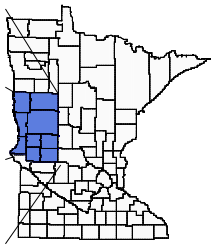
INFRASTRUCTURE STUDY

for West Central Minnesota Communities



Presented by

WEST CENTRAL INITIATIVE

January 2003

Infrastructure Study

Presented by West Central Initiative

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EXECUTIVE SUMMARY

Communities in west central Minnesota are facing an $813.5 million crisis that will impact their future. Their most basic types of infrastructure are failing, and the resources currently available to address the situation are inadequate. With many systems built in the 1930's that had an estimated design life of approximately 50 years, communities are living on borrowed time.

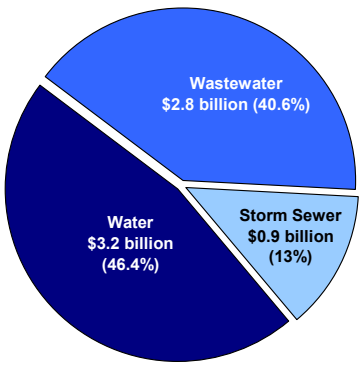
Many of the things we take for granted in our communities, such as running water and efficient wastewater systems, are critical to the future growth and sustainability of communities. Until there is a problem, these systems are easy to ignore; they are out of sight, and often out of mind. If individual communities ignore their infrastructure, it is easy to see why no governmental agency or organization gathers or maintains data about the collective infrastructure needs of communities.

When their infrastructure fails, communities look for financing to repair, upgrade or replace it. If they are unable to fund the projects themselves, communities seek financial assistance in the form of grants and loans from state and federal agencies. Communities are surprised to find that state and federal funds are insufficient to pay for these projects, and this study shows that current funding levels would only meet about 0.4% of the estimated immediate need for Greater Minnesota.

The wait for financial assistance in any form can be several years. This situation exists, in part, because there is a lack of information collected about community infrastructure systems, which makes it difficult to plan for future needs. To quantify the need, West Central Initiative (WCI) commissioned a study to inventory existing municipal water, wastewater and storm sewer systems and estimate the needed maintenance, repair and replacement for the next 20 years in the incorporated cities and one sanitary district within their region. The results of this study show a substantial, immediate infrastructure need of $472 million in just nine counties of west central Minnesota. Over the next 20 years, that number nearly doubles, to $813.5 million.

There is ample evidence that this situation exists in communities throughout the state. Data from the study has been extrapolated to provide an estimate of need for all of Minnesota outside of the seven-county Minneapolis-St. Paul metro area. Total immediate statewide needs in Greater Minnesota are estimated at $6.9 billion.

Estimate of Immediate Statewide Need Breakdown By Type



The results of ignoring this situation could be disastrous:

- New homes and businesses need water and sewer, and if a community is unable to offer them, they will not be able to attract new residents or businesses.

- Many communities will have limitations placed on new development if their systems are not in compliance with state regulations.

- Without funding to fill the financing gap, households in smaller communities could face a bill up to $180 per month for water, wastewater and storm sewer systems. Utility bills that large have a huge impact on the affordability of living in those communities, and could lead to declining property values.

- These factors combined will severely hamper the ability of our communities to sustain a high quality of life and grow into stronger communities in the future.

A cooperative effort between local governments, state and federal funding agencies, regulatory agencies, and legislators will be needed to address the immediate needs and plan for the future. Actions that will lead to solutions include:

- Provide adequate funds to meet immediate needs for communities.
- Provide training to personnel at the local level.
- Consider alternative strategies for communities of various sizes.
- Set local utility rates at appropriate levels to meet current and future needs.
- Provide education for residents of communities about the costs of infrastructure.
- Provide permitting in context, utilizing cost benefit analysis.
- Provide infrastructure planning assistance for communities.

BACKGROUND AND PURPOSE

This study was commissioned by West Central Initiative (WCI) to estimate the needs for water, wastewater, and storm sewer repair and replacement in the communities within WCI's nine-county service area. The service area includes the counties of Becker, Clay, Douglas, Grant, Otter Tail, Pope, Stevens, Traverse and Wilkin, and is the area designated as Minnesota's Economic Development Region IV. This service area is referred to as "the region" throughout this report.

As WCI gathered community input prior to updating its strategic plan, common issues surfaced for many communities. Many of those issues are related to infrastructure problems that affect quality of life, hamper development, or threaten the long-term viability of the communities. As a result, West Central Initiative became concerned about the condition of existing public infrastructure and the availability of funding for repair, upgrade and replacement.

WCI learned that no regional, state, or federal source collects or maintains information on the status of community infrastructure, or the scale of the needs. This lack of quantifiable information led WCI to commission this infrastructure study to research and analyze the existing infrastructure in their service area and the ability of communities to address their infrastructure needs.

Many of the region's communities rely on infrastructure systems that were constructed during the 1930's, often as WPA projects. Today, many of these systems and facilities have outlived their design life and are in poor repair. Communities often lack the capacity to bond for the funds to repair or replace these facilities, and WCI is frequently asked to help communities find the resources to address this challenge. WCI is not able to finance these projects directly, since replacement of a single water tower or wastewater treatment plant would easily consume WCI's entire annual grant budget.

State and Federal agencies with funds to help pay for infrastructure work report that their backlog of applications is in the hundreds of millions of dollars in Minnesota. To address this issue, WCI believes that a coordinated public policy response is needed. This study is intended to provide information that may be used to inform community leaders and policy makers at the local, state and federal levels. This report provides an estimate of current and future needs in our communities.

This study has shown that there is a substantial, immediate infrastructure need in Greater Minnesota. If financial and human resources are not applied to this situation, the future of many communities in Greater Minnesota will be in jeopardy.

METHODOLOGY OVERVIEW

The study began with the development of a questionnaire regarding the age, condition, and capacity of water, wastewater, and storm sewer infrastructure. This questionnaire was distributed to a ten-community sample group and then modified, based on feedback from the sample group. The revised questionnaire was sent to the remaining 73 communities and one sanitary district, and was also reviewed with the ten community sample group to ensure data consistency.

After distribution of the questionnaire, each community was contacted and interviews were conducted with appropriate personnel. The infrastructure needs were then identified and cost estimates were prepared. Community narratives were developed for each of the participating communities to summarize infrastructure needs and estimate the ability of each community to pay for those needs. The communities were given a chance to review their narrative before it was finalized.

Infrastructure needs were categorized according to infrastructure type (water, wastewater, storm sewer) and time period (immediate, 1 to 5 years, 6 to 10 years, 11 to 15 years, and 16 to 20 years). To evaluate how infrastructure needs affect communities of different sizes, four population groups were established. These groups were selected based on patterns that emerged from the data. The population groups are:

1) 200 or fewer
2) 201 to 600
3) 601 to 3,000 and
4) More than 3,000

After categorizing the data according to population, the total cost of infrastructure need in each category was divided by the total number of people in each population group to determine the cost per capita.

Statewide population data was obtained for Greater Minnesota, excluding the seven county Minneapolis-St. Paul metro area, and grouped in the same categories as above. Those population numbers, by community size category, were then used to estimate statewide infrastructure needs by multiplying each by the associated ratio of cost per capita.

The financial needs computed throughout the study are based on current data from the communities in the region and professional cost estimates for repair, upgrade or replacement of needed infrastructure systems. These estimates are shown in 2002 dollars. For further details on the methodology and calculation methods employed for this study, please refer to the Appendices of this report.

Data collected as a part of this study was entered into a database to facilitate its analysis and future use. Ongoing use of the database will include but not be limited to: preparing special reports, facilitating future updates, adjusting conclusions for inflation, GIS mapping, and responding to inquiries from participating communities.

REPORT FORMAT

The report is divided into the following sections:

EFFECTS OF IMMEDIATE INFRASTRUCTURE NEEDS: Defines “immediate need” and describes the issues communities face when they have immediate needs.

TOTAL NEEDS: Estimates of total needs are presented for the region as a whole, first in terms of total needs over the next twenty years by time period, and second, as total needs for the next twenty years by type of infrastructure.

INFRASTRUCTURE NEEDS BY POPULATION GROUP: For each of the population groups, the estimates are first presented as an estimate of total needs by time period over the next twenty years, and second, total need by infrastructure type.

FINANCIAL IMPACTS OF INFRASTRUCTURE NEEDS: This section considers the financial impact on communities if the immediate infrastructure needs are addressed.

DATA EXTRAPOLATION TO GREATER MINNESOTA: After analyzing WCI regional data, an extrapolation of infrastructure needs across Greater Minnesota (statewide minus the seven county metro area) is presented.

LOCAL, STATE, AND FEDERAL FUNDING: A review of current local, state, and federal infrastructure funding levels was conducted and combined with information about the ability of communities to self-fund projects. This information was then used to estimate the additional funding needs.

OBSERVATIONS: This section discusses patterns that emerged from the study.

RECOMMENDATIONS: Some clear recommendations have been developed from review of the data and knowledge of existing funding availability.

ACKNOWLEDGEMENTS

EFFECTS OF IMMEDIATE INFRASTRUCTURE NEEDS

Since this study extensively discusses immediate infrastructure needs, it may be helpful to put these needs in context by looking at the resulting effects on communities and families.

As used in this study, "immediate needs" refers to infrastructure in need of immediate repair or replacement due to age, condition, capacity, safety, or permitting. Without action, this infrastructure will continue to age and deteriorate while trying to support the demands of growth and tightening regulations. As this immediate crisis is put off, more and more infrastructure will reach the end of its useful life increasing the size of the problems faced by communities and the cost of repair or replacement.

Immediate needs threaten viability, hamper development, impact public safety, and affect quality of life of communities in the region. Some of the more severe consequences of immediate needs include:

Water:

- Inadequately treated drinking water that threatens human health resulting in a state mandated boil order or the need to use bottled water.
- Water shortages due to lack of treatment or storage capacity, resulting in restrictions on water use and limiting residential, commercial, and industrial growth.
- Inadequate water supply for fire protection.

Wastewater:

- Inoperable systems that become overloaded and back up into homes and businesses.
- Water pollution and environmental damage as wastewater is discharged into lakes and streams with little or no treatment.
- State imposed moratoria on new wastewater hook-ups putting a halt to residential and economic development.

Storm Sewer:

- Flooding of homes and businesses.

The long-term effects of failing to meet these needs may include:

- Declining property values in affected communities,
- Degradation of the natural environment,
- Migration from and eventual abandonment of otherwise viable communities, and
- Increased growth pressure and congestion in regional centers and metropolitan areas.

TOTAL NEEDS FOR THE REGION

Infrastructure information was gathered from 82 of the region's 83 incorporated cities and one sanitary district. The total estimated need for the next 20 years is $813.5 million. This estimate is broken down into immediate needs and needs for each of the following time increments: years one to five, years six to ten, years 11 to 15, and years 16 to 20. Figure 1 shows the estimated needs per time period and Figure 2 shows the estimated need by infrastructure type for the next 20 years.

Figure 1

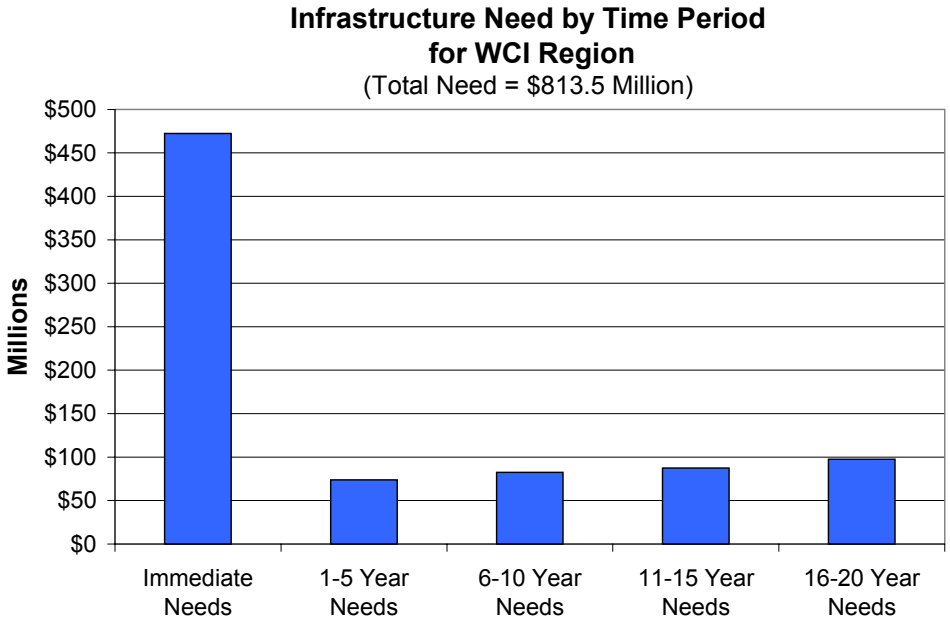
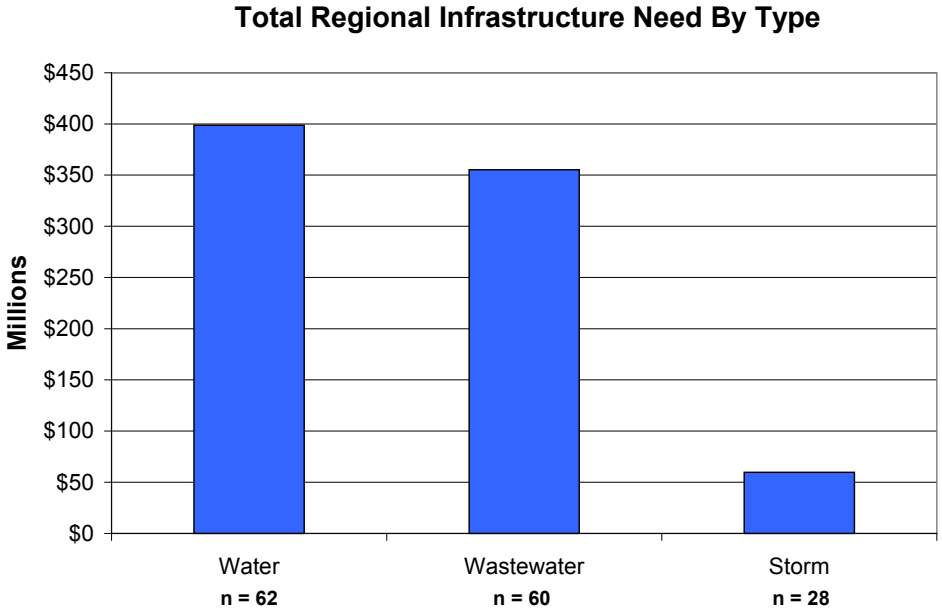


Figure 2



The distribution of immediate infrastructure needs mirrors the distribution of total needs in the region. Water system needs tend to be the most expensive due to the high cost of replacing water towers, many of which were built in the 1930's as WPA projects. New drinking water standards are also forcing communities with otherwise functional systems to add more advanced treatment systems.

Wastewater system needs are also very costly to address. Increasingly stringent pollution regulations and the policy of the state that requires even the smallest communities meet the same effluent standards that apply to Minneapolis or St. Paul, drive up the relative cost of smaller systems.

Storm sewer needs are the smallest part of the mix and generally reflect only situations with significant needs, such as preventing flooding of homes and businesses caused by inadequate drainage.

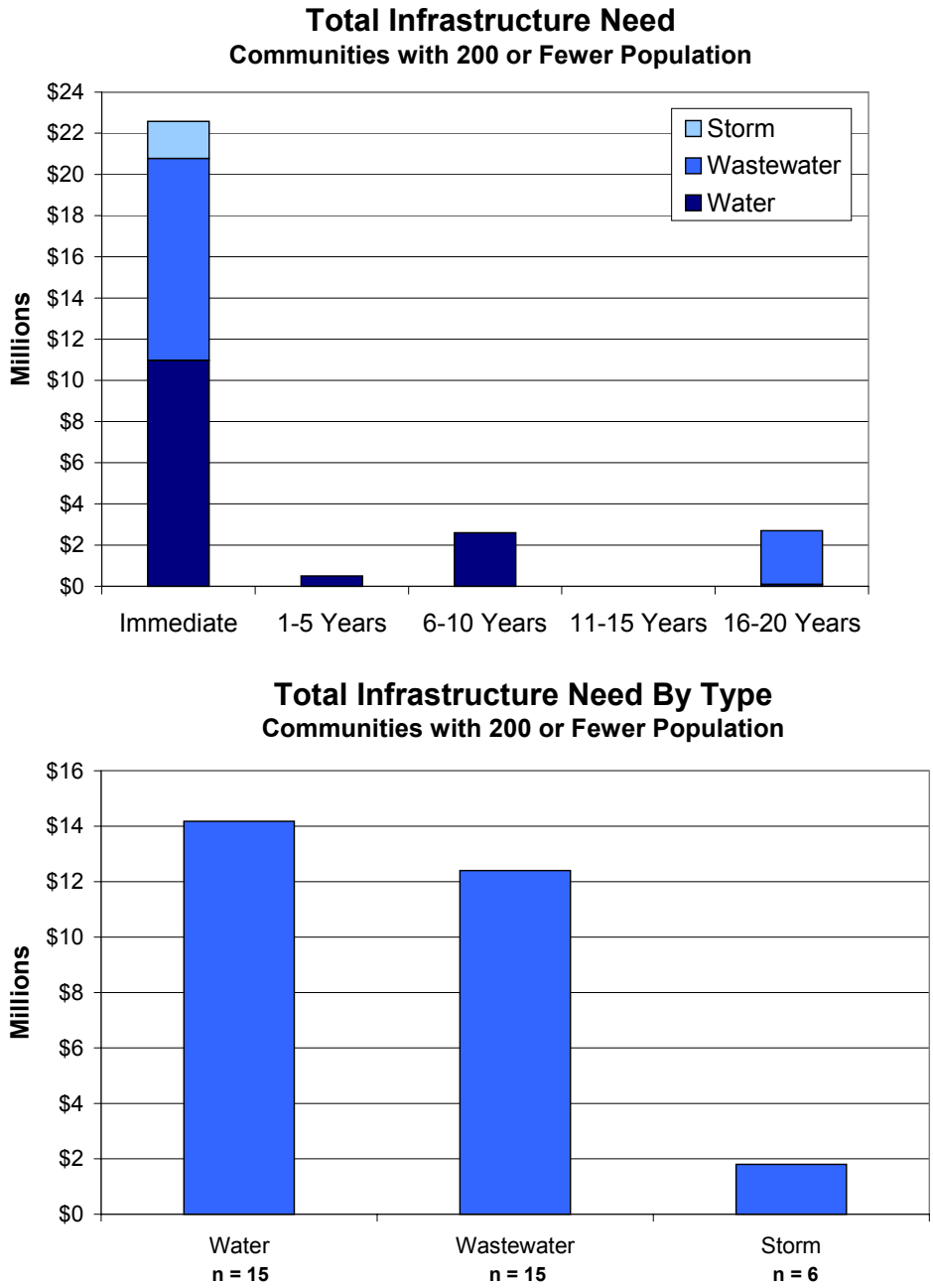
Table 1 quantifies the immediate needs by infrastructure type in the region.

Table1: Immediate Infrastructure Needs in WCI's Region	
Water Systems	$236,600,000
Wastewater Systems	$195,500,000
Storm Sewer Systems	$39,900,000

INFRASTRUCTURE NEEDS BY POPULATION GROUP: 200 OR FEWER

WCI's region has 28 communities with populations of 200 or less. Those communities have an average of 41 households and median household incomes (MHI) averaging $29,877. Figure 3, below, shows total needs for all 28 communities with populations of 200 or fewer for each infrastructure type and time period. The total infrastructure need by type for the next 20 years is shown in Figure 4. The value of "n" under each column signifies the number of communities with identified needs for that type of infrastructure.

Figure 3



INFRASTRUCTURE NEEDS BY POPULATION GROUP: 201 TO 600

The 201 to 600 population group consists of 29 communities with an average of 145 households, and median household incomes (MHI) averaging $31,600. Figure 5 shows total needs for this population group by infrastructure type and time period. The total infrastructure need by type for the next 20 years is shown in Figure 6. The value of "n" under each column signifies the number of communities with identified needs for that type of infrastructure.

Figure 5

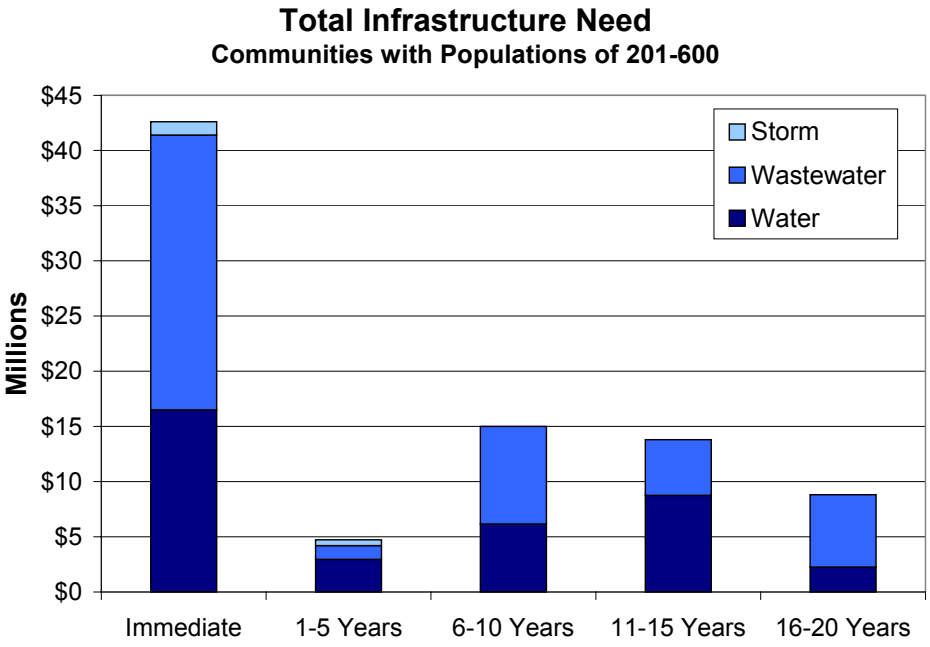
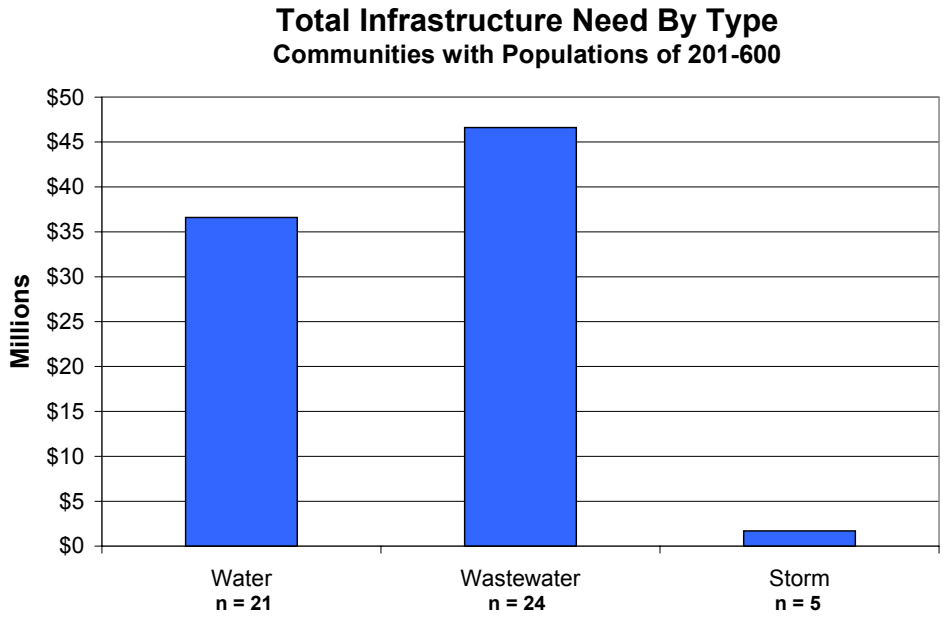


Figure 6



INFRASTRUCTURE NEEDS BY POPULATION GROUP: 601 T0 3,000

The 601 to 3,000 population group consists of 19 communities with an average of 572 households and median household incomes (MHI) averaging $30,090. Figure 7 shows total needs for this population group by infrastructure type and time period. The total infrastructure need by type for the next 20 years is shown in Figure 8. The value of "n" under each column signifies the number of communities with identified needs for that type of infrastructure.

Figure 7

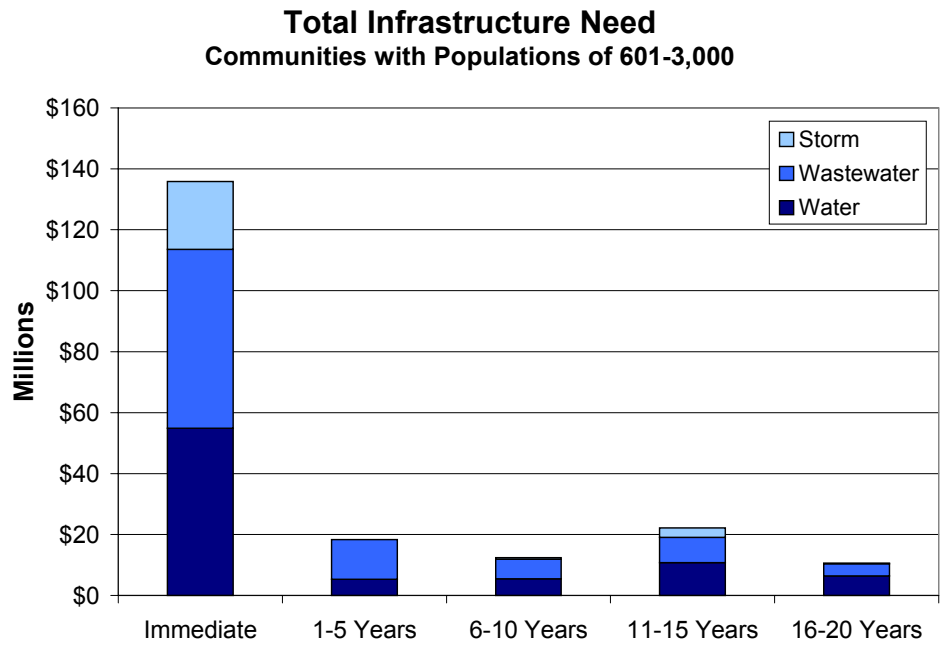
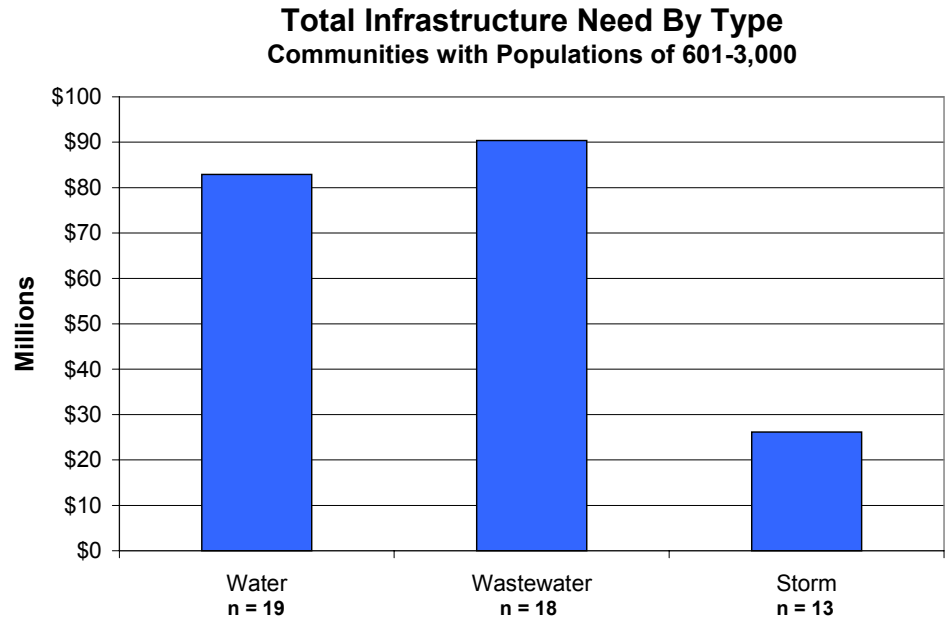


Figure 8



INFRASTRUCTURE NEEDS BY POPULATION GROUP: MORE THAN 3,000

The communities with more than 3,000 in population consist of eight cities and one sanitary district. The cities have an average of 4,648 households and median household incomes (MHI) averaging $31,576. Figure 9 shows total needs for this population group by infrastructure type and time period. The total infrastructure need by type for the next 20 years is shown in Figure 10. The value of "n" under each column signifies the number of communities with identified needs for that type of infrastructure.

Figure 9

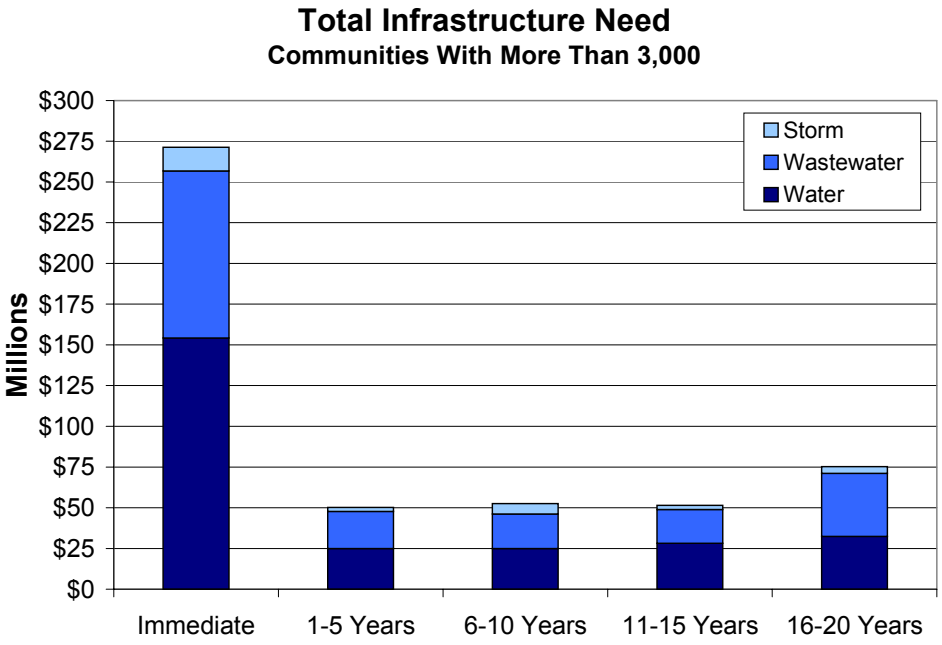
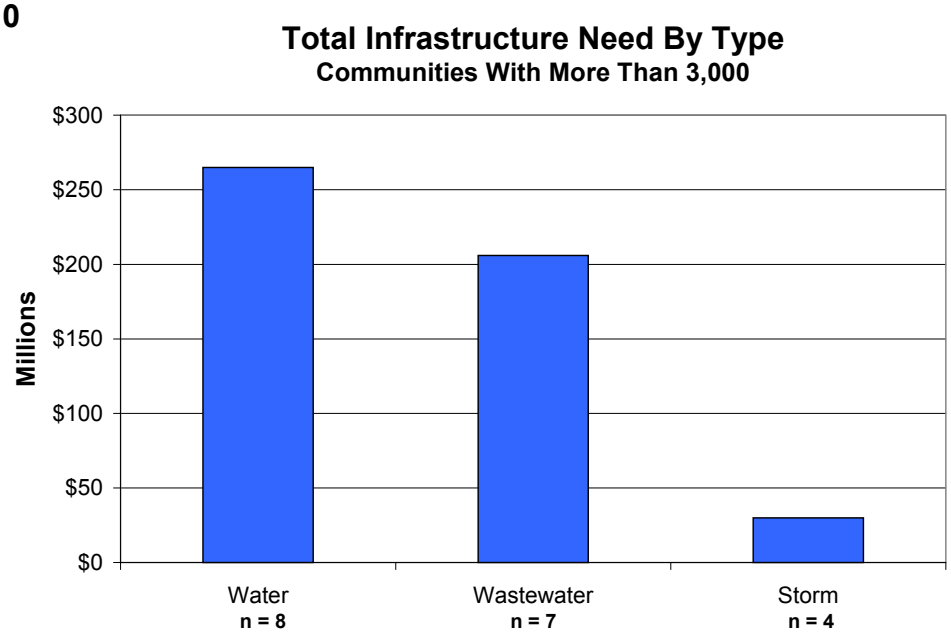


Figure 10



FINANCIAL IMPACTS OF INFRASTRUCTURE NEEDS

Figures 11 and 12 show how infrastructure needs may affect the four population groups. Figure 11 shows the needs per capita for each of the population groups and Figure 12 shows projected monthly utility rates in communities if immediate infrastructure needs are addressed without any financial subsidies.

Figure 11

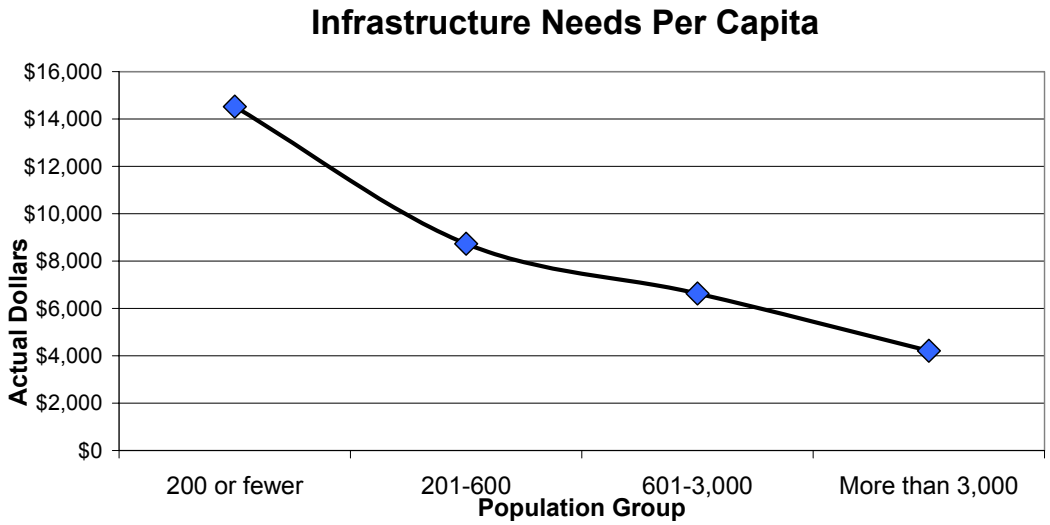
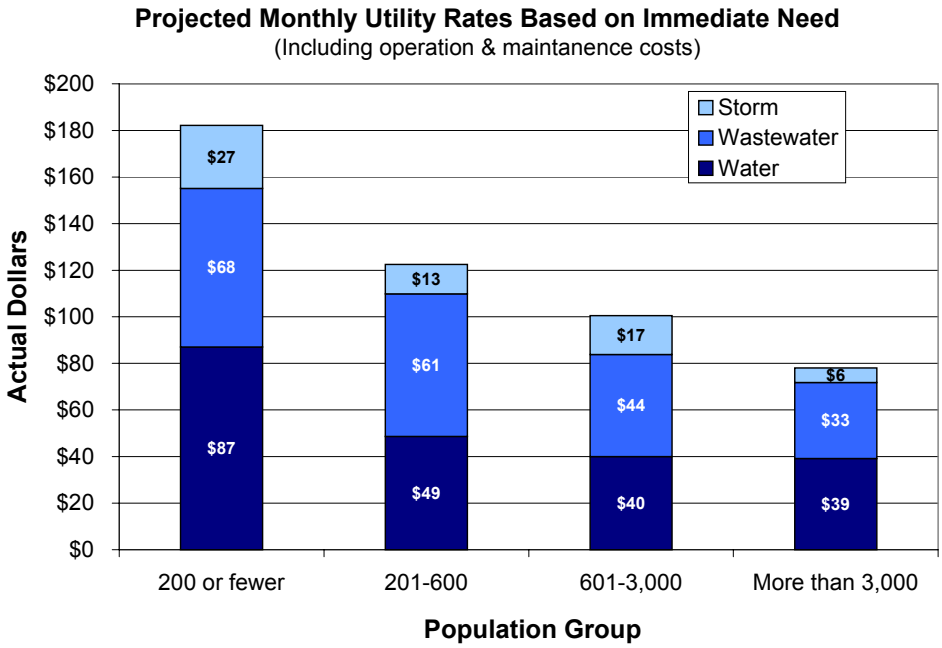


Figure 12



DATA EXTRAPOLATION TO GREATER MINNESOTA

Extrapolation of WCI regional data to Greater Minnesota is based upon needs per capita by population group. The need per capita is multiplied by the number of people in each population group across Greater Minnesota. Figure 13 shows the results of this extrapolation, a total of $6.9 billion. Figure 14 shows immediate statewide needs by type of infrastructure. For more details on the calculation, refer to Appendix A.

Figure 13

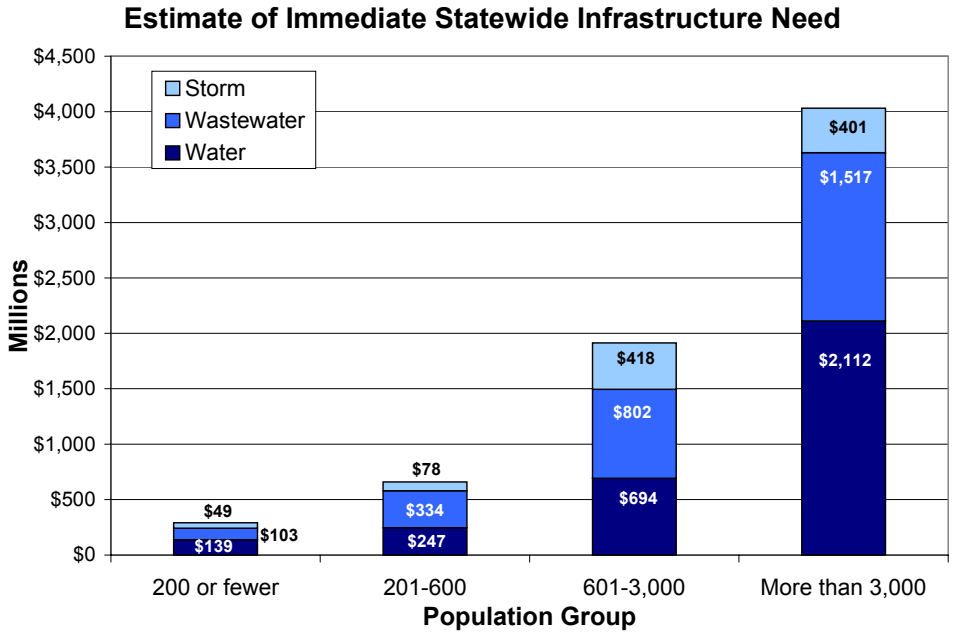
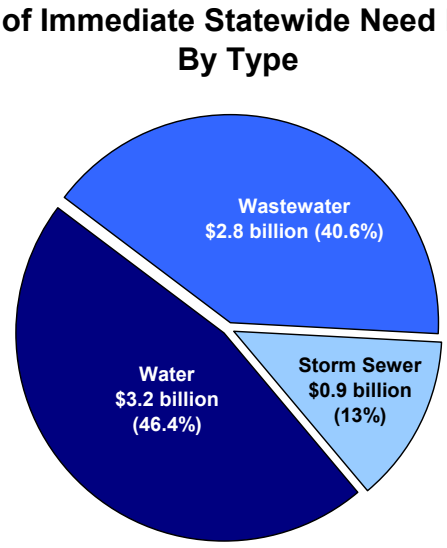
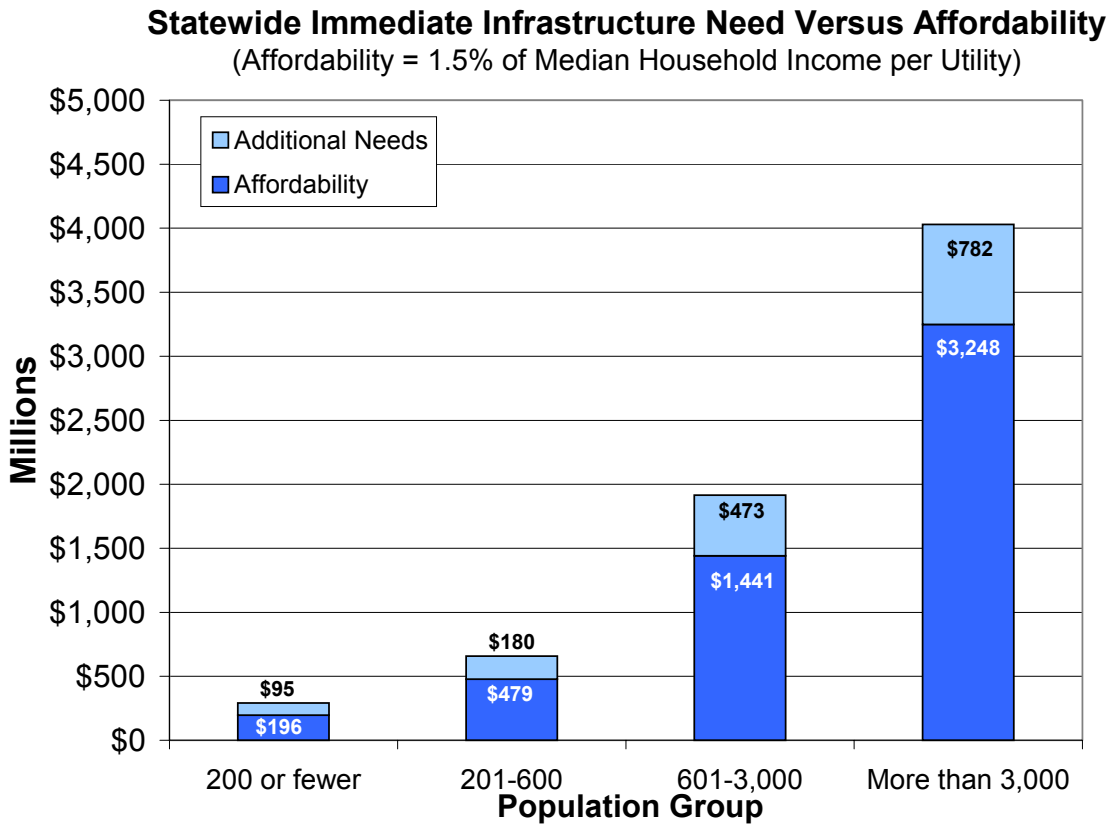


Figure 14



The generally accepted standard for the ability of communities to afford infrastructure is based upon a monthly utility bill equal to 1.5% of the median household income for the community for each type of infrastructure (water, wastewater, and storm sewer). Any needs over these amounts are considered to be "additional needs." Figure 15 shows the results of this analysis.

Figure 15

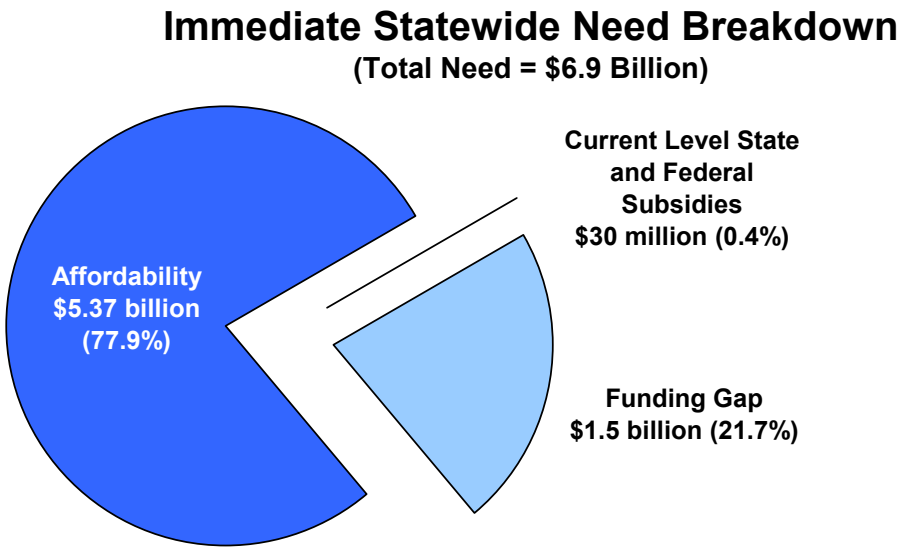


It is important to consider the extent to which current levels of local, state, and federal infrastructure funding can meet the needs of our communities. Historically, a typical annual allotment of state and federal subsidies is $30 million. To calculate the estimated needs that are considered "not affordable" and are not currently covered by typical state and federal subsidies, the following equation is used and shown in Figure 16. The Funding Gap is calculated to be $1.5 billion.

$$TIN - CA - CSFS = \text{Funding Gap}$$

Where TIN = Total Infrastructure Needs, CA = Community Affordability, and CSFS = Current State and Federal Subsidies.

Figure 16



OBSERVATIONS

West central Minnesota is poised for infrastructure challenges that threaten the viability of its communities. With extrapolation of data to estimate needs across the state, the issue applies to all of Greater Minnesota. Communities are feeling the pressure of aging infrastructure, tightening environmental regulations, limited local revenue, and not enough state and federal funding to make up the difference.

In the region, this Infrastructure Study has identified $813.5 million of total infrastructure needs over the next twenty years, with more than half of that total being identified as immediate needs. The other half is spread fairly evenly over the remaining twenty-year period. This data also indicates that there is a large, immediate infrastructure need that, if not addressed, will continue to grow.

Based on the patterns that emerged from the data, communities of various sizes face different challenges. Communities of 200 or fewer in population often struggle for viability and may lack the human and/or financial resources to operate and maintain public infrastructure. Infrastructure needs per capita in these communities can exceed $14,000. Self-financing infrastructure repair, upgrade or replacement in these communities would result in total household utility rates of approximately $180 per month, causing these communities to be reliant on state and federal subsidies for utility improvements.

Communities with 201 to 600 residents typically have public infrastructure, yet the required maintenance and improvements place a financial and administrative burden on the community. This, too, causes reliance on state and federal subsidies to offset the costs of infrastructure improvements. The infrastructure needs per capita are over $8,000 with total household utility rates of $120 per month necessary to self-finance these needs. These communities are generally maintaining their viability, but may have difficulty attracting residential or commercial development due to inadequate infrastructure.

Communities with populations of 601 to 3,000 have public infrastructure and generally have enough personnel to operate and maintain the infrastructure. These communities are dealing with aging infrastructure and development pressure, but typically have a large enough user base to self-finance a majority of their infrastructure needs. These communities have infrastructure needs per capita of just over $6,000 with total household utility rates of approximately $100 necessary to self-finance those needs.

Communities with populations of more than 3,000 typically have the ability to self-finance a larger proportion of infrastructure needs and the managerial capacity to address infrastructure maintenance and improvements. The infrastructure needs per capita exceed $4,000 with total household utility rates of approximately $80 necessary to self-finance these needs.

During the course of this study, the need for infrastructure in developing lake areas was also identified. These additional needs were not included in the study and are not included in any of the estimates. This need is focused primarily in the counties of Becker, Douglas, Otter Tail, and Pope. The lakes in these counties are fueling growth that is primarily located in a rural setting. This poses new challenges for townships and counties, since they are not accustomed to considering wastewater and drinking water infrastructure needs. Projects to extend public infrastructure to lake areas are costly since there can be long distances between developed areas. In addition, these projects are typically not a priority for funding agencies due to the high median household income in these lake areas. This leaves township and county governments with the challenge of protecting valuable lake resources without sufficient financial and administrative resources.

RECOMMENDATIONS

This challenge will require the cooperation of local governments, state and federal funding agencies, regulatory agencies, and legislators to address immediate needs and plan for the future. Some recommendations that could help accomplish this include:

- Provide adequate funds to meet immediate needs: State and federal governments could provide funding to address immediate needs. Before communities can move into a proactive planning mode, their immediate concerns must be resolved. The backlog of requests with state and federal agencies needs to be funded.

- Provide training to personnel: In conjunction with the preceding recommendation, provide training for city staff and personnel in the areas of planning, record keeping, and maintenance techniques for infrastructure. Increasing the proficiency of personnel could help prevent an infrastructure crisis in the future.

- Consider alternative strategies: Consider alternative management strategies for small communities. These communities typically do not have the financial and human resources to maintain their infrastructure. Some suggestions include formation of public utility maintenance cooperatives, outsourcing the work to private operations and maintenance firms, or sharing resources among communities.

- Set utility rates at appropriate levels: Rates of $30 to $50 per month per utility will be necessary to pay for immediate needs, proper maintenance, and future replacement. These estimates assume that government subsidies will be available to address immediate needs. Without government subsidies, the rate would have to be much higher. Once these rates are set, they need to be reviewed and increased regularly to account for inflation and other factors. If adequate funds are allocated to address the immediate needs, and communities are charging an appropriate rate for utilities, grant requests from communities should decline over time. However, there will continue to be loan requests for infrastructure.

- Provide education for communities: Provide education so residents of communities understand and accept responsibility for the current infrastructure situation. Few residents are aware of the true cost of repair, upgrade and replacement of their community infrastructure.

- Provide permitting in context: Regulatory agencies could adopt a permitting and enforcement approach that weighs the cost of systems and the potential environmental impact, especially for communities with populations of fewer than 600. Placing the same standards on these communities that metropolitan communities must meet is very costly on a per capita basis, and results in

minimal environmental gains. Being held to these standards is a disincentive for communities to do anything about their infrastructure.

- Provide planning assistance: Communities of all sizes, especially the smaller ones, need financial assistance to help with capital improvement planning. Many of these communities do not have a capital improvement plan in place to address their future infrastructure needs. With sufficient planning, cities would have justification to incrementally increase their utility rates over time to build reserves, so they are not forced to implement large rate increases when a major infrastructure project is needed.

ACKNOWLEDGEMENTS

West Central Initiative would like to thank the communities for participating and working in cooperation with Widseth Smith Nolting staff to compile the data for this study. This work took valuable community personnel time and would not have been possible without your investment.

WCI would like to thank the Economic Development Administration for its financial support of this study. Their support helped make this study more comprehensive, complete, and therefore, much more useful.

As stakeholders in infrastructure issues, WCI also would like to thank USDA – Rural Development, the Minnesota Department of Trade and Economic Development, Minnesota Rural Water, Midwest Assistance Program, the Minnesota Pollution Control Agency, and the Minnesota Department of Health. Each of these organizations provided invaluable guidance.

West Central Initiative would also like to thank Widseth Smith Nolting for their hard work and dedication in collaborating with all of the communities and other organizations to complete this study.

West Central Initiative (WCI) is a regional foundation in west central Minnesota serving the counties of Becker, Clay, Douglas, Grant, Otter Tail, Pope, Stevens, Traverse and Wilkin.

APPENDIX A:
METHODOLOGY

METHODOLOGY

Data Gathering

Part I – Ten Community Sample Group

- Identified a ten community sample group.
- Formulated an infrastructure questionnaire addressing age, condition, capacity, and adequacy of existing water, wastewater, and storm sewer infrastructure, financial and managerial capacity.
- Conducted city staff interviews to review questionnaire.
- Prepared cost estimates based on questionnaire and interviews
- Prepared community infrastructure profiles (example attached as Appendix C.) Profiles included questionnaire results, associated costs, and a narrative describing the findings.

Part II – Gathering the Remaining Data

- Modified the questionnaire based on feedback from the ten community sample group. (Final questionnaire attached as Appendix C.)
- Sent revised questionnaire to remaining communities.
- Updated results from the ten community sample group to reflect changes in questionnaire.

Part III – Data Entry

- Entered data collected from Parts I and II into a database for analysis.

Data Analysis

Data Categorizing

- Analyzed data according to the following subsets of water, wastewater, and storm sewer systems.
    - Water - supply, treatment, storage, and distribution systems.
    - Wastewater - Collection and pumping, treatment, discharge, and sludge disposal systems.
    - Storm Sewer - Collection, pumping, and treatment systems.
- Developed a “Hot-list” category that identifies infrastructure needs related to public safety, permitting, condition, and capacity.
- Assumed design life to be 50 years for underground infrastructure. Other infrastructure needs are identified based on condition, capacity, and the level of maintenance. Regulatory agency feedback was also considered in the analysis of the infrastructure.
- Established four population groups, in order to determine how infrastructure needs affect communities of different sizes: 200 or fewer, 201 to 600, 601 to 3,000, and more than 3,000.
- Categorized needs into five time periods; 1) immediate, 2) 1 to 5 years, 3) 6 to 10 years, 4) 11 to 15 years, and 5) 16 to 20 years.

- Gathered demographic data used in the analysis based on the 2000 census. The Alexandria Lake Area Sanitary District (ALASD) does not have Median Household Income (MHI) data available so the MHI from the City of Alexandria was used.
- Estimated a community's utility user base with the use of an Equivalent Dwelling Unit (EDU). One EDU is the equivalent of one residential household utility use. For the purposes of this study, total commercial usage in a community = 0.25 * Household EDU.

Cost Estimating

- Estimated cost to address infrastructure needs, after those needs were identified. Cost estimates include materials, construction, administration, engineering, and financing. Consideration is given to the size of community and type of technology that is appropriate for that community.

Data Analysis

- Analyzed data according to the population groups and over the time periods discussed above.
- Calculated total needs for the entire WCI region, each population group and time period.
- Analyzed how infrastructure needs impact different community sizes, based on infrastructure needs per capita and the impact on utility rates of addressing the needs. Projected monthly utility rates address immediate needs only and assume that all infrastructure needs are paid by local funds. Communities without identified immediate needs are removed from the projected impact on utility rates calculations but are included in the infrastructure needs per capita calculation.
- Assumed operations and maintenance costs of $180/EDU/year for water and wastewater and $2/EDU/year for storm sewer.
- Extrapolated data to Greater Minnesota based on infrastructure need per capita from the WCI region multiplied by the population in Greater Minnesota for each population group. Extrapolated data in the report only reflects immediate needs.
- Based the ability of communities to afford infrastructure improvements on 1.5% of the Median Household Income for each utility. This is the same criterion that is used by the United States Department of Agriculture – Rural Development.
- Assumed the terms of the financing to pay for these improvements to be 30 years with an interest rate of 5%.

Financial Capacity

- Ranked each community's financial capacity based on financial data collected from the questionnaire. A community's financial capacity is ranked based on the range of:
    - Ranking (1-5)
      1 - Revenues support O&M and infrastructure needs
      5 - Revenues do not support O&M and infrastructure needs

Adequacy of Records

- Ranked each community's adequacy of infrastructure records (maps, maintenance records, etc.), based on data collected from the questionnaire. Adequacy of infrastructure records is ranked based on the following range:
    - Ranking (1-5)
      1 - Up to date records
      5 - No records

APPENDIX B:
SAMPLE COMMUNITY INFRASTRUCTURE PROFILE

INFRASTRUCTURE NEEDS STUDY

COMMUNITY INFRASTRUCTURE PROFILE
AnyTown

WASTEWATER

Wastewater Collection

The wastewater collection system experiences clear water inflow and infiltration into the collection system. The wastewater collection infrastructure need is to replace the main that exceeds 50 years old. This is estimated to cost $3,000,000 and the need is identified as immediate. The collection system replacement is considered a hot-list item.

Wastewater Treatment

The city's wastewater stabilization ponds were constructed in 1989 and operate satisfactorily except during high inflow and infiltration periods. If the collection system needs are addressed, the treatment system should provide adequate service for the 20-year planning period so there are no identified wastewater treatment infrastructure needs.

WATER

Water Supply

The city utilizes three wells for water supply. These wells provide water of adequate capacity and quality. There are no identified water supply infrastructure needs.

Water Treatment

The city recently constructed a new water treatment plant. There are no identified water treatment infrastructure needs.

Water Storage

The city currently has two water storage tanks. This storage provides adequate water storage capacity. There are no identified water storage needs.

Water Distribution

The water distribution system was recently upgraded so there are no identified water distribution infrastructure needs.

STORM SEWER

There is storm sewer throughout the city that has exceeded its 50-year design life. The estimated cost of replacement is $1,000,000 and the need is identified as immediate.

ADEQUACY OF RECORDS

The city has current watermain maps due to the recent upgrades. The sanitary sewer collection system does not have current maps.

FINANCIAL CAPACITY

Water and wastewater rates cover operations and maintenance costs but not replacement costs. The city will need to raise rates or rely on government subsidies to address the identified infrastructure needs.

APPENDIX C: QUESTIONNAIRE

WEST CENTRAL INITIATIVE QUESTIONNAIRE

WATER SECTION

City

Does your community have individual wells, city wells or both?

Is your drinking water supply source surface or ground water?

SECTION 1 – City Wells

How many city wells does your community have?

What are the Unique Well Numbers

What year were the wells installed

Do you have wellhead protection issues?

If yes, please explain:

What are your well pump flowrates (gpm)? What is your average daily water usage (gpd)

What is your peak daily water usage (gpd)?

Have either of these contaminants been found in plant effluent (or at your well, if no treatment) exceeding secondary standards (NSDWRs) (Manganese = 0.05 mg/l, Iron = 0.3 mg/l)

Maganese Iron

If unknown, then do people complain about stained fixtures in their sink, stool, etc?

Do you disinfect your water supply?

Have you had a violation of the Total Coliform Rule?

SECTION 2 – Water Treatment Plant

Does your community have a water treatment plant?

What year was your water treatment plant constructed?

What does your plant treat for (iron, manganese, softening, etc.)?

Please describe existing treatment processes:

Is there any need to expand the facility in the next 20 years?

If yes, please describe expansion plans:

Please list any major plant updates since initial construction:

Do you recycle any of your process water?

Where does this water get recycled (from and to)?

If you have a watermain map with pipe size, type, and year constructed, please have a copy of the map available at the site visit and go to Section 4 otherwise proceed to Section 3.

SECTION 3 – Distribution System

What is the total length of watermain?

What percent of your systems watermains are over 50 years old?

What percent of your systems watermains are between 30-50 years old?

What percent of your systems watermains are less than 30 years old?

SECTION 4 – General

Are your water services metered?

What year were your meters installed?

Does your community have a ISO Report (fire flow protection)?

If no, please identify acres with low fire flows (i.e. insufficient number of operable hydrants):

SECTION 5 – Water Storage

Does the city have elevated storage tank, ground storage tanks, or both

How many total tanks?

What year were the tanks installed

What is each individual design capacity

Have there been any major updates since initial construction?

END OF WATER SECTION

WEST CENTRAL INITIATIVE QUESTIONNAIRE

WASTEWATER SECTION

City

Does your community have ISTS, a central collection system, or both?

If applicable, please estimate the percent of noncompliance ISTS in your community

If you have a sanitary sewer map with pipe size, type, and year constructed, please have a copy of the map available at the site visit and go to Section 2 otherwise proceed to the next set.

What is the total length of your gravity sanitary sewer?

What percent of your gravity sewer is over 50 years old?

What percent of your gravity sewer is between 30-50 years old?

What percent of your gravity sewer is less than 30 years old?

What is the total length of your forcemain?

What percent of forcemain is over 50 years old?

What percent of forcemain is between 30-50 years old?

What percent of forcemain is less than 30 years old?

SECTION 2 - General

How many lift stations does your system contain? How many need replacement?

Does the collection system have infiltration/inflow problem?

If yes, please explain the problem?

What kind of wastewater treatment system do you have?

SECTION 3 – Mechanical Wastewater Treatment Plant

What year was the wastewater treatment plant constructed?

What is the plant capacity (gpd)?

Describe the existing plant process

Please list any updates since initial construction and year

What is your average wet weather flow (30 day)?

What is your average wet weather design capacity (gpd)?

Does the facility continuously meet NPDES permit requirements?

If no, please explain:

Do any of the treatment processes need replacement?

If yes, please describe which processes and why?

Does the system have at least 6 months of biosolids storage?

Have any site complaints been received regarding biosolids?

Are biosolids spread on frozen or snow covered ground?

Are pathogen reduction to a minimum of Class B standards met?

By what method?

Are vector attraction reduction requirements met?

By what method are they met?

Will there be a need for plant expansion in the next 20 years?

If yes, please describe expansion plans:

SECTION 4 – Wastewater Ponds

What is the average wet weather flow (180 day or 210 day if applicable)?

What is the average wet weather design capacity (gpd)?

How many ponds?

What is the total size of the ponds (acres)?

What are the individual sizes?

What year were the ponds constructed?

Do the ponds continuously meet NPDES permit requirements?
If no, please explain why

Will there be a need for treatment expansion in the next 20 years?
If yes, please explain why

What type of liner is used for the ponds (none, clay, synthetic, other)?

What are the treatment disposal systems (ie Surface discharge, RI, irrigation, etc.

How old are the disposal systems?

Are you aware of any replacement needs within the systems?
Please describe replacement needs

SECTION 5 – Other System

Please describe your treatment system if it isn't mechanical or ponds?

SECTION 6 – Effluent Limits

Have MPCA effluent limits been exceeded for BOD?

Have MPCA effluent limits been exceeded for TSS?

Have MPCA effluent limits been exceeded for Phosphorus?

Have MPCA effluent limits been exceeded for Ammonia?

Have MPCA effluent limits been exceeded for Fecal Coliform?

END OF WASTEWATER SECTION

WEST CENTRAL INITIATIVE QUESTIONNAIRE

STORM SEWER SECTION

City

If you have a storm sewer map with pipe size, type, and year constructed, please have a copy of the map available for our site visit and go to Section 2 otherwise proceed to Section 1.

SECTION 1

What is the total length of storm sewer?

What percent of your systems storm sewer are over 50 years old?

What percent of your systems storm sewer are between 30-50 yrs?

What percent of your systems storm sewer are less than 30 years?

SECTION 2

Please describe flooding problems:

Do any of the water quality ponds need improvement?

If yes, what improvements are needed?

If applicable, how many of the storm sewer pump stations need replacement?

Are there any plans to implement water pump stations?

Describe these plans:

END OF STORM SEWER SECTION

WEST CENTRAL INITIATIVE QUESTIONNAIRE

FINANCIAL SECTION

City

SECTION 1 - General

What % increase in commercial expansion do you expect to see in your community in the next 20 years?

What % increase in residential expansion do you expect to see in your community in the next 20 years?

How many residential water users in your community?

How many commercial water users in your community?

How many residential wastewater users in your community?

How many commercial wastewater users in your community?

SECTION 2 - Water

Please describe your communities water rate system:

What is your 2002 water system revenue budget?

What is your 2002 water system operation/maintenance budget?

Do present rates cover water operation and maintenance cost?

Do present rates cover water replacement costs?

SECTION 3 - Wastewater

Please describe your communities wastewater rate system:

What is the 2002 wastewater system operation and maintenance budget?

What is the 2002 wastewater system revenue budget?

Do present rates cover the wastewater operation and maintenance costs?

Do present rates cover the wastewater replacement costs?

SECTION 4 – Storm Sewer

Please explain how your community pays for storm sewer operation and maintenance costs?

What is the 2002 storm system operation and maintenance budget?

What is the 2002 storm system revenue budget?

Do present rates cover the storms ewer operation and maintenance costs?

Do present rates cover the storm sewer replacement costs?

END OF FINANCIAL SECTION

APPENDIX D:
COMMUNITY INFRASTRUCTURE NEEDS SUMMARY

WEST CENTRAL INITIATIVE QUESTIONNAIRE

INFRASTRUCTURE NEEDS SUMMARY

City

WATER SYSTEM

Water Supply Needs

Immediate (including totals from other studies)

1-5 years

6-10 years

11-15 years

16-20 years

Water Distribution Needs

Immediate (including totals from other studies)

1-5 years

6-10 years

11-15 years

16-20 years

Water Treatment Needs

Immediate (including totals from other studies)

1-5 years

6-10 years

11-15 years

16-20 years

Water Storage Needs

Immediate (including totals from other studies)

1-5 years

6-10 years

11-15 years

16-20 years

WASTEWATER SYSTEM

Collection and Pumping System Needs

Immediate (including totals from other studies)

1-5 years

6-10 years

11-15 years

16-20 years

Treatment and Disposal Needs

Immediate (including totals from other studies)

1-5 years

6-10 years

11-15 years

16-20 years

STORM SEWER SYSTEM

Collection and Pumping System

Immediate (including totals from other studies)

1-5 years

6-10 years

11-15 years

16-20 years

Treatment Systems

Immediate (including totals from other studies)

1-5 years

6-10 years

11-15 years

16-20 years

HOT-LIST SYSTEMS AND ASSOCIATED COSTS

Wastewater ☐

Water ☐

Storm Sewer ☐

RECORDS AND FINANCE

Adequacy of Records

Financial Capacity

END OF INFRASTRUCTURE SUMMARY SECTION

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