

Water for the Future: Stakeholder Perspectives



Presented to the Lower Platte South Natural Resources District

November 2011

Enquire Research Lincoln, NE

Table of Contents

OBJECTIVES AND PROCESS	3
SUMMARY	4
KEY FINDINGS	6
GROWTH AND SUSTAINABILITY	7
FUTURE NEEDS AND CONCERNS - CITY OF LINCOLN	9
FUTURE NEEDS AND CONCERNS - BUSINESS AND INDUSTRY	10
FUTURE NEEDS AND CONCERNS - LANCASTER COUNTY	11
FUTURE NEEDS AND CONCERNS - AGRICULTURE	12
FUTURE NEEDS AND CONCERNS - PLATTE RIVER AND I-80 CORRIDOR	13
OTHER FUTURE NEEDS AND CONCERNS	14
SUGGESTED MANAGEMENT STRATEGIES	15
THE IMPORTANCE OF PROCESS	18
ONE PIECE OF ADVICE	19



Objectives and Process

The Lower Platte South Natural Resources District (the District) is developing an Integrated Management Plan for the District's water resources in order to protect existing surface and ground water users, support future economic and population growth, preserve the environment, and avoid future supply imbalances that could lead to a "fully-appropriated" designation by the State of Nebraska.

Stakeholder input is an important part of the planning process. The District is working with municipal water systems, rural water districts, and other public agencies, but wanted to include additional stakeholders to increase involvement and interest in the process.

The District asked Enquire Research, a third-party research company located in Lincoln, NE, to interview 14 key stakeholders with expertise in water management, responsibility for public and private policies that impact water use, or who represent significant economic or community interests. Interviewees were selected to represent government, business and industry, agriculture, and environmental organizations.

Enquire and District staff collaborated in developing the questions for the 30-minute interview.

The interviews were designed to identify:

- Future growth patterns and water needs in the District.
- Concerns and issues related to water access, use, quality, and management.
- Potential strategies for future water management.

As you read this report, please consider the list of people we interviewed, as the mix does affect the issues, concerns, and suggestions presented. Qualitative research is only representative of the people who are included in the study. The purpose of the project is to gather insights and opinions from stakeholder and influencers and the results should be not be used to make inferences about a larger population.

Participants

Chris Beutler, Mayor, City of Lincoln

Paul Lienke, Mayor, and Jessica Preister, City Administrator, City of Ashland

Alan Mueller, Mayor, City of Louisville

Ken Haar, State Senator, District 21

Derrel Martin, Professor, Biological Systems Engineering, UNL

David Aiken, Professor, Department of Agricultural Economics, UNL

Nicole Fleck-Tooze and Sara Hartzell, Lincoln-Lancaster County Planning Department

Marc LeBaron, CEO, Lincoln Industries

Ross McCown, NEBCO/Western Sand and Gravel

Kyle Fisher, Lincoln Chamber of Commerce

Kent Seacrest, Seacrest and Kalkowski

Burdette Piening, Agricultural Producer

W. Don Nelson, Publisher, Prairie Fire

Lee Orton, Executive Director, NE Well Drillers Association

Summary

Fourteen people representing government, business, education, planning, and environmental organizations shared their suggestions and concerns about water issues in the District. Population and economic growth in the area is anticipated and the consensus is that we will meet future demand by seeking additional sources of supply. Participants strongly believe that technology will play a major role in helping to achieve efficiencies that will help achieve sustainability.

While there are many suggestions for addressing future supply and quality needs in this report, three areas emerged as essential to building a strong foundation for future efforts.

The first area is education. The District already provides classroom and outdoor education programs for all ages that teach residents about the natural environment through experiencing it.

A broader social marketing campaign would focus on understanding the choices we make every day regarding the use of water and how these choices might affect the lives of our children and grandchildren. Sustainability is about using resources in a way that maintains the quality of life for future generations. Educational campaigns and programs must reach both urban and rural residents. The Management Strategies section of this report offers additional suggestions.

The second area is conservation. While household conservation is important, one stakeholder observed that large-scale reuse projects are needed to "make a real difference". The city of Lincoln encourages grey water systems in new construction and another community has explored using treated wastewater effluent for irrigation. Treated wastewater can also be used for cooling and other industrial processes. Participants see a role for the District in providing technical assistance and cost sharing in these and other areas that encourage conservation.

Another way to significantly reduce use is to increase costs. Lincoln was a leader in implementing a tiered rate structure for water; a steeper schedule would force households to make choices about how they use water and encourage businesses to invest in more efficient equipment. Cities may be reluctant to use the rate structure to reduce per capita use because operating water systems at full capacity is important to economic sustainability. It is a difficult balance, as businesses find little incentive to reduce use when rates subsequently increase.

Summary Continued...

The third area is cooperation. The integrated management planning process presents an opportunity for the NRD to encourage more communication between political subdivisions and stakeholders. By including all stakeholders in the process of plan development, the District is building a foundation for communication and cooperation that will pay dividends in the future as the issues associated with water use become more complex and contentious.

Stakeholders offered possible strategies for protecting existing wells from being drawn down by large new users, but this does not solve the problem of new and existing domestic users competing with each other for supply. For example, neither natural resources districts nor county boards have the authority under state law to regulate the number or density of domestic wells. Some interviewees link supply and quality issues in rural areas to this absence of regulatory authority and suggest that political subdivisions need to recognize the effects of development policies on water quality and access, particularly in water shortage areas.

Small communities are also facing the high cost of new wells, transportation, distribution, and treatment. Partnering with larger communities can create win-win outcomes. The Joint Antelope Valley Redevelopment Area process could provide a model for future cooperation.

Future decisions and conflicts regarding water supply will extend beyond District boundaries as communities seek more distant sources of supply and upstream decisions affect downstream users on the Platte River. Several stakeholders suggested the need for more coordination at the state level. For now, the District needs to determine what role it wants to play in this scenario.

Politicians and businesses expect that water will be available at a reasonable cost to support not only economic viability, but also growth. They also expect "hard numbers" about future supply and demand so they can assess the costs and benefits based on reliable information supported by science. Stakeholders know that we must protect our water resources for future generations, but it is difficult to think about making hard decisions today when the future is so far away.



Key Findings

- Stakeholders are not in complete agreement about whether the District will have enough water to meet future needs. Climate extremes may cause more temporary shortages, but one stakeholder believes that full appropriation is unlikely because there is no indication of any major changes in future land use.
- Lincoln and the I-80 corridor will drive increases in population and commercial growth. Water use will increase, but consumption does not need to increase. While urban growth will mean more concrete and increased runoff, we can do a better job designing our storm systems to recapture and reuse.
- Given the uneven distribution of water throughout the District, transportation will be a major issue in the future, as communities are forced to seek supplies from greater distances.
- Smaller communities face a serious disadvantage when it comes to providing access to affordable, safe water. Transportation, distribution and treatment costs will increase and will be more difficult to support with a smaller population base.
- Coordination between political subdivisions in delivering water to residents makes sense, but there is little indication that entities will be willing to coordinate future efforts. "There is no critical mass to prompt cooperative action."
- New subdivisions and acreage developments will continue to face more quality and quantity issues, giving rise to conflicts between cities, developers, and agricultural producers. The absence of regulatory authority over the number and density of domestic wells is perceived to be part of the problem.

We will have enough water, but not necessarily where we need it.

Water access will be like musical chairs, except when the music stops there will be two, maybe three fewer chairs than the number of players.

- Business and industry will seek efficiencies in water use in order to control their expenses.
- Irrigators will become more efficient by using drip irrigation and plant varieties that require less water. Most stakeholders see the amount of cropland in the District remaining constant, with higher yields per acre meeting increased production demands.
- Water quality will continue to be an issue in some parts of the District. Strategies will be needed to address future wellhead contamination, nonpoint source pollution, and sufficient separation of septic systems and wells.
- There will be future development along the Platte River as baby boomers seek retirement homes and demand for recreational opportunities increases. Water quality and habitats must be protected from septic tank discharges. Upstream habitat requirements may increase downstream flow
- Conservation will be important in supporting economic and population growth, but currently is not a priority in some communities where investments in treatment facilities and other infrastructure make selling more water a priority.



There is no good reason to limit growth as we have sufficient resources now and will have them in the future. We have not reached our limits.

Limits to growth are not "fair" because people should be able to choose where they want to live.

How would you limit growth? It would be counterproductive. We are always looking to add additional revenue and jobs. We want to grow and are in a very advantageous position, but we need to manage our growth.

We will always look at how we grow and the effects on sustainability. But the idea of limiting growth per se is unpalatable because of our location in the Midwest. We have no natural barriers and the land is there. Why shouldn't we grow?

Key Findings

Continued...

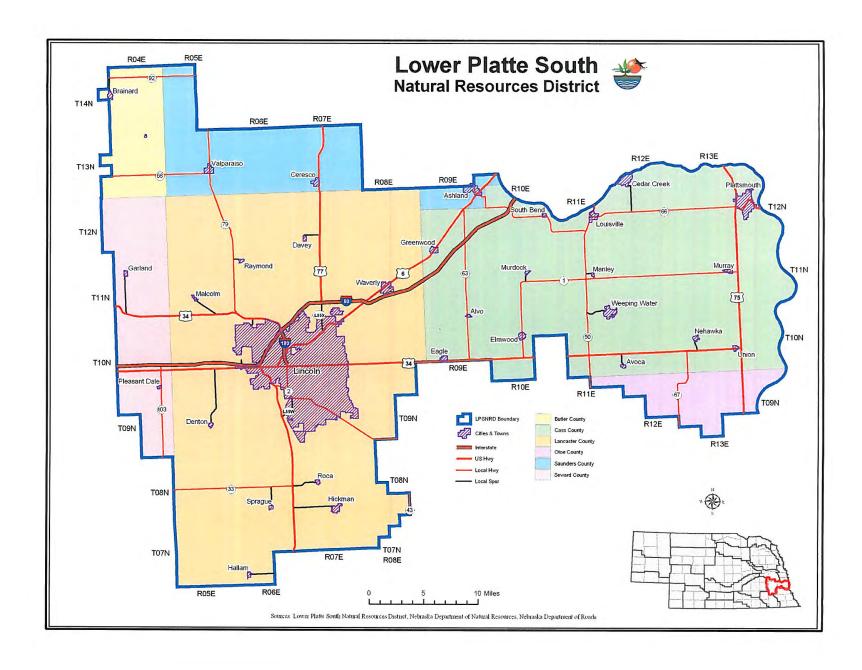
- Cities will seek ways to reuse water as energy costs increase.
- The success of the integrated management plan will depend on the process. Stakeholders want much more than communication. They want to be included into the decisions that produce the plan. Partnering in the development phase is important to partnering in implementation.
- Statewide leadership in water management is needed and elected officials need to adopt a comprehensive plan. The Natural Resources Districts can play a role in making this happen. They should not be pitted against each other in making difficult decisions about supply, as this would unravel the entire system.

Growth and Sustainability

Participants expect to meet long-term water needs by finding additional supplies, and, to a lesser extent, through conservation. In the next 50 years, managing growth makes more sense than limiting it.

Some stakeholders believe that growth will be limited when we have reached the limits of our resources, but today limits are neither economically desirable nor politically feasible. Policies such as zoning have the effect of limiting growth now in certain geographic areas.

When people see abundant land and abundant water it affects attitudes to growth.



This section summarizes future needs and concerns expressed by and about different stakeholder and user groups.

City of Lincoln

Needs:

- New well field to support projected population and economic growth.
- Continue open dialogue with other entities getting water supply from the Platte River.

Concerns:

Storm sewer flooding.

Lincoln will need additional supply, treatment and transmission improvements by 2050 to meet projected demand. Projections are based on current per capita use and a population of 411,000 in 2030 and 511,000 in 2050. According to the 2040 Comprehensive Plan, additional well field property and water rights will need to be acquired in the planning period to meet these demands.

Significant growth is projected in the city center on land made available through the Antelope Valley Redevelopment Project. City population is expected to increase by 1.2% per year, but city boundaries will remain the same as those projected in the 2030 Plan. City planners believe that demographics and lifestyles will support this infill strategy, as younger people will prefer urban to acreage living because of access to amenities.

Lincoln water use has not grown as much in the last 10 years as projected in the 2030 Comprehensive Plan. According to the city, this demonstrates that conservation is working and the 2040 Plan projects that per capita use will remain constant. The city hopes modest projections for infill and redevelopment will promote sustainable growth.

Lincoln was an early adopter of a tiered water rate structure where costs increase with use. Some stakeholders advocate making the structure more aggressive to further encourage conservation.

There are no plans for growth to the North of the city in the Saline Wetlands area in the next 50 years, although this is not ruled out after 2060. Recreational development will focus on connecting current recreation areas through the trails system, rather than the development of new areas.

Conservation Strategies and Programs in the 2040 Comprehensive Plan

Strategies

- Explore opportunities for using grey water
- Promote and encourage the use of water conservation systems in City and County codes
- Provide incentives for projects that utilize green building codes or green rating systems
- Consider incentives such as fee waivers and rebates to encourage sustainable measures for buildings and landscaping.

Programs

Rain to Recreation
Permeable pavement
Rain barrels
More use of native plants
Mayor's conservation
education task force
Drip irrigation
Mandatory low flow
restrictions on watering

Business and Industry

Needs:

 Businesses need to be assured that they will have the quantity of water they need, when they need it. Timing is critical to meeting production schedules and deadlines.

Concerns:

- Location of current water supply forces development north of the city. Development opportunities toward the south are more expensive because a new pumping station would be needed.
- Large manufacturing entities must assess water issues before buying land and developing plans, as this has sometimes been a problem.
- The new annexation policy of Rural Water District #1 south of Lincoln will greatly increase costs for developers.

It is difficult to project changes in industrial water needs in Lincoln because use is tied to industrial processes and not square footage. Lincoln will continue to aggressively seek industrial and commercial development; although some stakeholders believe Omaha is a more likely candidate for industrial growth in the region.

Stakeholders also disagree regarding whether the Lincoln area will see more industries that use a large amount of water, known as "wet industries."

Some participants say that Lincoln won't be able to "be in those markets" because of water supply issues. Others say that the city will welcome new industries, even those that have high water requirements.

The city needs to be very protective of supply for its business and industrial users. In the future, Lincoln can make significant inroads by reducing uses such as lawn watering, which will require a change in our attitudes regarding yard and garden aesthetics.

According to one stakeholder, it would make more sense to limit certain non-essential domestic use before restricting business and industry.

In the longer term, the Midwest could see the return of more manufacturing opportunities, which could increase water needs.

The US industrial base has declined in the last 10 years given globalization, but has not declined as much in Nebraska. The decline will be more dramatic in the short term. In the long term, global comparative advantage will even out and some manufacturing will return to the US. A more "green" nation and economy might encourage more manufacturing development in the Midwest.

Lancaster County

Needs:

- Some areas in the county lack clean, affordable water.
- New sources will be needed in the future, along with treatment and distribution systems.
- Acreage development in the county will increase the need for new wells.



Concerns:

- Smaller communities lack the resources to pay for additional supply and treatment and will be at a significant disadvantage compared to Lincoln in meeting future needs. Communities to the west of Lincoln are most vulnerable.
- Wellhead protection areas alone will eventually not be sufficient to prevent an increase in nitrates in the water supply.
- In 50 years, it may be difficult to support the water needs of the population on acreage subdivisions.

Lincoln's current policy is to supply residential water only to annexed areas. We were told that this policy protects the city from responsibility for guaranteeing water supply to un-annexed areas. One interviewee suggested the city might need to reassess this policy to increase revenue in the future.

The Lancaster County Board of Supervisors is currently considering a proposal to reduce the 20-acre minimum requirement for acreage development. According to some interviewees, increasing the number of acreages in areas already short of water may increase water use conflicts between landowners.

Agriculture

Needs:

- Pressure on Nebraska to produce more food for world consumption could increase the need for water for irrigation.
- More water will be needed for smaller growers given the "buy local" and "farm to table" trends.

Concerns:

- Acreage development may draw down existing supplies. Producers are concerned that acreages are being developed without considering the availability of water.
- Prolonged drought could cause temporary supply issues.
- New high capacity wells (new irrigators, feedlots, and industry) are a threat to existing users.

Stakeholders agree that Nebraska farmers will be pressured to increase production but there is no consensus on how this will affect water use. Technology will continue to create more

agricultural efficiencies, such as drip irrigation systems and new cultivars that need less water. Irrigators may need to use more water to increase output, but overall water use will be more efficient.

According to one participant, it is not necessary to irrigate in this part of the state to get high yields. However, irrigation is not a big depleter of the aquifer over time, as rainfall is sufficient to recharge the supply.

There is disagreement over whether more acres in the District will be put into production or whether increased yields per acre can meet the demand.



Everyone thinks that irrigators are taking their water. But the problem is that people want to build homes where there is no water. They think it is their right to build; however, if there never was any water, there never will be.

In the long term, there will be a lot of pressure on our water resources, as the supply is not increasing. Weather and climate change both affect supply. With the emphasis on global food supply, Nebraska producers become very important and there will be pressure to put more land into production.

Platte River and I-80 Corridors

Needs:

• New supply to replace existing wells in some communities.

Concerns:

- Quality of new wells, high levels of manganese and iron.
- Treatment requirements will increase costs.
- Well saturation along the Platte affects future supply options.
- Poor development planning along the Platte River has resulted in contamination of wells from septic tanks and affects downstream water quality.
- Need a balance along the Platte between wildlife and development.

Ashland and the I-80 corridor have an aggressive plan for growth. While we were told there are no formal rules regarding growth in the I-80 corridor, there is an "unwritten agreement" that commerce is preferred over industry. Respondents did not envision another golf course or water park, but additional water recreation along the Platte is a possibility.

Louisville does not have a formal plan for growth. While there are significant geographic constraints to growth adjacent to the city, the new water plant is operating at 50% of capacity and increased use is economically desirable.

The Platte River corridor has several large well fields and it will become more difficult to drill new wells because of location constraints.



We have not been turned down for a well permit yet, but we are expecting that one day it will happen.

Other Future Needs and Concerns

Other needs and concerns are more district-wide in scope:

- Verifying adequate supply and demand will be important in the future.
- Balancing contamination issues with drinking water quality.
- The Lower Platte South has different issues compared to other NRDs where supply is a big issue. These include the effects of upstream development on water quality and maintaining adequate stream flow. When the level of groundwater drops, it affects stream flow and creative solutions are needed.
- Climate change will mean more weather extremes. More storage upstream can lessen the effects of heavy flooding.
- Pending federal regulation of emerging contaminants (ex. chemicals from prescription drugs) will have an effect on treatment costs and ultimately raise water rates.
- Re-examine the economics of ethanol production—"if you add the value of the water, the cost is horrendous. Is it worth it?"

Our current focus or mantra is to continue to invade the flood plain with development. While we haven't had a major flood in recent years, we need to recognize that our time here has been very short in the long history of the area's geography, and flooding has occurred and will occur again. The NRDs have failed to educate the public that land and water are timeless, and despite our best efforts at control, previous patterns will repeat themselves eventually.



How can people really believe water is a finite resource that we need to conserve when we see bottled water for sale everywhere?

We need to determine which strategies will provide the biggest gains.

Why should we return the water to the ground or the river when we could use it for other purposes? We save the pumping costs. It is more of an energy and cost issue—is it cheaper for Lincoln to implement stronger conservation measures or build a new pumping station? Saving water is not about using rain barrels; it is a larger issue of reuse.

Suggested Management Strategies

This section describes stakeholders' suggestions for managing water resources.

Education

Social marketing campaigns are needed to change public attitudes in the following areas:

- Stewardship of a finite resource. People pay lip service to stewardship and conservation, but many don't practice either one. Interestingly, individuals disagreed on which generation is more conservation-minded. Some said the older generation is more appreciative of the value of water, while others said, "our children and our grandchildren get it, but we don't."
- Investments in conservation, reuse, and stewardship. People view paying more now for future environmental benefits as a short-term "loss" rather than a long-term gain. We must convince people that investments now will pay off for the next generation.

Conservation and Reuse

There is general agreement that conservation programs will play an important role in the future. Conservation should be voluntary except during temporary shortages. Suggestions include:

- Establish a "lifeline" rate for domestic water use. Tiers for quantities above the "lifeline" should be steeper and narrower than currently in Lincoln.
- Smaller communities need tiered rates if they do not have them already.
- Offer technical assistance to users about using new technologies to increase efficiency - this could be a role for the NRD.
- NRD to provide soil moisture meters for irrigators at reduced cost (other Districts do this).
- Require rain sensors for automatic sprinkler systems in urban areas.
- Reuse treated wastewater effluent for irrigation.

Suggested Management Strategies

Continued..

Governmental Cooperation

 Cooperation and sharing treatment and distribution costs makes sense, but must be fair to smaller communities.

Well and Sanitary Regulations

- Require testing for new high capacity wells to identify any interference with existing wells (similar to Upper Big Blue NRD requirement)
- Adopt standards to control the depletion of existing wells by new wells. For example, a three mile, 40% depletion over 25 years rule means that a permit for a new well would be denied or withdrawals limited if the well would deplete the supply within three miles by 40% or more over 25 years.
- Require a buffer strip for all irrigators, for all agricultural operations and for all developments near rivers and streams. This policy would require cooperation between the District, cities, and counties.
- Need a more aggressive position from the District regarding chemical pollution of groundwater (farm and lawn chemicals, for example).

District systems for monitoring use

• Adaptive management: The plan needs to include a system of metrics for the future because you can't manage what you can't measure. It needs to be reviewed periodically to remain viable. Unforeseen events can radically change things (ex. some people said Lake McConaughy would never refill). Adaptive management is more expensive but it makes the plan stronger. Another interviewee described adaptive management as adapting our usage behaviors to existing and future supplies. Why can't we cooperate to address competing demand and reduce costs by combining/sharing systems?

Do we know enough about actual consumption? Not use, but depletion. We need more and better monitoring - it is not critical yet, but we do need a better database for future management.



Conflicts will be basin-wide. A critical question is: To what extent should the NRDs be drawn into these conflicts? We can't pit the NRDs against each other. It would unravel the entire structure.

Suggested Management Strategies continued...

Resource allocation

- Consider uses in terms of total benefit to the population and not in terms of the value to individual segments of society. "Ask, 'Where is the greatest benefit to everyone?' rather than looking only at the value to a smaller group of people."
- Industrial and commercial uses should compete
 with agricultural users based on the economic
 value of the end products. Whoever creates the
 largest economic value should have the resource.
 In reality, politics will play a major role in
 allocation. Water will become more important, but
 also more political.
- "We need to change the 'use it or lose it' rule" (water rights).
- "The District will need to be the administrator and mediator of any allocation process. I don't know if they are equipped to make those hard political decisions. We don't have a lot of water to reappropriate."

Statewide coordination

- "Statewide leadership in water management is a concern. LB962 is seen as addressing all of our problems, but it doesn't. We need more pressure on elected officials to develop a comprehensive plan. The NRD can play a role in bringing this to the forefront, but we need integration of water resource management statewide."
- "We need more coordination at the state level—a water czar."

The Importance of Process

Many of the stakeholders offered advise and perspectives on the process for developing the integrated management plan. The process should be deliberate (well-planned), inclusive of all interests, representative, and allow for meaningful participation in decision-making.

Deliberate

You need a good process to get good substance. To do it right you need a broad-based collaborative model where everyone is a stakeholder. It needs to be very public. Bring in the experts, both local and non-local. This takes money. If you don't do it right, it will be a plan that just sits on a shelf.

Inclusive

Make sure you include anybody with any interest at the table. I think the NRD has done a good job of this in the past. This means not just making information available, but including stakeholders in the actual decision-making.

All interests should be included at the very beginning. Keep information in front of everyone through personal communications (not email). You need to have good, hard data before you go to the public.

Small municipalities need a voice at the table - are rural water districts going to be able to meet their needs?

Be respectful of all entities. Don't forget the needs of smaller communities. Don't treat us like we all wear bib overalls.

Representative

We need adequate producer representation at the table during plan development.

Don't devalue Lincoln by saying everything has to be even. It would be wrong to say that Lincoln only gets so much compared to the rest of the District. There is more chance for commercial and industrial growth in Lincoln than in any other area of the District.

Meaningful

Participants want to share in making the decisions regarding plan content.



One Piece of Advice

What one piece of advice would you give to the District and the Board as they develop an integrated management plan?

Determine who should be involved in the process, have open meetings to develop a strategy and create the plan.

Stakeholders should be included in the process from the very beginning. Keep information in front of everyone through personal communications (not email). Need to have good, hard data before you go to the public.

Continue to reach out to as many stakeholders from different groups and be proactive about planning.

Require buffer strips...work with counties and cities to require buffer strips for all development along streams and rivers. Work with counties on zoning changes.

- 1. Adaptive management: the plan needs to include a system of metrics for the future (you can't manage what you can't measure). It needs to be reviewed periodically to remain viable. Unforeseen events can radically change things (for example, some people said the Lake McConaughy would never refill after the drought). Periodic review is more expensive, but makes the plan stronger.
- 2. Lincoln, Lancaster County and the NRD could do a better job of true coordination. This is particularly true for the city and the county. Are we working together or not? I think we can do better.
- 3. Small municipalities need a voice at the table. Are rural water districts going to be able to meet their future needs?
- 4. Do we know enough about actual consumption? Not use, but depletion. We need more and better monitoring this is not critical yet, but we do need a better database for future management.

Don't be afraid to "piss off" your neighbors. Don't be so obsessed with the fear that someone will not like you if it is the right thing to do. It is the difference between being smart and wise.

Be respectful of all entities. Don't forget the needs of smaller communities. Don't treat us like we are wearing bib overalls.

Strive to understand the concept of sustainability. The NRD system in Nebraska is great and works well for protecting and managing our resources - it is not perfect, but is the guarantee of the future.

You need a good process to get good substance. To do it right you need a broad-based collaborative model where everyone is a stakeholder. It needs to be very public. Bring in the experts, both local and non-local. This takes money. If you don't do it right, it will be a plan that just sits on a shelf.

One Piece of Advice Continued...

Make sure you include anybody with any interest at the table. I think the NRD has done a good job of this in the past. This means not just making information available, but including stakeholders in the actual decision-making.

Don't devalue Lincoln by saying everything has to be even. It would be wrong to say that Lincoln only gets so much compared to the rest of the District. There is more chance for commercial and industrial growth in Lincoln than in any other area of the District.

Consider uses in terms of total benefit to the population and not in terms of value to individual segments of society. Ask where is the greatest benefit to everyone rather than looking only at the value to a smaller group of people.

Transparency -- Keep the communication open. A lot of people think the supply is unlimited and this is not the case.

