter.”

One of the benefits Niobrara Valley EMC members receive is customer service. Customer requests are responded to quickly by the co-op's 24 employees.

“I like to think that we're in the business to serve our customers, not to make a profit,” Hoke said. “We don't have shareholders that we have to report to.”

The co-op has always stuck with its core business of supplying electricity to its customers. While many other electric utilities in Nebraska were venturing into the realm of providing energy related services and products, Niobrara Valley EMC studied the issue carefully. Hoke and his staff looked at many of the products, including providing Internet service, and discovered that others in the area were already providing similar services.

Rather than compete with local businesses or subsidize rates to provide these types of products and services, the co-op made the decision to focus on the core business of delivering affordable electricity.

Being able to provide low rates has helped Niobrara Valley EMC attract a number of industrial customers to its area. A potato processing plant and a galvanizing operation are two of the industries that have started operating on the co-op's lines. Hoke identifies Nebraska's low rates as part of the reason many companies decide to open businesses in the state. 🌱

Wayne Price is editor of the *Rural Electric Nebraskan* and the director of public affairs for the Nebraska Rural Electric Association.

Photo courtesy of Nebraska Rural Electric Association



Lineman Jeremiah Krysl, in the bucket, connects the wire conductor to the crossarm as Steve Nelson, right, and Shane Powell, work to pull the slack from the line.

THE STREETS OF LINDSAY

by Tom McCurdy

By the late 1980s and early 1990s, Lindsay officials realized that the city's infrastructure was rapidly deteriorating.

Photo courtesy of City of Lindsay Public Works Dept.



Typical street pavement failure area where numerous trench cuts have occurred over time.

The City of Lindsay has recently faced the same question that many other communities are faced with today, “How do we improve or even maintain our street system without adequate funds?”

Lindsay, a small community of 10,000 located on the east side of the San Joaquin Valley in California, was founded as an agricultural area by Capt. Arthur J. Hutchinson who began developing approximately 2,000 acres in 1889. The city's infrastructure was developed soon after its founding; however, there have been few improvements over the years. By 1905, approximately 700 acres of oranges had been planted but only a few acres were actually producing fruit at that time. The Southern Pacific Railroad expanded service through Lindsay to meet the demands of the increasing population and transportation needs of local fruit crops and the logs from the surrounding areas. In 1910, the town was incorporated with approximately 700 residents within the city limits. With citizens eager to develop their community and its economy, a \$130,000 bond issue was approved in 1911 to develop a water system and construct a sewer system.

By 1916, there were 23 blocks of paved streets in the city and a rapidly growing population of 3,000. Construction of the paved streets, concrete curbs, and culverts were undertaken by assessing property owners with their share of the cost. Historical records indicate that most property owners paid their assessment, and for the community, this was a very bold step in controlling their own future.

Deferred Maintenance, Pressing Needs

Like many communities, Lindsay allowed these early improvements to long outlive their useful life. By the 1970s, a reduced maintenance schedule led to inadequate protection of infrastructure and fixed assets. While it is difficult to point a finger at a specific event or group, the deferred maintenance approach became the acceptable standard for many years. Over time, budgets were adopted that assigned smaller percentages of the gas tax and general fund expenditures for general street maintenance.

By the late 1980s and early 1990s, Lindsay officials realized that the city's infrastructure was rapidly deteriorating. However, there was a downturn in the local economy during this same period. These events seemed to have a compounding effect; while unemployment grew, local gas and sales tax revenues fell dramatically. Consequently, there were fewer resources available for street repairs and maintenance.

Searching for solutions, staff began looking for funding alternatives. A study was conducted in 1991 of all city services and fixed assets. The Management Services Institute (MSI) study took inventory of infrastructure and fixed assets, as well as the costs of other activities including, making report copies, police and fire service calls, and facility maintenance. The MSI report was prepared in accordance with the California constitution, the now historical Proposition 13, and Proposition 4. The MSI report identified an estimated replacement cost of \$17,480,635 for all city streets and recommended an annual expenditure of \$874,030 for maintenance. The City did not have these funds available or any method to adequately fund the cost to protect these assets. While the Lindsay City Council adopted a resolution in 1992 that raised fees for some services, these did not solve the infrastructure problem.

In 1994, staff prepared another study, *Today's Infrastructure and Its Relationship with our Community*. This report was a more in depth study, including numerous pictures that illustrated the severity of Lindsay's infrastructure problem.

Finding a Solution

While the city council recognized and understood these reports, there did not seem to be a way to raise adequate funds to solve the problems. In 1995, the city began a program to seek grants and loans to fund specific projects. Funds were obtained for a water improvement project that constructed two groundwater wells, installed a water transmission line, and replaced numerous main lines. In 1999, the program was expanded to include construction of a four million gallon water tank, expansion of the water treatment plant and replacement of additional water mains. A sewer project was undertaken in similar fashion by expanding the sewer treatment plant and replacing a major portion of the original sewer trunk line which was constructed in 1911.

With the development of regional transportation projects through the Tulare County Association of Governments (TCAG), Lindsay recognized that other levels of funding might be accessible to our small community. We began a process of attending TCAG meetings and providing input on regional projects. More importantly, we were able to nominate our own projects, which resulted in unexpected funds becoming available. These projects included installing curbs, gutters, and sidewalks to enhance pedestrian travel and reduce air pollution—a significant issue in California.



With a new city manager taking the reins in 2003, the city council began a process of setting long-term priorities. The city council was, and continues to be, very focused in meeting its number one goal, fixing the streets of Lindsay.

Through a series of staff meetings, study sessions, and planning activities it was determined that the only way to solve Lindsay's problem was to take matters into our own hands. A master plan was developed to repair—in one fashion or another—every street in town. This would include the cost to reconstruct, overlay, chip seal or similarly repair or maintain all city streets within the next ten years. It was estimated that the city would need to raise approximately \$12,000,000, in addition to existing gas tax revenues, to accomplish this goal.

To meet the costs associated with the needed street repairs and maintenance, it was determined that certain fees and taxes would need to be increased. It was proposed to raise sewer, water, and refuse fees by 5.9 percent each year for a total of four years. The increase in fees will be restricted for street maintenance activities only. On April 13, 2004, a public hearing was held and the city council approved the resolution to raise the fees needed for street maintenance. During the public hearing, only three individuals expressed opposition to the proposed fee increases.

In addition to the fee increases, city staff undertook the process of evaluating its manpower needs, and through an amended budget the local government reduced its full time staff by approximately 30 percent. The cost savings of salaries and benefits for these positions would go to assist funding the street maintenance program. Every city department was affected by this decision, including Public Safety. While this was a very difficult decision to make, the city council felt the significance of the needed street improvements warranted this action.

Looking to the Future

Over the past decade, the City of Lindsay began a slow and arduous process of making major changes to our infrastructure system that will impact our children's future. While initially limited by the lack of funding, we were ultimately able to progress from underground water and sewer projects to curb, gutter, and sidewalks projects. With the foundation in place, the next logical step was to complete the rehabilitation of the streets. While we will not be able to work on every street this year, a plan has been developed to address all of Lindsay's street repair needs within ten years and then continue proper maintenance after that.

Tom McCurdy is the director of public works for the City of Lindsay, California.



A RURAL HIGHWAY IS A PLACE

by Joanne McEntire and Ross Lockridge

A recent study on American rural collector roads demonstrates that widening lanes from 11 to 12 feet increases fatalities and injuries.

Rural communities are often glad to see a major road improved in their town, but they can also face difficulties when improvements do not take into account the context of the local community. Local residents and engineers will have different ideas about what is appropriate for a town's main street or a region's scenic byway. In New Mexico, several communities have struggled with road improvement projects when those same roads serve as their main commercial corridor, or as a connector between farms, ranches, schools, and tourist attractions.

From Santa Fe to Albuquerque

For ten years, citizens have resisted overbuilding and maintenance-driven reconstruction proposals for a portion of the Turquoise Trail National Scenic Byway, also known as NM 14. The byway is mostly a two-lane blacktop road that runs for 54 miles between Santa Fe, the capital of New Mexico, and Interstate Highway 40, east of Albuquerque. The small, historic communities of Los Cerrillos, Madrid, and Golden are like pearls on the string of the Turquoise Trail, separated by arroyos and mountains. New exurban subdivisions with large lots have appeared along the road.

In the 1980s, the New Mexico Department of Transportation (NMDOT) reconstructed and widened a northern portion of the Turquoise Trail with minimal citizen input. The ten miles of improved road have proven to be more dangerous than the remaining original road, as illustrated by the appearance of 14 descansos, or road memorials with crosses.

The second phase of reconstruction is now underway, and it passes through Los Cerrillos to Madrid, which is a very scenic area due to the lack of development along the corridor. Views



Photo courtesy of Joanne McEntire

Highway 14, the Turquoise Trail, follows the topography of a stream and the foothills. Barrels along the sides warn drivers that construction activity is underway.

stretch out to the west for miles, touching pueblos, mesas, and the tops of the mountains. The Turquoise Trail Citizens Advisory Committee has pressed the New Mexico Department of Transportation to take *context*—the communities, the glorious beauty, and the calming effects of the immediate vegetated landscape—into consideration. After ten years of struggle, the residents have reason to feel hopeful that the context has indeed influenced the road's reconstruction, which is now underway.

One of the most contentious design factors has been the width of the road and driving lanes. Road reconstruction and design are often inspired by the need for a safer road, and engineers usually respond by widening the travel lanes. NMDOT had proposed widening the NM14 lanes from the existing ten feet to twelve feet. However, safety is not assured by making driving lanes wider. A recent study on American rural collector roads demonstrates that widening lanes from 11 to 12 feet increases fatalities and injuries. Engineering researcher Robert B. Noland points out that a 12-foot lane creates a comfort factor for drivers, inviting them to increase their speed and display more risk-taking behavior on the road.

Context Sensitive Design

NMDOT determined in May 2004 that the entire Turquoise Trail project would have 11-foot driving lanes instead of stretches of 12-foot paved lanes. The decision is a welcome indicator that New Mexico may be moving towards a context sensitive design policy for rural and scenic roads. Context sensitive design (CSD) is “an approach that places preservation of historic, scenic, natural environment, and other community values on an equal basis with mobility, safety and economics,” according to Federal Highway Administrator Mary Peters. The designers and construction workers attend to the *places* that the highway goes through by putting greater emphasis on the needs and values of the community during all phases of the project.

Sensitivity toward *place*—and the people within a place—became acceptable following the adoption of the Intermodal Surface Transportation Equity Act (ISTEA) and the National Highway System Designation Act, along with US Code, Title 23, 109 Standards. The federal government recognized that the surrounding environment and community aspects could be taken into account in new construction and reconstruction, resurfacing, restoration, or rehabilitation of highways. In addition, it acknowledged that access to other modes of transportation could be considered.

CSD also means that communication with the public should be open, early, and continuous. The advantage of paying attention to communication is that project managers and their team can identify and solve conflicts early in the process, which saves time and money. Ultimately, road-building agencies attain vastly improved projects by enhancing the public participation process.

A highway project may involve local governments as well as the department of transportation’s local district. Wherever a project is located, flexibility in its design can be utilized, and

Courtesy of Patrick Allen Mohn, photographer, Copyright 2001.



The Galisteo River Valley seen from the edge of the Ortiz Mesas. The village of Cerrillos is located in the upper right.

local communities and stakeholders should have opportunities to participate. 1000 Friends of New Mexico and the Surface Transportation Policy Project have supported local residents in their work on highway reconstruction projects around New Mexico. Instead of fostering an environment where isolated resident groups try to collaborate with engineers on a project-by-project basis (some for many years), the organizations also support changes within NMDOT that make all projects more open and efficient.

Legislation and an executive order could create additional momentum for NMDOT to make internal changes that lead toward greater access for stakeholders and project efficiency. Michigan’s DOT is responding to a recent executive order from Governor Jennifer Granholm, and was planning “stakeholder outreach” this spring. Minnesota’s and Connecticut’s DOTs are also well on their way toward developing connections with communities through context-sensitive design.

Rural communities have huge investments in state highway systems, as place connectors and as conduits for economic activities. People walk on their main streets; tourists stop and shop along the roads; children walk and ride to schools. The road that runs through your town is also a place, and it should enhance and protect the special sites and daily activities that surround it. 🏡

Joanne McEntire is a policy analyst at 1000 Friends of New Mexico, based in Albuquerque, New Mexico. Ross Lockridge is a member of the Turquoise Trail Citizens Advisory Committee in New Mexico.

KARTS: A LIFELINE TO SOCIETY

by Diane Cox

Rural transportation does not have the luxury to focus on serving just one population. It needs to be all things to all people.



Courtesy of KARTS.

Dialysis patient boarding KARTS van.

The importance and benefits of public transportation have always been obvious in urban regions. However, the demand for transportation continues to grow in small municipalities and in the rural communities throughout America. Mobility is a necessity for quality of life. Employees, students, people with disabilities, and single parents caring for children use public transit to commute to work, go shopping, attend school, go to medical appointments, and travel to recreational activities. To them, public transportation is literally their lifeline to society.

One Rider's Story

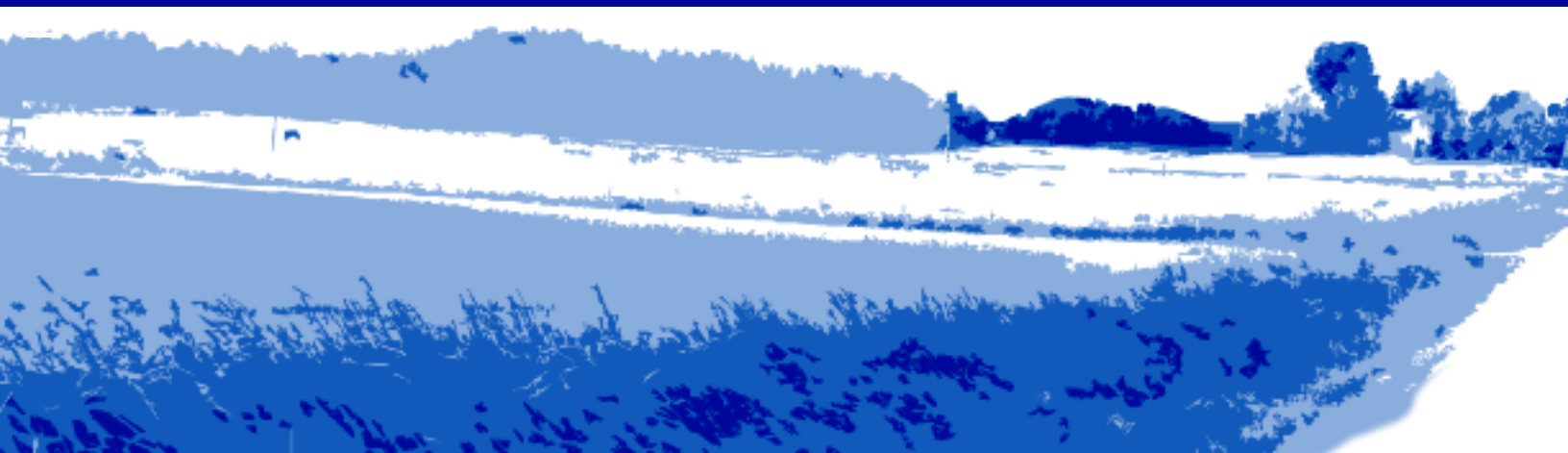
Susan didn't know much about the Kerr Area Rural Transit System (KARTS) until her mother needed it. Dorothy Jones had been an independent person her whole life until she was diagnosed with Alzheimer's in 2001. Being the only child, Susan moved her to Oxford, North Carolina, her hometown, to take care of her. Little did Susan realize the tremendous support and care her mother would require.

Ms. Jones's physician recommended that Susan enroll her mother in the local adult daycare program to keep her active and alert. The program would also allow Susan, a full-time teacher who had taken a leave of absence to care for her mother, the opportunity to go back to work. Susan told her mother's doctor, "This sounds like a great idea, but I can't take her and pick her up each day and finding someone who I can depend on would be almost impossible." The physician put her in contact with the director of the daycare program, who told Susan about KARTS.

"KARTS is heaven-sent!" proclaims Susan. "I couldn't have asked for anything more dependable and trustworthy to handle the transportation needs of my mother. The drivers are professional and friendly and the vehicles are very clean. I can depend on them to pick up my mother each morning before I leave for school and drop her off after I have gotten back home from work."

Susan points out just how impressed she has been with the drivers and office staff at KARTS. About four months ago her car broke down on the way home from work and she knew that she would not arrive home in time for her mother to be dropped off from the adult daycare program. Using her cell phone she called the daycare staff to let them know she would pick up her mother and to ask them not to put her mother on the KARTS van. Much to her surprise, the van had left with her mother already.

Without panicking, Susan called the KARTS office and informed the dispatcher of her predicament. According to



Susan, “the dispatcher eased my fears by radioing the driver and informing them to not leave my mother alone at home. When I arrived home about 70 minutes later, the driver and my mother were sitting on the front porch just chatting. I thanked the driver many times over and offered to pay her a tip. She simply replied to me, ‘I only did what I would want someone to do if it were my mother. You do not have to pay me for doing the right thing.’”

Susan finishes by saying, “The service KARTS provides is so important to me and my mother. The drivers have become like family and you just can’t put a price tag on the human touch that KARTS provides.”

Kerr Area Rural Transit System (KARTS)

Founded in 1983, Kerr Area Rural Transit System, operated by Kerr Area Transportation Authority, is one of the first regional rural transportation systems in North Carolina. KARTS is committed to providing quality, affordable transportation to the residents of Franklin, Granville, Vance, and Warren counties.

KARTS’ service area encompasses 22 communities and over 1,737 square miles in the beautiful north central region of the state. According to 2000 Census figures, the population is 158,684 and continues to rise.

KARTS maintains a fleet of 41 vehicles, which includes standard vans, wheelchair lift-equipped vehicles, and buses to meet the transportation needs of the general public, social service agency clients, the elderly, and people with disabilities. Last year, KARTS drivers provided over 150,000 trips and drove over 1.4 million miles.

Without KARTS services in this rural region, senior citizens, people with mental and physical disabilities, and low-income individuals would not be able to attend to the normal, daily activities that most of us take for granted. Activities include medical appointments, shopping, employment, educational classes, and social activities. During a recent customer service survey, one elderly passenger wrote, “If it weren’t for KARTS, I’d never leave my house.”

Impacts and Value of Rural Transportation

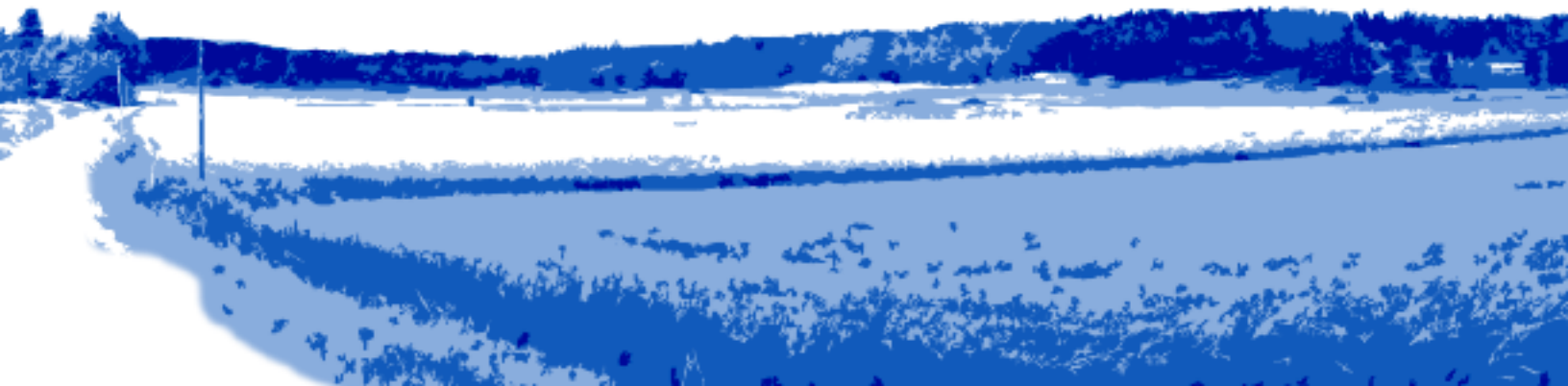
Rural transportation does not have the luxury to focus on serving just one population. It needs to be all things to all people. KARTS is here to serve anyone in our region. Our service is absolutely essential to the communities we serve—there are no other affordable public transportation options. The geographic area served by KARTS is large, and the passengers whose transportation needs are the greatest inevitably live in the most remote areas. Staff have been confronted with the challenge of addressing increasing needs while at the same time controlling costs and maintaining the primary focus—the individual customer and his or her needs.

Rural public transportation serves both an economic and a social service function. In rural communities, the economic benefits are easily recognizable. In addition to transporting customers and employees conveniently to local businesses, transit also attracts businesses and industries seeking to locate in an area because it provides access to a broader labor pool. Additionally, in the region served by KARTS, anywhere from one-third to more than 90 percent of the welfare reform recipients depend upon us for transportation.

Public transit equals cleaner air. While air quality has not been a major issue in rural North Carolina in the past, the region served by KARTS borders on the Research Triangle Area, a major metropolitan area. Recently, a portion of the counties we serve were designated a non-attainment area for air quality. Motor vehicles are a prime contributor to air pollution. One of the best ways to improve air quality is to get people out of their cars and into public transportation.

In addition to the economic benefits of employment access and reduction of air pollution, public transit eases traffic congestion and is over 80 times safer than riding in an automobile.

While the economic benefits can be measured quantitatively, sometimes the social benefits of rural public transit often cannot. How do you measure the importance of a missed chemotherapy appointment to a cancer patient? Or a missed



nutritious lunch to a shut-in senior citizen? Rural transit operators measure the social benefits one by one, and respond to each situation as though we are caring for a member of our own family. Without the services of KARTS and other rural operators across the country, people would not be able to maintain their quality of life. The personal impact on our riders is tremendous.

Technology in Rural Transit

In the past decade, rural transportation operators have slowly embraced new technology. The use of index cards for passenger trip information has been replaced by computerized databases and scheduling software. Advancements such as Automatic Vehicle Locators (AVL), Mobile Data Terminals (MDT), and Geographic Information Systems (GIS) have the capability of building more efficient and more effective rural transit systems.

KARTS began utilizing a GIS Scheduling and Dispatching program in August 2002. Utilizing a street network system, KARTS produces accurate vehicle schedules and routes by taking into account vital information, such as speed limits, one-way streets, traffic congestion, and travel times. The software has allowed KARTS to increase daily transportation capacity and has produced more accurate operating statistics.



Courtesy of KARTS.

Senior rider boarding KARTS van.

New technologies are critical to the future of rural transportation, as many agencies struggle to cope with increasing demand and cuts in primary funding sources. Many of the technological advances available will help with better planning and more efficient methods for service delivery.

Future of Public Transit

The landmark Transportation Equity Act for the 21st Century was approved for a six-year period beginning in 1998 and ending in 2003. TEA-21 authorized the federal surface transportation programs for highways, highway safety, and transit. Goals of the legislation included improving safety, protecting public health and the environment, and creating opportunity for all Americans. It provided record levels of investment to continue rebuilding America's highways and transit systems.

Currently TEA 21 has been extended until June 30, 2004. The reauthorization of TEA 21 would support our efforts to maintain and improve public transit services to the communities and individuals we serve. It would ensure that rural residents would not be required to leave their communities because of the limited availability of public transportation.

In rural areas, we must look at the big picture when focusing on transit needs. In seeking additional and/or new funding streams, rural operators must convey our impact on mobility, the local economy, and our riders' self-sufficiency to elected officials at the local, state, and federal levels. In the meantime, those of us working on the front line each day will continue to provide the necessary transportation services to residents of our communities and to maintain the quality and accessibility of that service. 🌱

Diane Cox is executive director of the Kerr Area Rural Transit System.

REACHING RURAL AMERICA THROUGH WIRELESS BROADBAND

by Milana M. Barr

Broadband service has the potential to spur economic development in rural areas.

Photo courtesy of Maverick Wireless in Washington state.



Broadband transmission equipment as seen on a telephone pole.

Rural areas are often the last to receive basic services, and Internet connectivity is no exception. Providing the “last mile” of service to rural areas is often very expensive, and that added cost has prevented many areas from receiving various types of telecommunications services since the industry began. The “last mile” is the term used to describe the connection required to provide unconnected consumers with the services that those on the network already enjoy.

While Internet usage has increased significantly over the past decade, household Internet access seems to be divided along socioeconomic lines; usage varies according to income, geographic location, race and ethnicity, education levels, age, and even gender. Households with higher income levels, higher education levels, and women are more likely to have Internet access. Rural areas, low-income communities, communities of color, and older residents are less likely to have Internet access at home.

The Internet usage gap between rural and urban areas has recently decreased significantly; however, certain inequities still exist. Rural areas do not have the same quality of connections and availability of home access as urban areas. Broadband and cable Internet services are not available to most of rural America, particularly in residential areas. Companies provide these services to areas where they expect the highest rate of return on their investment, and this leaves most of rural America without these services. Also, many rural households cannot afford these services, even if they are available.

Rural Broadband: The Wave of the Future

Broadband has been promoted as an answer to connection and availability problems in rural areas. Broadband is a general term used to describe different types of high-speed, high bandwidth connections to the Internet, including DSL and cable. Bandwidth refers to the amount of data that can be transmitted. Higher bandwidths transmit more data and therefore provide faster connections to the Internet.

Broadband service has the potential to spur economic development in rural areas. Internet connectivity enables rural businesses to market their services to other areas, and broadband enables them to transfer larger files and download information more quickly. In addition to faster speeds,

broadband service provides always-on connections, allowing businesses to communicate with customers in real time, greatly reducing response time to orders and inquiries and reducing long-distance phone bills. Businesses could also save money on courier costs, travel, and employee hours spent online. When combined with greater market access, these cost savings could enable business expansion.

These features also make distance learning more feasible, enabling students to take courses online and communicate with educators in real time. This new technology may eventually be seen as a necessity, much like electricity or telephone service. Rural and underserved areas run the risk of becoming increasingly more isolated from economic and educational opportunities without access to these resources.

Wireless and satellite technology have been able to overcome some of the cost disadvantages of providing the “last mile” of service to rural areas, but each has its drawbacks. Terrain can be a significant obstacle in providing wireless service to rural areas. Providing service to extremely rural areas with very low population densities requires additional towers or taller, more powerful towers to be built.

Therefore, wireless broadband is not a cost-effective solution in all areas. Some regions, such as Central Appalachia, may not be able to use the technology because of difficult terrain. Problems with satellite service include slower speeds—compared to other types of broadband service—and the need for an unobstructed view of the southern sky (any obstacle to this view will interrupt service).


Extending Broadband Service

Despite the challenges, wireless and satellite broadband services are still a viable option for many rural communities, and government programs can help cover some of the infrastructure costs required to provide these services. In 2003, the U.S. Department of Agriculture Rural Utilities Service (RUS) awarded over \$32 million in broadband grants through its Community Connect Grant Program to 74 organizations in 23 states and the U.S. Virgin Islands. The RUS also created a partnership with the Federal Communications Commission Wireless Telecommunications Bureau and formed the Federal Rural Wireless

Photo courtesy of Meierick Wireless in Washington state.



Broadband transmission equipment atop a telephone pole.

Outreach Initiative, whose purpose is to encourage greater development of wireless services, including wireless broadband, and enhance economic development in rural America. Recently, in May and June 2004, the USDA announced the approval of 25 rural broadband and telecommunications loans, totaling \$237 million, that will be used to expand broadband access to rural communities throughout the U.S. 

Milana M. Barr is a research associate at the Housing Assistance Council.





AN OVERVIEW OF THE USDA

RURAL DEVELOPMENT RURAL UTILITIES SERVICE

Modern utilities came to rural America through some of the most successful government initiatives in American history, carried out through the United States Department of Agriculture (USDA) working with rural cooperatives, nonprofit associations, public bodies, and for-profit utilities. Today, USDA Rural Utilities Service (RUS) carries on this tradition by helping rural utilities expand and keep their technology up to date, helping establish new and vital services such as distance learning and telemedicine. The public-private partnerships forged between RUS and local utility providers and government agencies result in billions of dollars in rural infrastructure development and create thousands of jobs for the American economy.

Rural Electric Program

Providing reliable, affordable electricity is essential to the economic well-being and quality of life for all of the nation's rural residents. The Electric Program of RUS provides leadership and capital to upgrade, expand, maintain, and replace America's vast rural electric infrastructure. Under the authority of the Rural Electrification Act of 1936, RUS makes direct loans and loan guarantees to electric utilities to serve customers in rural areas. Through RUS, the federal government is the majority noteholder for more than 700 electric systems.

FOR MORE INFORMATION CONTACT:

Electric Program
Stop 1560
1400 Independence Avenue, SW
Washington DC 20250-1560
PHONE: (202) 720-9545 / FAX: (202) 690-0717
<http://www.usda.gov/rus/electric/index.htm>

RUS Water and Environmental Programs

Water and Environmental Programs (WEP) provides loans, grants and loan guarantees for drinking water, sanitary sewer, solid waste, and storm drainage facilities in rural areas and cities and towns of 10,000 or less. Public bodies, nonprofit organizations, and recognized Indian tribes may qualify for assistance. WEP also makes grants to nonprofit organizations to provide technical assistance and training to assist rural communities with their water, wastewater, and solid waste problems.

FOR MORE INFORMATION CONTACT:

USDA, Rural Utilities Service
Mail Stop 1548, Room 5145-S
1400 Independence Ave, SW
Washington, DC 20250
PHONE: (202) 690-2670 / Fax: (202) 720-0718
<http://www.usda.gov/rus/water/index.htm>

Telecommunications Program

RUS provides many programs for financing rural America's telecommunications infrastructure. The "traditional" infrastructure loan program, consisting of hardship, cost of money, Rural Telephone Bank, and guaranteed loans, provides financing of broadband and other advanced services. Since 1995, every telephone line constructed with RUS financing has been capable of providing broadband service using digital subscriber loop (DSL) technology. The Distance Learning and Telemedicine program continues its charge to wire our schools and improve health care delivery in rural America.

RUS has been given the challenge to administer several new and developing programs for improving the quality of life in rural America. The Broadband Program, a loan program designed specifically to increase the rate of deployment of technology to small towns in rural areas, has enabled RUS to step beyond its traditional definition of **CONTINUED ON NEXT PAGE**

Each issue of *Rural Voices* profiles members of the Housing Assistance Council's board of directors. A diverse and skilled group of people, HAC's board members provide invaluable guidance to the organization. We would like our readers to know them better.



JOHN E. FOSTER, P.E.

John Foster, a registered professional engineer, is celebrating 25 years as a member of the Housing Assistance Council's board of directors. He was elected to the board in 1979 and attended his first board meeting in November 1980. Foster's unique background has brought much to HAC.

Previously the Ohio State Engineer for Farmers Home Administration and Chief Engineer for the National Demonstration Water Project, a program funded by the Office of Community Services, Foster was invited to join HAC's board. His first assignment was to assist the Loan Committee with its new Water/Wastewater Revolving Loan Fund Program, as well as to provide some training to the HAC staff on municipal services, water and wastewater, specifically.

Foster's connection with HAC has allowed him to continue to be involved in rural development. His experience with Farmers Home Administration on water, wastewater, and housing issues gave him the knowledge needed to voice his concerns regarding HAC's activities.

Foster says that a lot of organizations "pay lip service to given causes. HAC, both board and staff, actually talk the talk and walk the walk. HAC does a great job of advocacy, capacity building, and providing technical assistance. They are out there doing what needs to be done. They help the poorest of poor in the most rural parts of the country."

Foster lives in Columbus, Ohio. He is retired from his own consulting engineering firm, John E. Foster and Associates, Inc., but continues to do consulting work as a civil engineer.



PEDRO RODRIGUEZ

Pedro Rodriguez has been a board member for over 20 years. He was nominated to the board of directors in November 1983 and he attended his first board meeting in May 1984.

Rodriguez first became acquainted with HAC's executive director, Moises Loza, while working on farmworker housing issues with La Raza Unida. It was not difficult to persuade Rodriguez that HAC needed his experience on the board. His first assignment with HAC was to work on the Loan Committee.

Rodriguez says that HAC is an incredible organization with which to be associated. "There's no end to what HAC can do. HAC is a tremendously well-focused organization. They have the three ingredients – the board, the staff, and the organization as a whole – who all have the dedication to make it work!" Rodriguez says he is extremely proud to be a member of the board. "The board is made up of dedicated individuals who know how to cut through the red tape, and get down to the nitty-gritty. The board," he expresses, "is committed to the rural housing issues."

Rodriguez is currently a manager for the Job Service of Wisconsin and runs three offices in Milwaukee's south side. He and his wife, Virginia, reside in Waukesha, Wisc., a city west of Milwaukee. 🇺🇸

FROM PAGE 20 rural (towns of 5,000 or less), and fund borrowers serving communities of up to 20,000 inhabitants. Another program, the Weather Radio Grant Program, provides funding for weather radio transmitters in rural areas. This has provided early warning systems in rural areas that are saving lives.

FOR MORE INFORMATION CONTACT:

USDA - RUS
STOP 1590
1400 Independence Ave., SW, Rm 4056
Washington, DC 20250-1590

PHONE: (202) 720-9554

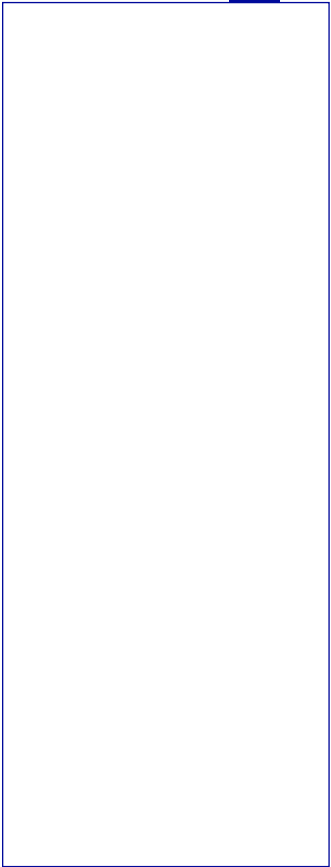
<http://www.usda.gov/rus/telecom/index.htm> 🇺🇸



HOUSING ASSISTANCE COUNCIL
 1025 VERMONT AVENUE, NW
 SUITE 606
 WASHINGTON, DC 20005



DELIVER TO



Support Rural Voices

Subscriptions Are Free.

Only one free subscription per organization, please.

Contributions for additional subscriptions, or to help cover production costs, are still welcome. The suggested donation is \$12 for one year, but any amount will help.

Make your check or money order payable to:

Housing Assistance Council
 1025 Vermont Avenue, NW
 Suite 606
 Washington, DC 20005

Or call 202-842-8600 to order using a credit card.



Rural Voices SUBSCRIPTION FORM

NAME _____

ORGANIZATION _____

ADDRESS _____

CITY _____

STATE _____ ZIP _____

PHONE _____

- Check or money order enclosed.
- Please bill my credit card:
- Visa MasterCard American Express

CREDIT CARD NUMBER _____

EXPIRATION DATE _____

AUTHORIZED SIGNATURE _____

**Single copies and back issues are also available
 for \$4 each.**