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Foundations short-change rural areas:

Examining foundation rural giving

By Kirke Wilson, RCAC board member

As the economy slowly crawls toward a recovery, nonprofit organizations that serve rural areas persist in their continual search for available, appropriate funding and naturally turn to foundations for help. Here, Kirke Wilson, Rural Community Assistance Corporation board of directors member and former Rosenberg Foundation president, gives an overview of the history of foundation giving to rural areas, factors that impede such foundation giving, groups of foundation members that have made rural giving a priority and other significant aspects of the issue. He then suggests next steps. Wilson's article, "It's not who you know — but who knows you: An introduction to foundation grants" in the January 2010 issue of this publication, was well received. This new article advances the discussion.

Organizations that serve small towns and rural areas are accustomed to receiving foundation letters with a "no" reply in response to their funding requests. The letters vary, but the underlying message is the same. Whatever the rural organization is proposing is not something the foundation wants to support. The explanation may be based on the foundation's priorities or limited resources, but the result is the same — rural areas are left out.

Along with government grants, private contributions and earned income, foundation grants provide vital support for a wide range of institutions and organizations, including universities, hospitals, museums and social service agencies. In 2008, foundations distributed nearly $47 billion in grants for charitable programs and services. While the total amount of foundation giving has decreased somewhat due to the downturn in the economy, the total amount of giving remains significant.[1]

Despite the growth of urban and suburban areas, rural America remains a significant part of the nation and was home to 50 million people in 2008. Using the Census definition that rural is whatever is left over after metropolitan areas are defined, 16.5 percent of the nation's population lived in the 2,051 counties the Census Bureau designated as nonmetropolitan. The rural population is growing in size (it was 45 million in 1990) but declining as a proportion of the national population (from 20 percent in 1980 and 18 percent in 1990). Rural poverty rates and particularly the rates of poverty among rural children consistently exceed those in metropolitan areas.[2]

1 The Foundation Center estimates that total foundation giving declined 8.4 percent in 2009 to $42.9 billion.

2 U.S. Department of Agriculture, Economic Research Service, United States Fact Sheet, Population, Income, Education and Employment, 2009.

There is little dispute about foundations' relative neglect of rural America. One indication of foundation involvement in rural America is the number of foundations that include rural issues among their stated program interests. The most recent edition of the Foundation Directory describes the 10,000 largest foundations in the United States, accounting for 86 percent of all foundation assets and 89 percent of all foundation giving. Of the 10,000 foundations listed, only 36 identify "rural development" as a program interest.[3] Other foundations, defining their interests by program area (such as child care, education, health services and job training), also may make grants in rural areas.

In recent years, foundation leaders and critics have repeatedly confirmed the pattern of rural neglect.

In recent years, foundation leaders and critics have repeatedly confirmed the pattern of rural neglect. The National Committee for Responsive Philanthropy (NCRP), a monitoring and advocacy organization, found that 184 of the 65,000 active foundations in the United States reported grants for "rural development" in 2001 and 2002 and that only 304 used the word "rural" in grant descriptions. NCRP also documented the existence of a "rural divide" in which predominantly rural states have the fewest foundations and receive the lowest grant dollars per capita. NCRP also found that rural grant-making is extremely concentrated with two large foundations (W. K. Kellogg and Ford) accounting for 42 percent of all rural development granting and just 20 foundations accounting for 79 percent[4]. In a report prepared for Atlantic Philanthropies, the Bridgespan Group summarized the funding situation for organizations serving rural America:

> The scarcity of funding for rural nonprofits means that these organizations — with fewer resources to begin with — must work harder to obtain the money they need to serve rural communities.[5]

It wasn't always like this

A hundred years ago, major foundations in the United States found rural areas and small towns to be fertile ground for creative grant-making. Leading foundations of that era supported multi-year grant programs addressing fundamental issues of health, education and economic development in small towns and rural areas. Much of this philanthropic activity was focused on the rural South and was motivated by the unfinished work of reconstruction after the Civil War, but some was part of a deliberate strategy to include rural areas in broader programs of social improvement.

The best national example of small town grant-making was the library program administered by Andrew Carnegie and one of the many foundations he created. Between 1886 and 1919, Carnegie and his foundation contributed to construction of 1,689 public libraries in the United States, including 1,015 located in towns with populations of 7,500 or less. Smaller communities, because they presumably would need smaller libraries, received smaller grants, but the program requirements did not exclude rural areas or place them at a competitive disadvantage.[6]

The General Education Board, one of the philanthropies formed by Standard Oil tycoon John D. Rockefeller, supported programs strengthening education and economic development in rural areas of the South. Between 1906 and 1914, the General Education Board allocated nearly $1 million for demonstration projects and technical assistance to improve agricultural production in 10 southern states. Grants supported "demonstration agents" which were the model for the agricultural extension agents created by federal law in 1914. As part of the effort to create greater economic self-sufficiency in the rural South, the General Education Board grants supported "corn clubs" for boys (later expanded to pigs,

3 David Jacobs, ed., *The Foundation Directory*, 31st edition (New York, Foundation Center, 2009), p. 2751. In addition to the 36 foundations interested in rural development, 39 express interest in agriculture, 26 in agriculture and food and 85 in Native Americans.

4 Rick Cohen with John Barkhamer, *Beyond City Limits: The Philanthropic Needs of Rural America* (Washington, D.C., National Committee for Responsive Philanthropy, 2004), pp. 5-10.

5 Barry Newstead and Pat Wu, "Nonprofits in Rural America: Overcoming the Resource Gap", Bridgespan Group, July 2009.

6 Theodore Jones, *Carnegie Libraries Across America* (New York, John Wiley & Sons, 1997), pp. 103, 127-128.

poultry and cattle) and canning and poultry clubs for girls. By 1913, these youth programs were operating in rural areas of 15 southern states. The programs demonstrated their effectiveness and became the model for 4-H throughout the nation. At the same time, the General Education Board also paid the salaries of rural school consultants in 12 states.[7]

As a country, we are no longer one generation removed from the farm or small town.

Between 1917 and 1932, the Rosenwald Fund, established by Julius Rosenwald of Sears Roebuck, awarded 5,300 grants to build public schools for African American students in rural areas of 13 southern states. The Rosenwald Fund also made grants to train teachers for rural schools and for conferences, and to conduct research on Black poverty and farm tenancy.[8] The Commonwealth Fund, created by the Harkness family of Standard Oil, initiated a national child health demonstration program in 1922. The program included pediatric clinics, guidance for parents, nutritional advice as well as health education through the schools and local press. The fund selected four, county-wide demonstration sites for the program including two projects in small cities (Athens, Georgia and Fargo, North Dakota) and two in rural areas (Rutherford County, Tennessee and Marion County, Oregon).[9]

The four examples of foundation grant-making in rural and small town America nearly a century ago are, like much of private philanthropy, idiosyncratic. The common elements among the grants were the awareness that a substantial part of the national population was living in small towns and rural areas and that there were opportunities for productive grant-making in such areas. Although the rural grants were relatively early in the history of private foundations, they illustrate two central themes in foundation grant-making that survive to this day. The first is the principle that the foundation grant is not merely ameliorative, but is intended to achieve lasting improvement in the conditions it is addressing. The second is that private funds should be used to test new ideas with the assumption that government or local donors will take over the financial and organizational responsibility to sustain the innovation (agricultural extension agents; public libraries; rural schools; health clinics) if it is successful.

Shifting perceptions of rural

It is easy to be nostalgic about an imaginary Golden Age of rural philanthropy. At the same time, it is important to remember that foundations, including particularly the largest and most respected of their time, were able to overcome obstacles of distance, poor transportation and unfamiliarity to identify promising projects in rural areas. What has changed is that rural America is no longer the norm. As a country, we are no longer one generation removed from the farm or small town. The gravitational pull of the city drained rural areas of population and changed the national perception. There is no longer a single perception of rural and, as a consequence, no common view about what sort of grants foundations should make in rural areas.

In earlier days, there was a broad awareness that conditions in rural areas lagged behind those in urban areas and that private philanthropic investment was both necessary and effective. Rural areas were seen as essential to the nation as a source of food, raw materials and industrial labor. By the 1930s, they were, as the photographers of the Farm Security Administration powerfully documented, working people struggling against enormous obstacles, abandoning farms and uprooting their families. Thirty years later, rural areas were among the places (and people) left behind, what Michael Harrington memorably called "The Other America."[10] The unifying

7 Raymond B. Fosdick, *Adventure in Giving* (New York, Harper & Row, 1962), pp. 43-55, 67.

8 Waldemar A. Nielsen, *The Golden Donors* (New York, E. P. Dutton, 1985), pp. 337-340. The Rosenwald Fund was also an early supporter of the Highlander Center in Tennessee and its grassroots leadership and organizing programs.

9 Elizabeth Toon, "Selling the Public on Public Health: The Commonwealth and Milbank Health Demonstrations and the Meaning of Community Health Education", in Ellen Condliffe Lagemann, Philanthropic Foundations, *New Scholarship, New Possibilities* (Bloomington, Indiana University Press, 1999), pp. 120-121.

10 Harrington's book, *The Other America* was published in 1962, coinciding with the planning of the Economic Opportunity Act of 1964, the so-called War on Poverty.

narrative was that poverty existed in urban and rural places and could be reduced through a combination of job training, economic development, and community action programs. Much of the education, social service and development infrastructure currently serving rural America (Community Development Corporations; Community Health Centers; Head Start; Housing Development Corporations; Legal Services) has its origins in these programs of the 1960s.

For foundations, rural problems appear too large to address effectively or too local to be worthy of attention.

In the years since the War on Poverty, rural America has shrunk as a proportion of the national population and evolved in the national perception. Once considered a place of small farms, vibrant towns and common sense values, the contemporary image of rural America defies easy categorization. There are rural areas of population growth and others of population loss. In some rural areas, the population is aging, while in others, it is becoming younger. There are rural areas of prosperity and areas of persistent poverty. In some rural areas, population diversity is increasing while in others, communities are becoming less diverse. Apart from low population density, there is no encompassing vision of all rural places. Conceptually, rural is simply that which is not yet urban.

Over the last half-century, the public has learned, sometimes painfully, what urban means and what types of interventions and investments are necessary to address "urban problems." These lessons have been imprinted in the national consciousness through the images of the Civil Rights Movement, urban riots and Great Society programs. There is no recent counterpart for rural areas. Rural America is largely invisible to the media. The rural images that survive are more likely to reflect Ken Burns' tribute to wilderness than the desperate poverty of tribal lands, the depopulation of the Great Plains or the conflicting needs of year-round residents and newcomers in recreation and retirement areas. Without some unifying vision of rural places, it becomes difficult to convey their needs and what can be done. Rather than resulting in programming specific to local needs, the multiplicity of rural places seems to contribute to a policy and program paralysis in which funders are reluctant to invest in rural places because they are not confident about how to proceed. For foundations, rural problems appear too large to address effectively or too local to be worthy of attention.

Obstacles to foundation granting in rural America

Organizations serving rural areas are disadvantaged in the competition for foundation grants in numerous ways. Some of the disadvantages are simply the product of geography and some are based in foundation assumptions about rural organizations. The most obvious disadvantages are geographical. Most rural organizations are remote from the major cities where most foundations, even those whose wealth was rural in origin (mining, timber, railroads, agriculture), are located and hire their staff. The geographical disadvantages increase the cost of foundation fundraising, but also reduce the opportunity to develop relationships with foundations apart from grant-seeking encounters.

One observer summarized the geographical disadvantage — rural organizations, "because of isolation from major urban centers, are traditionally excluded from the philanthropic conversation."[11] The philanthropic conversations take place in the informal networks, which bring ideas, organizations and emerging leaders to the foundation's attention. These networks, composed of past grantees, consultants and others who are knowledgeable about the field in which the foundation operates, can legitimize new ideas or cast doubt on unknown organizations and leaders. Such networks mitigate the isolation of many foundations, but they also reinforce the obstacles encountered by rural organizations outside the networks and not known to the foundation.

Perceptions of government dependence

Foundations have a dual nature. They are public in purpose and private in operations. They operate within a legal framework determined by

11 Rachael Swierzewski, *Rural Philanthropy: Building Dialogue from Within* (Washington, D.C., National Committee for Responsive Philanthropy, revised edition, 2007), p. 1.

government, but they are private in their origin, governance and decision-making. The private dimensions of foundations and the vastly greater resources available to government result in an uneasy relationship between foundations and government in which foundations strive to maintain their independence. Foundation independence of government can take many forms, but it is at base, an issue of who is setting the priorities for foundations. Foundations aspire to be what one prominent foundation officer characterized as "society's passing gear."[12] In this role, foundations set their own agenda and do not duplicate government. They may operate outside government (monitoring government or supporting investigative journalism); or seek to influence government by testing new ideas or operating in areas where no public consensus has formed (the arts, reproductive rights and exploration of extraterrestrial life). In their time, Carnegie's libraries and the 4-H clubs of the General Education Board were examples of pre-consensus grant-making.

The very success of rural organizations in obtaining government grants makes them less attractive to those foundations seeking organizations driven by independent initiative.

The deeply-held assumptions that foundations are independent of government and that foundation funds should not duplicate government create challenges for organizations in rural America where social service and community development agencies are often the product of government programs, dependent on government grants and subject to government program restrictions. The very success of rural organizations in obtaining government grants makes them less attractive to those foundations seeking organizations driven by independent initiative. In other words, the past neglect of rural organizations by private philanthropy contributes to future neglect.

The foundation perception that rural nonprofits are "government-dependent" is not a trivial issue. It often means that the most pressing needs of rural nonprofit organizations are to replace lost government funds or to compensate for the inadequacy or inflexibility of government grants. In either case, the foundation is being asked to supplement government rather than change government through new ideas and approaches. Government dependence also can stifle creativity in nonprofit organizations by shifting attention to grant and contract compliance and away from innovation. In extreme cases, government grants restrict the activities of their grantees. For example, federal grants to legal service agencies prohibit certain activities even when those activities are carried out entirely with funds from other sources.[13]

The perceived government-dependence among rural nonprofit organizations also diminishes the potential they offer for sustaining pilot projects after they have demonstrated their effectiveness. The governance role in organizations established to attract federal funds is to establish the legitimacy of the organization through a governing board that is broadly representative of the community it serves. Such a board is intended to oversee the expenditure of federal funds and the compliance with grant requirements. The governance function in an independent nonprofit organization, in contrast, is likely to be somewhat less concerned about representation and more likely to be engaged in the private fundraising necessary to sustain the organization and its mission.

Demonstration potential of rural innovations

Most foundation grants are intended to strengthen particular programs or institutions. They provide basic support to organizations or support specific programs or activities. Such grants are often the result of long-standing relationships between the foundation and the institution or foundation interest in the program area. Since rural development is a stated program area for relatively few foundations, the grants that are potentially available to rural organizations are likely to be within program

12 Paul Ylvisaker (1921-1992) was on the staff of the Ford Foundation where he was responsible for the pilot projects that later became the federal community action and model cities programs. He later served as dean of the Graduate School of Education at Harvard and on several foundation boards.

13 The Forum of Regional Grantmakers is an organization of 33 state, regional, metropolitan and multi-state associations of foundations, corporate giving programs and other grant-makers.

areas such as health, job training or economic development. To be competitive, proposals for such grants must demonstrate competence in the program area and satisfy some measure of impact beyond the project itself. Often the wider impact is that the project proposes to test new ideas or program approaches, which if effective, can be applied more broadly.

Projects that may be innovative in a rural setting may seem conventional or irrelevant to a grant-maker in an urban area.

Rural projects are at a disadvantage in the innovation competition. Projects that may be innovative in a rural setting may seem conventional or irrelevant to a grant-maker in an urban area. Even if the proposed project is innovative, the grant-maker is likely to be concerned whether testing the idea in a rural area, however effective it may be, will have any value as a pilot project. The success of the innovation in a rural location may be discounted because of the setting and offer little credibility to decision makers in other settings. Rural organizations are often smaller than their urban counterparts. Because they are smaller, the rural organizations are likely to have staff with multiple responsibilities and less likely to have research and evaluation specialists. These factors contribute, perhaps unfairly, to the foundation assumptions about the demonstration potential of rural projects.

The philanthropic response

Over the past decade, the foundation field has responded, in an impressive variety of ways, to the problem of rural neglect. Concerned foundations have created networks of rural grant-makers, established a collaborative funding mechanism and mobilized the regional associations of foundations and the national Council on Foundations to pay more attention to rural areas. The National Committee for Responsive Philanthropy has published two reports on the neglect of rural areas and the Forum of Regional Grantmakers has issued reports on The Power of Rural Philanthropy (2005) and Rural Fund Development (2007) with examples of grassroots philanthropy in small towns and rural areas and detailed guidance about how to build endowments to serve such areas.[14]

Foundations are long accustomed to the charge that they have neglected some group, region or issue. When challenged about such allegations, some foundations point out that they are required by their donor to concentrate their grant-making on a particular geographical or program area. Others will remind their critics that they have limited resources and cannot respond to every need. Older foundation staff will recite the ineffectiveness of "scatteration" and theorists will point out that foundations, unlike government, are not under any obligation to distribute their resources equitably. Most foundations, particularly those without paid staff, will be unaware of the criticism or dismiss it as simply the inevitable consequence of unlimited needs and finite resources.

At the same time foundations are fending off external criticism or ignoring it, those foundations concerned about the particular issue organize within the field to increase awareness among their colleagues and ultimately to increase grant-making in the neglected area. During the past 40 years, foundations have organized groups within the foundation field regarding the neglect of:

- Population groups (African Americans, Native Americans, Hispanics, women and girls, immigrants and refugees)
- Program areas (aging, health, the arts, the environment, peace and security, children, youth and families, homelessness, international human rights, civic participation)
- Types of grants such as Program Related Investments and grassroots funding

Called affinity groups, these networks, composed of foundation program staff, are the

14 The Forum of Regional Grantmakers is an organization of 33 state, regional, metropolitan and multi-state associations of foundations, corporate giving programs and other grant-makers.

primary method foundations use to promote emerging and neglected issues within the field. Some of the affinity groups are informal, but at least 35 have full-time staff, provide communication among foundations with common interests (sharing information about best practices and policy developments), create opportunities for collaboration among foundations and promote their concerns within the wider foundation field.[15]

Between 2001 and 2006, the National Rural Funders Collaborative distributed more than $3 million in grants to 17 rural organizations and networks.

Affinity groups enable smaller foundations to learn from the experience of larger foundations with their specialized staff and broader scope. They also provide an opportunity for smaller and regional foundations to make national foundations aware of local issues and outstanding organizations. Apart from the enhanced communication among foundations, affinity groups sometimes form funding collaboratives, in which foundations with shared interests pool their funds to support joint projects. To increase understanding of the issue or population among other foundations, affinity groups compete to secure a place in the program of the Council on Foundations Annual Conference. The annual conference provides a platform for affinity groups to showcase prominent organizations and leaders to an audience of trustees and staff from foundations and corporate-giving programs throughout the nation.

The campaign to increase philanthropy in rural areas began in 1998 when a small group of foundations met informally at the Council on Foundations Annual Conference to discuss their concerns about the neglect of rural areas. They formed the Rural Funders Working Group and the following year they affiliated with the Neighborhood Funders Group, a large and well-established affinity group composed of foundations concerned about community development, housing, economic development and community organizing. The Working Group arranged field trips for foundations to visit rural communities and organized presentations at the Council on Foundations Annual Conference. Twelve of the foundations involved in the Working Group contributed to the creation of a pool of funds to be granted in rural areas. Between 2001 and 2006, the National Rural Funders Collaborative distributed more than $3 million in grants to 17 rural organizations and networks. In 2007, the collaborative committed an additional $1 million a year for five regional initiatives using multiple economic development and asset-building strategies in rural areas.

The Working Group and Funders Collaborative increased the exchange of information among foundations engaged in rural grant-making and successfully persuaded the regional associations of grant-makers and the national Council on Foundations to increase their attention to rural areas. The Council on Foundations has included sessions on rural philanthropy in several of its annual conferences. (The 2010 annual conference featured a panel discussing "Rural Philanthropy and Rural America.") In 2006, the Council on Foundations invited Sen. Max Baucus of Montana to address its annual conference. The council formed an advisory committee on philanthropy and rural America and, in 2007, co-sponsored a conference on "Philanthropy and Rural America" in Missoula, Montana.[16] The council also sponsored a similar conference in Arkansas in 2009. The Nebraska Community Foundation, a state-wide foundation with 200 affiliated funds in 71 counties, has sponsored two conferences showcasing its success-building charitable endowments in small towns and rural areas.

Addressing the rural funding deficit

Networks, conferences and publications have raised the visibility of rural issues within

15 In addition to the national and regional associations of foundations and organized affinity groups, researchers have identified 250 informal networks formed by groups of grant-makers. Lucy Bernholz, Kendall Guthrie, Kaitlin McGraw, *Philanthropic Connections: Mapping the Landscape of U.S. Funder Networks* (Washington, D.C., Forum of Regional Grantmakers, 2003), p. 6.

16 Senator Baucus is chairman of the Senate Finance Committee which has jurisdiction over foundations and federal tax law.

the field of philanthropy, but have had little impact on most foundations' funding decisions. The National Committee on Responsive Philanthropy, the Council on Foundations, the Forum of Regional Grantmakers and numerous individual foundations have contributed to the dialogue within the field, but have made little, short-term progress in reducing the rural funding deficit. The foundations concerned about rural America a decade ago have only modestly expanded their ranks. Most foundations remain as unreceptive to rural organizations and rural issues as they were a decade ago. While it is essential that rural advocacy continue within the field of philanthropy, the next phase of work will require the leadership of rural organizations to address, indirectly and incrementally, the obstacles to foundation support of rural organizations. This will entail deliberate and long-term commitments to building networks among rural organizations and the intermediary organizations that serve them while challenging misperceptions, stereotypes and other obstacles to rural philanthropy.

Most foundations remain as unreceptive to rural organizations and rural issues as they were a decade ago.

2009 smaller utilities workforce symposium:

Workforce development partnership

By Dave Harvey, RCAC rural development manager, Stevan Palmer and Angela Hengel, rural development specialists

In response to concerns about aging workers leaving the workforce without a trained pool of professionals to replace them, small utilities gathered at a workforce symposium to mull over the problem and consider viable solutions. RCAC water experts Harvey, Palmer and Hengel joined to capture the main content of the symposium and offer this white paper, slightly adapted and reprinted with permission from Source, *volume 23 number 4, Winter 2009.* Source *is a publication of the California-Nevada Section of the American Water Works Association. The authors note that smaller utilities have unique and possibly more ominous challenges compared to other industry areas. Symposium participants proposed several options to lessen the impact when greatly experienced professionals vacate the workforce.*

Executive summary

Water utility industry experts believe that the industry is poised on the brink of a massive workforce shortage. Some industry experts are also concerned about the lack of utility business management oversight at a time when the need for proper future planning for infrastructure replacement is increasing. Estimates vary according to sources, but it is generally believed that up to 40 to 50 percent of the industry workforce, particularly those in senior and management positions, may retire within the next five to 10 years. Water industry leaders are challenged with finding ways to attract new workers and to address what is being referred to as the "brain drain" or "silver tsunami" as senior staff move out of the workforce.

Although there have been efforts by regional, state and national agencies, and organizations to address this pending problem, there has been only a moderate amount of coordination between the various water industry groups. Only a limited effort is being directed toward training that targets the current and future business needs of water systems. Even less attention has been given to the small and very-small systems serving our rural communities, which the U.S. Environmental Protection Agency estimates make up 78 percent of the approximately 155,000 drinking water systems nationwide. These systems' abilities to finance both current and future needs are severely limited.

Many metropolitan regions have existing programs that are extremely successful in training and placing potential applicants in the water industry. However, in other regions, training methods and recruitment are non-existent. This imbalance tends to overload some regions with highly trained applicants who are seeking work while other, often rural regions are com-

pletely overlooked. This is particularly true with smaller utilities.

Competition for qualified applicants comes from both internal and external forces. Within the water industry, utilities often compete directly with each other for limited human resources, particularly with the need for experienced, certified operators. Outside industries present additional competition. Many industries pay as well as, or better than, water utilities. This is especially true for smaller utilities. Often other industries have better marketing strategies and are more easily recognized by high school or college graduates as viable careers. It is difficult for the water industry to compete for the same human resources as high profile careers, such as firefighting or nursing. The challenge remains for smaller water utilities to recruit and train both experienced and inexperienced personnel.

It is difficult for the water industry to compete for the same human resources as high profile careers, such as firefighting or nursing.

Symposium purpose

In July 2009, Rural Community Assistance Corporation (RCAC) brought together a diverse group of 20 small system representatives and stakeholders at its headquarters in West Sacramento, California. The purpose of the two-day symposium was to focus on workforce issues, obstacles and solutions as they specifically relate to smaller systems.

To assure that an unbiased approach was taken when examining these issues, individuals from a wide variety of utilities and stakeholders were present. Participants included representatives from smaller water systems (tribal and non-tribal), primary agencies, nonprofit organizations and educational institutions. (A complete list of participating agencies is included at the end of the article.) With this collection of stakeholders assembled, the symposium was well suited to explore the smaller system workforce dilemma.

The approach

The symposium was designed as a roundtable discussion that encouraged open dialogue and sharing of information, ideas, concerns and solutions. RCAC used a meeting facilitator whose role was to present the agenda and ensure that all participants communicated freely, while keeping to a reasonable time schedule. Recorders were used to capture key points on flip charts.

The symposium began by identifying the experts and skill sets within the room. Using this pool of expertise, the following topic areas were explored:

- Define small systems and very-small systems
- What attributes does the ideal smaller system employee need in order to be effective?
- What qualities would an ideal smaller system employment candidate possess?

After these areas were discussed, breakout groups were formed to address the following:

- What are the obstacles of finding, attracting, hiring and most importantly retaining qualified staff?
- When marketing for personnel, what information should a "help wanted" ad include?
- Where and how should smaller utilities advertise?
- What would attract a qualified or interested person to a smaller utility?
- What might be offered in lieu of pay to attract and retain personnel?

The breakout groups then reported back on the subject of the ideal applicant, and where and how this person could be recruited. Finally, the group was asked to explore:

- If the ideal applicant cannot be found, how can one be created?
- How can applicants with transferable skills be trained for careers at smaller utilities?
- What outreach should be conducted, or partnerships formed, to help ensure that adequate training is made available?

Findings

The following sections summarize results of each topic discussion. In reviewing this data, it should be taken into account that, unlike medium and large-sized utilities, smaller utilities suffer from economics of scale and may have as few as one paid staff or volunteer. These limitations force the smaller utility to find a very diverse person that is able to perform many different types of functions.

Many small water systems operate solely to support their primary business, such as mobile home parks and schools.

Group discussion and data output

Topic 1: Define small systems and very-small systems

- Small systems serve 501–3,300 persons
- Very-small systems serve 25–500 persons

This round of discussions focused primarily on very-small systems. These are the systems that most often have the greatest operational issues and the least resources. In addition, within very-small systems, there are significant differences in organizational structure and ability to attract and retain qualified staff.

Very-small systems face a wide variety of technical, managerial and financial challenges. These systems have few resources and frequently do not have the financial means to hire a single full-time employee or a contract operator. As a result, both management and operations staff members often receive minimum pay or work in a volunteer capacity. Recruiting and retaining experienced personnel under these conditions is difficult. These, and other factors, may lead to operations, maintenance and frequently, compliance issues, circumstances that may potentially impact public health and safety.

Smaller water systems are often managed by a volunteer governing board whose members come from a variety of backgrounds. While some may have experience in the area of board governance or water system operations, board members are often inexperienced in both areas. These board members may hire bookkeepers, general managers or operators, or try to find employees who can fulfill multiple positions, but volunteer board members may not know what the system truly requires in order to provide their community with safe, reliable drinking water. Volunteer board members frequently maintain other full-time jobs and are often required to drive long distances to participate in board meetings. Such circumstances make it difficult to have the required number of board members to make a quorum. Boards that wish to increase their capacity face other difficulties, including access to needed board training.

Many small water systems operate solely to support their primary business, such as mobile home parks and schools. These business owners are often the operators of the water system and may possess little to no drinking water experience or training. They, and their employees, often struggle to obtain certification and meet Safe Drinking Water Act (SDWA) requirements.

The symposium participants agreed that smaller systems would stand to benefit the most from water board and operator training, the ability to share trained operators (between systems), and a greater availability of contract operators. Unfortunately, contract operators and training opportunities are frequently not a viable option, due to lack of availability. In addition, specific training on how to locate and hire contract operators, and obtain the appropriate level of service is not readily accessible to smaller systems. This lack of resources often leaves the smallest of systems the most vulnerable.

The following topics have been consolidated for discussion purposes within this paper.

Topic 2: What attributes does the ideal smaller system employee need in order to be effective?

Topic 3: What qualities would an ideal smaller system employment candidate possess?

The group proposed that a candidate skilled in operations and management would be the ideal candidate and described the following characteristics as necessary for a smaller utility operator/manager:

- Able to pass a background check
- Dependable
- Possess a good work ethic
- Drug-free
- Organized
- Resourceful
- Experienced
- A problem solver
- Mechanically inclined
- Willing to work overtime and off hours
- Trustworthy
- Self-motivated
- Independent/adventurous
- Able to multi-task
- Skilled in communicating
- Have a stake in the community
- Competent
- Willing to grow/learn
- Appreciative of working outdoors (Okay with getting wet)
- Computer-literate

The daunting task of finding one or more staff with these abilities is apparent. Small systems are faced with a much different scenario than larger systems. Larger systems often have multiple staff and the luxury to bring trainees up through the ranks. Smaller systems often seek staff with existing/transferable skills, due to the fact that readily trained operators are typically not available. With this in mind, the group discussed ways to address the employment challenge.

The following topics have been consolidated for discussion purposes within this paper.

Topic 4: What are the obstacles of finding, attracting, hiring and most importantly retaining qualified staff?

Topic 5: When marketing for personnel, what information should a "Help Wanted" ad include?

Topic 6: Where and how should smaller utilities advertise?

Topic 7: What would attract this person to a smaller utility?

Topic 8: What might be offered, in lieu of pay, to attract and retain personnel?

The general consensus of the symposium group was that smaller utilities often lack the financial strength to attract the skilled staff required to do the job. The following unique attributes of smaller systems and rural communities were identified by the group.

Promoting jobs in small communities
These aspects could be described in job solicitations promoting both the community and the job:

- Good place to raise a family
- Typically a lower cost of living
- Low crime
- Flexible hours with a large degree of autonomy
- Short commutes
- All professional backgrounds are welcome to apply
- Healthy environment
- "Green collar" job (protects and conserves natural resources)
- Respected member of a close-knit community
- Work independently; be your own boss
- Friendly, small-town atmosphere
- Job/task variety
- Recreational options, such as hunting, fishing, skiing and boating
- Working outside and inside
- Minimal congestion
- Promote public health
- Smaller class sizes in schools

These unique qualities may need to be marketed to attract seasoned professionals who have spent long careers working in large utilities or other urban jobs. The concept is that professionals with these special attributes may desire a second career that is significantly different from their previous metropolitan profession. In addition, younger staff with families might find these small-town qualities to be a healthy environment for a family.

When tasked with identifying what advertising methods or mechanisms smaller systems could use to find and attract employees, the following methods were suggested:

An ideal smaller system employee often needs to possess a wide range of skills that encompass the technical, managerial and financial aspects of the water system.

The value in exploring non-traditional advertising areas, such as church groups, normally overlooked by larger systems, has merit. These options offer little or no charge to the system.

The following topics have been consolidated for discussion purposes within this paper.

Topic 9: If the ideal applicant cannot be readily found, how can one be created?

Topic 10: How can applicants with transferable skills be trained for careers at smaller systems?

Topic 11: What outreach should be practiced, or partnerships formed, to help ensure that adequate training is made available?

The symposium group developed a list of potential short- and long-term solutions based on the above issues. The participants then cast weighted votes for the ideas they felt showed the most merit for mitigating these issues.

The numbers in parentheses are the numerical scores each item received. This number represents the ranking of each item in importance as it relates to addressing the array of workforce problems that smaller systems face.

- Promote mandatory board training legislation (34)
- Promote a public national ad campaign with case studies (32)
- Contract operations training template or menu development (32)
- Smaller systems operator certification (16)
- More outreach to other vocational groups (for example, ROP, veterans, workers compensation, prisons) (12)
- Attract seasoned and retired employees to rural systems (8)
- Bring more attention to very small systems (7)
- Develop and provide board training including "how to hire a contract operator" (7)
- Offer basic treatment and distribution classes at all community colleges (7)
- Contract operator certification programs (6)
- AmeriCorps or other subsidized training opportunities (5)
- Scholarship program and/or loan forgiveness option for smaller system service (4)
- Develop a headhunting program (0)

By a wide margin, items one through five received the most support and were considered a priority by symposium participants. Other options for addressing workforce issues may be of more importance based on a system's physical geography, assets and other factors. This straw vote may not reflect the ideal solution or strongest idea for all regions within the country; rather the ranking should be viewed as a broad-based approach to workforce issues.

Summary and final thoughts

As stated, smaller utilities address the same issues as larger systems, complicated by minimal staff and financial resources. An ideal smaller system employee often needs to possess a wide range of skills that encompass the technical, managerial and financial aspects of the water system. Community college drinking water programs and other existing training programs may not be the final answer to address staffing issues with smaller utilities. Other models and programs specific to smaller systems are needed to bridge this gap.

There are many obstacles to hiring and retaining staff at smaller systems that are difficult to overcome. These include rural locations, lack of a customer base to fund competitive wages, and loss of experienced personnel to larger, better-paying water systems, to name a few. Symposium participants were in agreement that smaller systems often fall short in human resources, and the current situation will only worsen in the upcoming years.

Symposium participants concurred that there are several areas of focus that would help mitigate the difficulties in attracting, hiring and retaining a smaller system employee. Those ideas are summarized as follows.

A regional or national advertisement campaign aimed at increasing the public's awareness of water industry career choices would help immensely with attracting new personnel.

Public awareness and outreach

Recruiting employees for both smaller and large utilities is hindered by the fact that the general public and career counselors are not particularly aware of the high quality jobs within the drinking water industry. A regional or national advertisement campaign aimed at increasing the public's awareness of water industry career choices would help immensely with attracting new personnel. It would be in the interest of large water systems nationwide to pool their resources to create this national ad campaign. Smaller systems would benefit as well.

Training

- Provide more online training programs
- Provide additional on-site training and regional trainings targeting smaller utilities' needs
- Expand technical assistance to support online training, correspondence study and smaller system operations

Smaller system specialist

Develop a national "Smaller System Specialist" training curriculum with a recognized certification process for small system staff. The goals of this program would include:

- Create specialized training for small system staff. Focus would be on smaller system need-to-know information and training. This certification would provide subject matter that is not typically included on existing drinking water certifications, but is important to smaller system operators.
- The certification process would qualify potential job seekers for employment with small systems and provide water boards a baseline for evaluating applicants.
- The certification would create a mechanism for larger utility personnel or personnel from other industries to transition to a career in smaller systems.

Board training/certification

A contributing factor in systems failing to hire and retain quality employees is the relationship between governing boards and staff. Governing boards are frequently comprised of community volunteers who have little knowledge of the water industry, how water systems function, and what is needed to properly plan for future system needs. They may not know what questions to ask when hiring operators, nor understand the job duties of operators. They may not understand their role in managing staff nor realize how a lack of proper system management and operational oversight can lead to significant future expenses. Board members may have political agendas that are at odds with the concerns of utility staff. Board member turnover also disrupts the consistency of employee treatment, as do poor or nonexistent human resources policies.

Many of these problems could be reduced or eliminated with comprehensive board training. At present, board members often choose not to take advantage of even basic board training opportunities because they are volunteers and, frankly, believe it is not that important. Overall, the symposium participants strongly supported legislation that would require mandatory training and certification for water board members. A significant minority of participants however were opposed to this measure, citing concerns that such a requirement might have adverse consequences to recruiting and retaining good board members. Nevertheless, everyone agreed that properly trained governing boards, with an understanding of the job, are critical to addressing the problem of future business planning, hiring, training and retaining operational system personnel over the long term.

Contract operations

For the smaller systems, economies of scale may not allow for full-time or part-time staff. The use

of contract management organizations or sharing an operator with other systems may be a viable solution in these situations. Unfortunately, there are a limited number of contract operation companies, and these services are not available in many rural areas. There is also a wide disparity between the quality and level of service provided by different contract operation companies. Miscommunication between contract operators and water system management, or poorly written contracts that do not spell out the responsibilities of both parties clearly, may contribute to public health being compromised and inadequately protected. These problems might be addressed by developing comprehensive contract templates that offer a menu of services for the water board and/or primary agency to review. This would allow the proper level of service for each system to be identified. In addition, board training/certification could include training on how best to use these templates when hiring an outside organization.

Partnerships that work to keep America's smaller public water systems safe are mandatory if costs are to be kept manageable.

Development of a contract operations business model and a certification program for contract operators, similar to that for distribution and treatment operators, would help standardize services provided when using a contract operator. The certification process could also provide a way for aspiring operators to understand what it really takes to run their own water system operations company.

In Conclusion — Partnerships

Existing partnerships between organizations such as RCAC, the American Water Works Association, California-Nevada Section, California Rural Water Association and educational entities, such as California State University, Sacramento and community colleges, need to be strengthened and expanded with support from state and federal agencies.

Any and all solutions to the smaller utility workforce dilemma will only be as strong as the vehicles that deliver the services. Partnerships that work to keep America's smaller public water systems safe are mandatory if costs are to be kept manageable.

The smaller system specialist certification, contract operator certification and other ideas contained in this paper require both boots-on-the-ground and support from all stakeholders. New partnerships that include vocational counselors, colleges, technical schools and training agencies (such as Job Corps, AmeriCorps, Regional Occupational Programs and Veterans Affairs) offer endless possibilities.

Coordination of smaller system workforce development initiatives should be implemented at national and state levels to assure efforts are not wasted. Sponsorship of these initiatives through state and federal funding will begin turning the tide on the "silver tsunami." Leadership opportunities abound for agencies, such as the U.S. Environmental Protection Agency, in moving these efforts forward.

Symposium Participating Agencies & Organizations

California Department of Public Health
California Rural Water Association
California State University, Sacramento, Office of Water Programs
California-Nevada Section of the American Water Works Association
Calpine Water System
Colusa Indian Community
Indian Health Service
Palomar Community College
Park Water Company
Pauma Band of Luiseño Indians
Rural Community Assistance Corporation
Rural Community Assistance Partnership
United States Environmental Protection Agency

Membrane Bioreactors evolve:

Expanding small community options

By David Wallis, RCAC rural development specialist

Membrane Bioreactors (MBRs) have been around for decades, however, they are changing from an emerging technology to one that is experiencing growing acceptance as a treatment option. When electronic devices and computer software become obsolete as fast as we should change batteries in our smoke detectors, it may seem strange that it has taken decades to evolve this new technology. Keep in mind that wastewater treatment plants are designed to provide service for 30-50 years or longer. With a minimal number of wastewater facilities being constructed and in service, decision makers are very leery of making a bold new choice when committing rate payers and/or tax dollars without seeing a clear proven track record of reliability in their next or a new wastewater facility. In this article, David Wallis discusses MBR particulars and areas for concern, and gives an overview of the MBR process and important factors to consider before installing an MBR in a small community. The article is a general introduction and overview of MBRs. Wallis strongly recommends that small communities use the information as a starting point and seriously research and weigh all the options before making a decision about which treatment process to choose.

If your community has a discharge requirement for a consistent, high quality effluent, is in a water-sparse area and needs to supplement its water supply, consider the Membrane Bioreactor (MBR) process as a viable community solution.

MBR particulars

An MBR membrane is a permeable polymeric media used to separate liquid from solids. Membranes come in different configurations, but the most common include hollow fiber, flat plate and tubular membranes with varying inner diameters. Typical treatment plant MBR membranes remove cysts, protozoa and bacteria fairly consistently, but will not achieve consistent virus removal that specialized membranes, such as reverse osmosis and ultra filtration achieve. An MBR process usually consists of multiple banks of membrane cassettes in parallel operation to separate the solids and liquid of the activated sludge biological process.

Electronic process control equipment

Aboard today's jet aircraft, you find a cockpit full of modern electronic flight control equipment that had not been envisioned when earlier aircraft were on the drawing board.

A similar contrast exists between the newer MBR treatment plant and the majority of older activated sludge wastewater treatment facilities. With this in mind, consider the staff capabilities necessary to operate and maintain the MBR system, a computerized wonder. The MBR plant is critically dependent on the computer control system and will need technical support that may or may not be readily available in a remote or rural environment. A backup control system could be considered, but certainly will significantly increase project cost.

Membrane Bioreactor process

As with all wastewater treatment plants, the primary goal is to prevent materials that will

deplete oxygen from entering the receiving waters where they would harm the aquatic environment. This is typically accomplished by removing settleable materials and by converting non-settleable materials biologically into settleable materials, which are removed in the "secondary clarifier," a large settling tank.

In current MBR designs, many enhancements, developed after learning through operational experience, have been incorporated, such as clean-in-place (CIP) capability.

At the core of the MBR process is a biological Activated Sludge Treatment Plant that uses membranes instead of a "secondary clarifier" to separate biomass solids from liquids via filtration. The MBR system significantly reduces space-land requirements further by combining two processes — the conventional secondary clarifier and tertiary filters (additional filtration after the clarifiers). In many cases, substantial expansion of an existing wastewater treatment plant capacity can be accomplished without any expansion of the existing plant site "footprint" with conversion to an MBR process.

MBRs are used in various treatment tank configurations — anoxic (less than 0.5 mg/L dissolved oxygen), aerobic (greater than 0.5 mg/L dissolved oxygen) or anaerobic (near 0 mg/L dissolved oxygen). These are often installed in a series to achieve nitrogen and/or phosphorous removal, if required.

In current MBR designs, many enhancements, developed after learning through operational experience, have been incorporated, such as clean-in-place (CIP) capability. This design allows the operator to easily perform routine CIP maintenance without removing the actual membrane from its operational tank. Many of the early MBR designs did not incorporate cleaning capabilities. Instead, they required the operator to remove membranes from the activated sludge biological reactor tank. This is a labor intensive procedure that could potentially damage the membranes.

Membranes are scoured with air to prevent build up and fouling of the membrane with excess biomass. Early air scour designs had continuous air scour and little or no control. Newer air scour designs have incorporated features, such as air diffuser placement and selection to optimize the air scour while reducing the air requirements and their associated energy costs.

The current trend of MBR biological processes is to operate with lower Mixed Liquor Suspended Solids (MLSS) concentrations of 6,000 to 12,000 mg/L than initially used. MLSS is the acronym for what appears as a brown "witch's brew" that one sees in the basins of activated sludge, and at an MBR wastewater treatment plant. This witch's brew is in fact composed of different micro-organisms that collaborate to perform biological treatment by using the raw wastewater as a food and energy source, thus stabilizing the raw wastewater. Early MBRs were operated with much higher MLSS concentrations of 12,000 to 20,000 mg/L, but this practice seems to be unpopular for several reasons, including poor liquid solids separation. High MLSS concentration is promoted because it favors significantly lower production of biosolids.

Critical elements of an MBR process

Getting back to the early aircraft analogy, it did have some positive features, such as its ability to fly low and slow, which was great for spotting things on the ground, as well as for occasional sightseeing. Trying to maneuver a jet airplane so it flies as slow and low to the ground as a propeller-driven aircraft could quickly be hazardous to your health.

A similar situation also exists for screening raw wastewater at most activated sludge treatment plants versus the newer MBR. Most activated sludge plants can handle fairly large amounts of debris and non-settling materials, such as plastics, paper and hair with relatively minor impacts. Such materials can damage or destroy membranes at an MBR treatment plant in a pretty short time frame. Understandably then, the standard preliminary treatment equipment at most currently designed MBR plants consists of 0.5 to 2 mm gap width automated fine screens with redundant backup or other methods to ensure that these potentially membrane damaging raw materials are not allowed into the process. Such equipment can be significantly more expensive to purchase, operate and main-

tain than standard equipment used at most other activated sludge treatment plants.

Operational concerns

Fats, oils and grease (FOG) as well as various other industrial chemicals, which typically should be controlled through a FOG ordinance and or pretreatment program, are of particular concern. These discharges cause problems at an activated sludge wastewater treatment facility and can foul the membranes and/or permanently damage them, often resulting in costly membrane replacement.

Good research into existing flow conditions is essential to achieve a properly designed MBR facility.

If you have an aging collection system with infiltration and inflow (I/I) problems, wet weather hydraulic loading into an MBR plant also is significant.

Good research into existing flow conditions is essential to achieve a properly designed MBR facility. Typically, membranes have a defined hydraulic capacity and cannot exceed the MBR design. Paying to incorporate adequate MBR design flow capacity in an aging rural collection system with a large I/I problem could be cost prohibitive. Typically, a conventional activated sludge wastewater plant can exceed its design flow and handle peak flows for several hours before effluent quality deteriorates significantly.

Energy costs and operation locations

MBRs will cost significantly more to operate than a conventional activated sludge treatment plant. However, energy costs associated with MBR operation are dropping rapidly as manufacturers improve their systems and design. Nevertheless, costs can range from 40 to 150 percent more than the activated sludge treatment plant.

Readers may wonder where MBR treatment is being used in small communities.

They might ask, "Aren't these high-tech treatment processes reserved for use in industrial, large municipal wastewater plants or other unique situations?"

Actually, as of 2009, there were at least 2,500 MBR plants in operation worldwide, based upon unverified information from manufacturers. At the same time, within the United States, at least 250 MBR plants were operational.

As of 2009, in the U. S. more than 100 of these MBR plants were in operation at wastewater plants servicing flows of more than 0.250 million gallons per day (mgd). But, most plants worldwide and in the U. S. are in service with much smaller flows. With manufacturers trying to shed the best light on their own particular product and guarding what installation information they have, it is very difficult to compare proprietary products and determine their true installed classification. It is much like trying to compare apples to oranges. The number of facilities in operation whether it be small flows, industrial or residential all seem to be growing substantially. Best estimates indicate that since 2007, the cumulative number of gallons treated by MBRs in the U. S. has grown from approximately 400 mgd peak capacity to more than 600 mgd peak capacity and the numbers of gallons treated by MBRs are increasing rapidly.

MBR installation advantages

MBRs offer a high level of treatment that is consistently very low in effluent constituents.

- MBR facilities typically produce excellent results in reducing turbidity, biochemical oxygen demand (BOD) and total suspended solids. Less than 0.2 mg/L NTU turbidity is a water clarity indicator. Less than 2 mg/L BOD is a water quality indicator that determines receiving water oxygen depletion potential and possible damage to the aquatic environment. Finally, less than 2 mg/L total suspended solids are a measure of larger filterable materials in the water.

MBRs can be constructed for existing size requirements and future growth.

- Expansion to meet growth is accommodated simply and without additional construction, by initially constructing basins that will accommodate additional membranes in the future. Introducing additional membranes as needed reduces operational and construction costs.

Plant area size differs between MBRs and CASs.

- The footprint of an MBR is generally much smaller than that of a Conventional Activated Sludge (CAS) plant. However, MBR facilities can meet effluent limits that are similar to CAS with filtration. In this case, an MBR facility will have a capacity of 2.5 to 3.0 times the capacity of a CAS facility with filtration in the same footprint.

The footprint of an MBR is generally much smaller than that of a Conventional Activated Sludge (CAS) plant.

Infrastructure costs are significantly lower for an MBR plant due to smaller biological tank requirements.

The MBR process produces reclaimed water.

- With less water available in many parts of the country, the MBR process provides a marketable water product that consistently meets reclaimed water standards in states, such as Alaska, Arizona, California, Colorado, Idaho, New Mexico, Utah and Washington.

The MBR creates a drought proof water system.

- Water reuse expands limited available potable water supplies during periods of drought.

Possible MBR installation disadvantages

- MBRs have a higher operation and maintenance cost than other activated sludge treatment plants.
- To protect vulnerable membranes, increased pre-treatment equipment is critical.
- A higher required maintenance skill level is needed.
- A redundant computer control system is preferred for MBRs, but will increase project costs.

Final considerations

Most MBR operators with which this author has interacted indicated their extreme satisfaction with their decision to install MBR facilities. They have met their need to process reclaimed water, meet stricter discharge requirements and/or their desire to create a smaller footprint for their wastewater facility. Most importantly, these operations had sufficient funding to support the installation of the facility as well as the increased operational costs.

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Rural Community Assistance Corporation
3120 Freeboard Drive, Suite 201
West Sacramento, CA 95691

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