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SCOTT WATERSHED MANAGEMENT ORGANIZATION

SCENARIO-BASED PLANNING WORKSHOP

March 27, 2017



SCOTT WATERSHED MANAGEMENT ORGANIZATION SCENARIO-BASED PLANNING WORKSHOP

Scott County, Minnesota

This report summarizes the half-day scenario planning session held in Prior Lake, Minnesota, on March 27, 2017. Approximately 26 Water and Watershed Management stakeholders and county staff participated in the workshop and developed the scenarios presented in this report. This report has been produced as part of a Scott County Environmental Services Department project, which aims to create greater understanding about the future drivers that affect future operations of the Scott Watershed Management Organization.

REPORT PREPARED BY:

future→iQ

WORKSHOP HOSTED BY:



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1.0 INTRODUCTION

The scenario planning work presented in this report was conducted as part of the planning process for updating the Scott Watershed Management Organization's (Scott WMO) Comprehensive Water Resources Management Plan. Scott County, which operates the Scott WMO, is headquartered in Shakopee, Minnesota.

The components of this planning work included pre-Think-Tank surveys, long-term Scenario Planning, and discussion about preferred futures.

- **Pre Think-Tank Surveys** – A survey was sent to invited participants of the scenario-planning workshop, and this input, along with assistance from County staff helped to create the axes of the scenario matrix and guide the workshop discussions.
- **Scott WMO Future Planning Workshop** – The scenario-based planning workshop held on March 27, 2017, provided an important opportunity to engage water and watershed management professionals in a critical dialogue about the future and changing dynamics of water and watershed management in the Scott WMO.

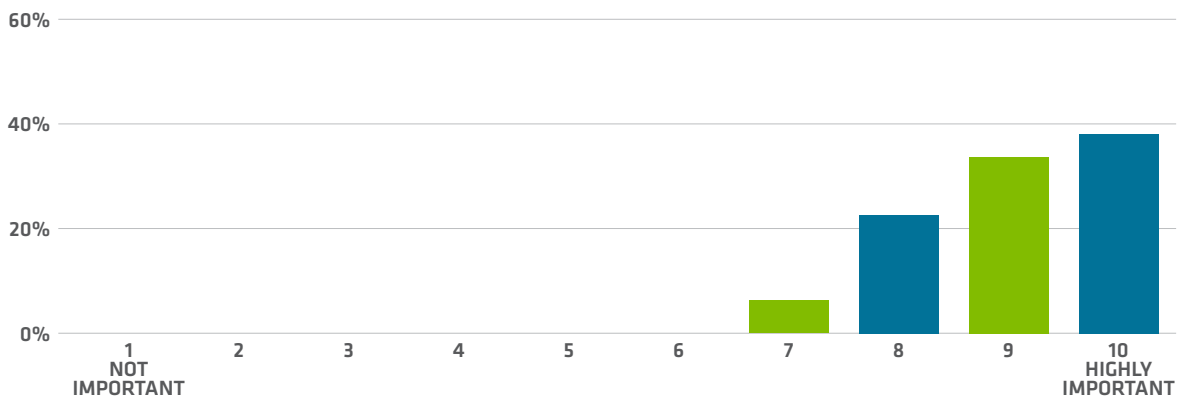




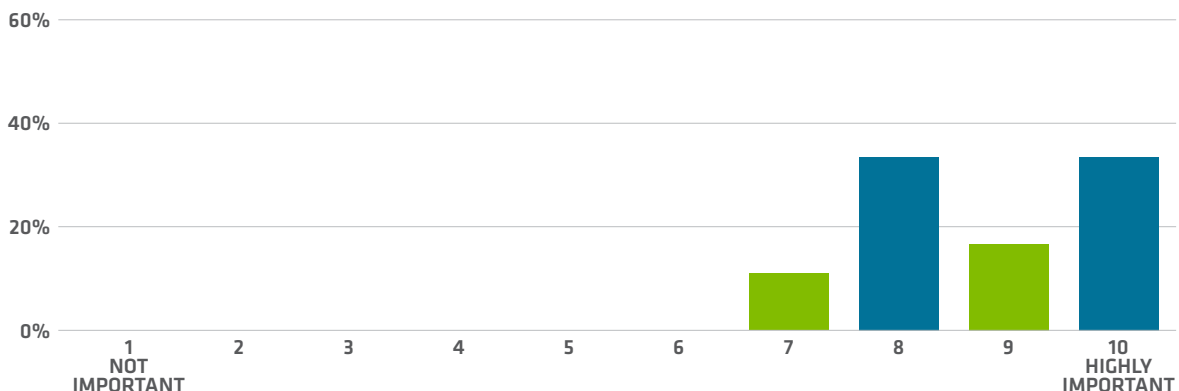
2.0 STAKEHOLDER SURVEYS

Prior to the planning workshop, surveys were conducted. Eighteen respondents participated in the survey. Workshop participants were asked about their views on having a shared vision for the future of Water and Watershed Management in the Scott WMO. The following graphs show a high level of importance placed on having a long term plan for Water and Watershed Management in the Scott WMO, and the importance of using the plan in decision-making.

How important do you think it is to have a long term plan for Watershed / Water Management in Scott WMO?

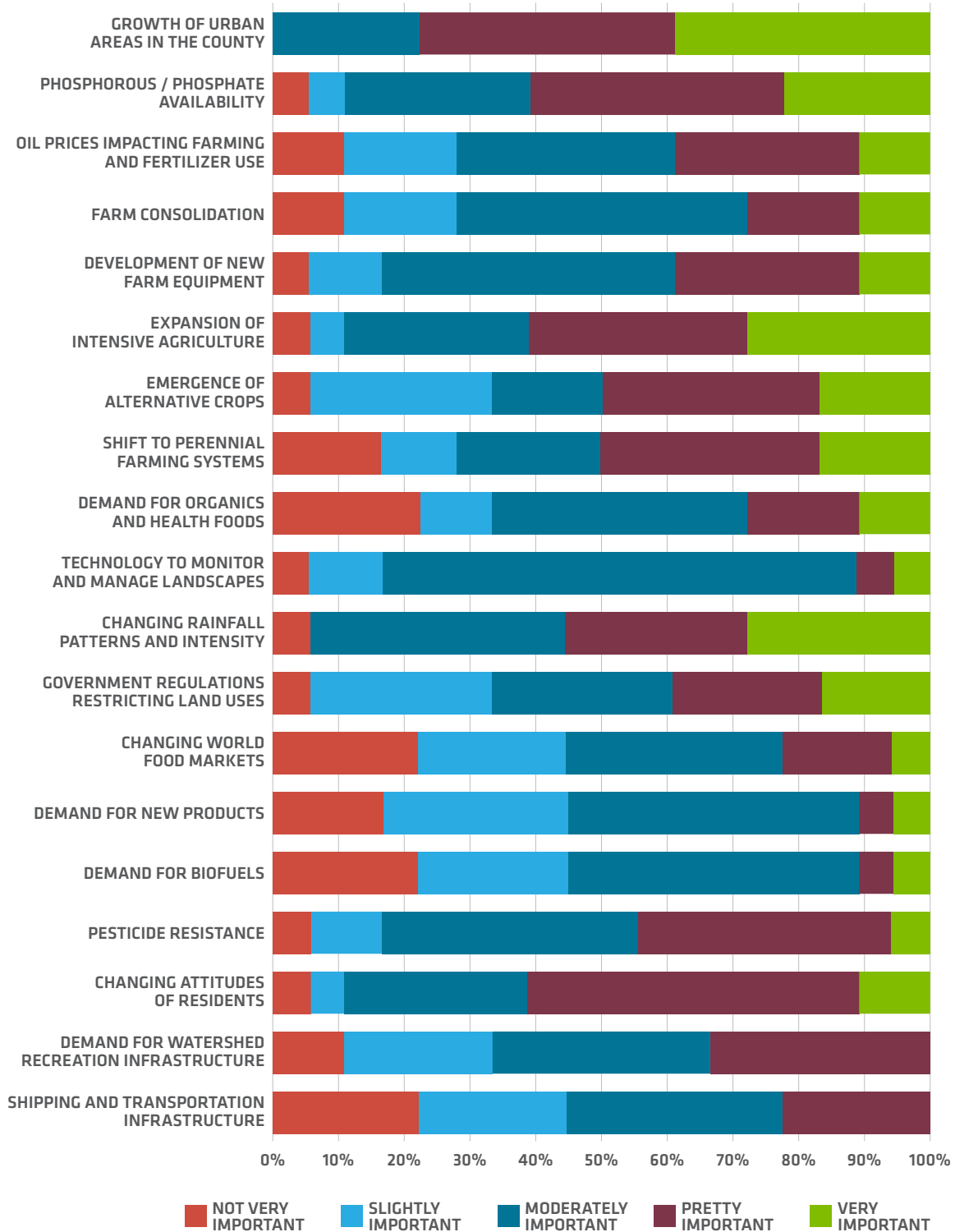


How important will a long term Watershd Management Plan be in making decisions for YOUR business or organization?



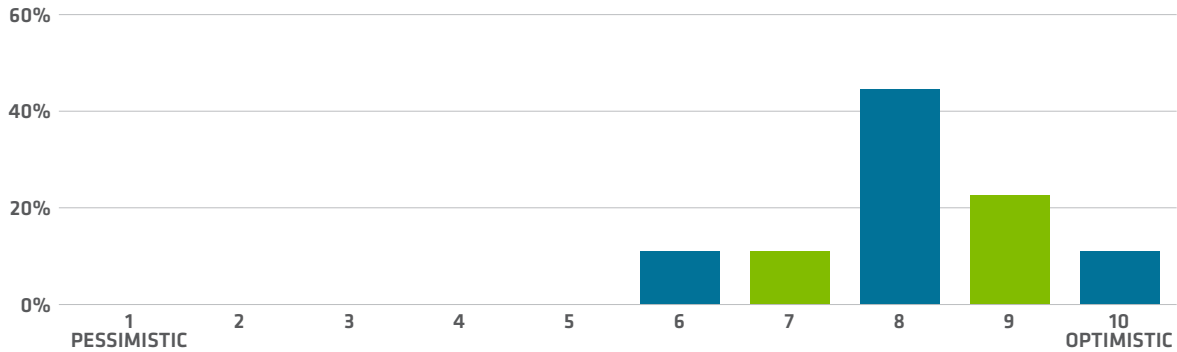
Survey respondents were requested to indicate the importance of the following 'drivers of change' as they relate to shaping Water and Watershed Management in the Scott WMO over the next five years.

For the following 'drivers of change', rate their importance for shaping Watershed / Water Management in Scott WMO over the next 5 years.



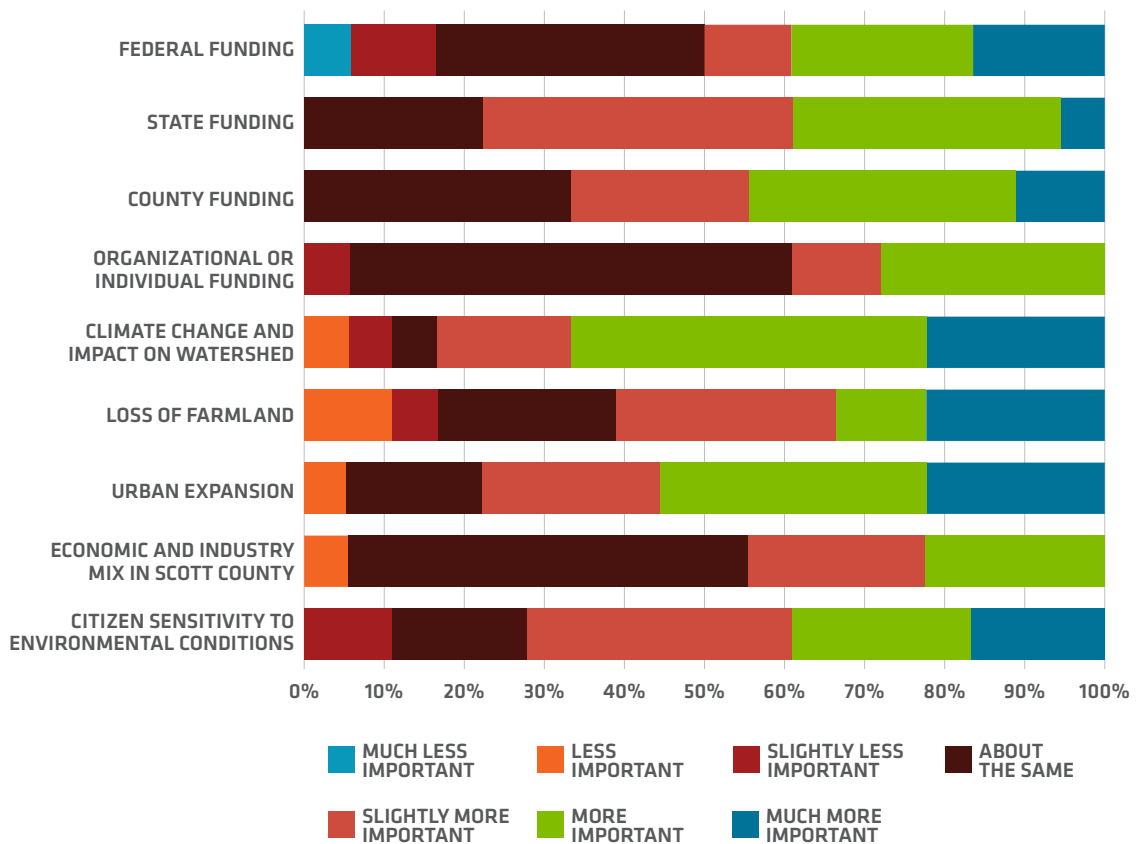
Survey respondents were asked to rate the future prospects for good Water and Watershed Management in the Scott WMO over the next 5-10 years.

How would you rate the future prospects for good Watershed / Water Management in Scott WMO over the next 5-10 years?



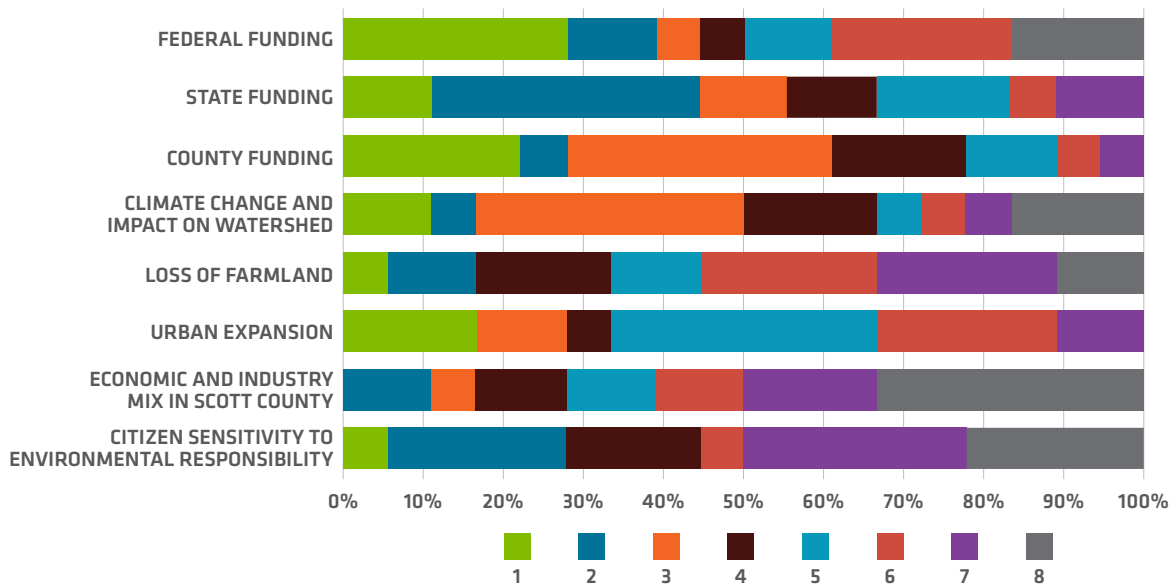
Survey respondents were asked to rate the importance of the following in terms of their impact on Water and Watershed Management in the Scott WMO over the next 10 years.

In terms of their impact on Watershed and Water Management in Scott WMO, how do you think the following will change in importance over the next 10 years?



Survey respondents were also asked to rank what they believed to be the relative importance of the following issues in terms of their impact on Water and Watershed Management in the Scott WMO over the next 10 years.

In terms of their impact on Watershed and Water Management in Scott WMO, rank what you believe will be the relative importance of these issues over the next 10 years? (1 = highest importance rank; 8 = lowest importance rank)

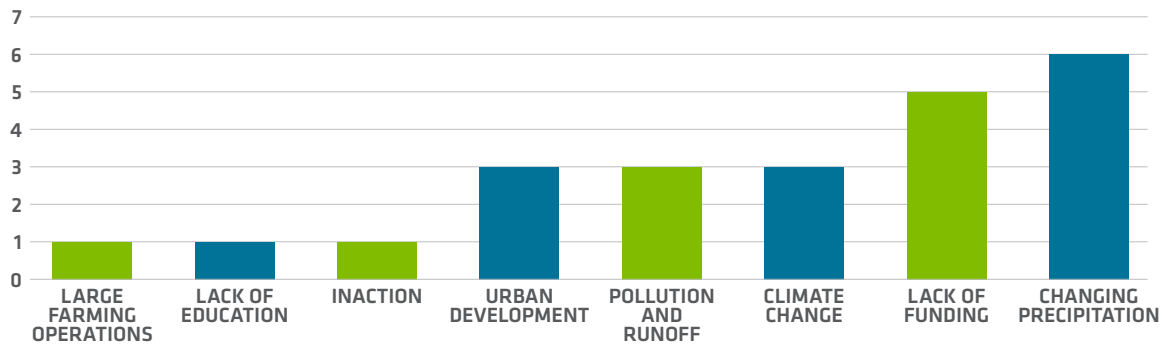


Survey respondents were asked to describe what they thought were the most important unrealized opportunities for Water and Watershed Management in the Scott WMO over the last 5 years. Unrealized opportunities included:

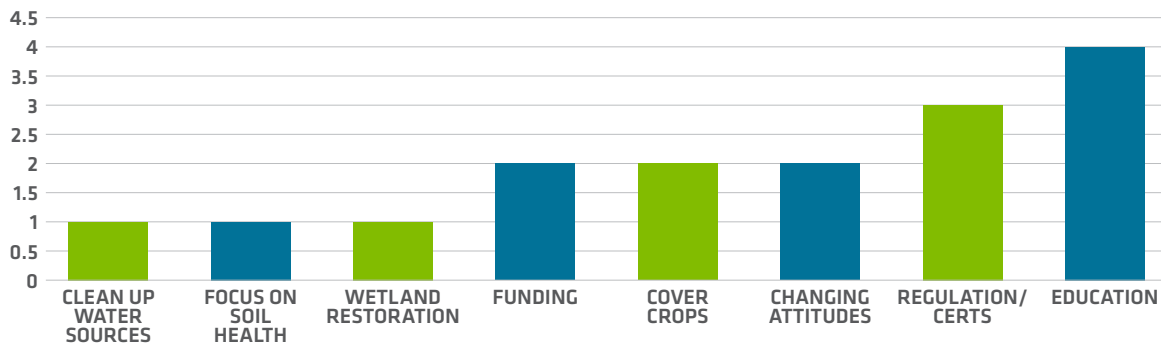
- Water storage
- Working with faith based organizations
- Water quality in streams and ditches in Scott County
- Acquiring land and preserving wetlands
- Keeping the water on the land and controlling runoff
- Conservation farming
- Taxing programs
- Public education about the need for watershed management and land stewardship
- Managing tile drainage

Survey respondents were also asked to describe what they thought are the biggest threats and biggest opportunities facing Water and Watershed Management in the Scott WMO over the next 10 years.

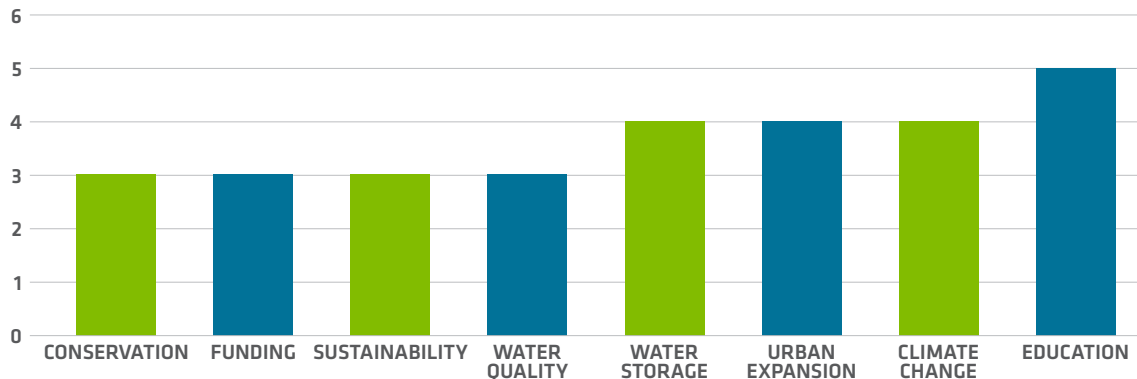
Potential threats included:



Potential opportunities included:



In conclusion, survey respondents were asked what they thought were the three most important items to be addressed when considering the future of Water and Watershed Management in the Scott WMO.





3.0 SCENARIO PLANNING

The scenario-based planning workshop was conducted on March 27, 2017, and included Scott County Water and Watershed Management stakeholders. This half-day workshop was attended by approximately 26 participants. The workshop was intended to assist in the understanding of future drivers that affect water and watershed management in the Scott WMO. Outcomes were intended to include recommendations for program/department updates that will be used to inform the upcoming comprehensive planning process.

3.1 SCENARIO-BASED PLANNING WORKSHOP

The Scott County Environmental Services Department contracted Future iQ to design and deliver a future orientated planning workshop to facilitate the understanding of the future drivers that affect water and watershed management in the Scott WMO. Future iQ's Scenario Planning process, provides a method to explore plausible futures, and consider the implications of various future scenarios. This workshop aimed to:

- Deepen the understanding and examination of how external events and local conditions could shape decision-making.
- Identify and understand the key influences, trends, and dynamics that will shape Scott County over the next 10 to 20 years.
- Create and describe four plausible long-term scenarios for water and watershed management in the County.
- Begin exploring alignment around a shared future vision. The scenarios developed during this Scenario Planning process and outlined in this report are important to provide a framework to discuss future possible outcomes and implications. Workshop deliberations can assist in identifying key actions for the Scott WMO and in identifying how various groups might best contribute to future developments. The design of the workshop included a presentation and discussion about key forces shaping the future at both global and local levels. These exercises



and work were aimed to build a robust basis for the scenario formulation. Participants were then guided through a Scenario Planning process to develop four plausible scenarios for the future of water and watershed management in the Scott WMO. The process involved exploration and discussion of global, regional, and local trends and forces of change; development of a scenario matrix defining four plausible scenarios spaces for the future; and, the development of descriptive narratives of each scenario. The event concluded with discussion of the scenarios, selection of a preferred scenario and first steps to determine the strategic actions required to create the preferred scenario.

3.2 DEVELOPING FOUR PLAUSIBLE SCENARIOS FOR THE FUTURE

Scott WMO water and watershed management stakeholders and staff explored the future and developed plausible future scenarios, looking out as far as 2030.

3.2.1 DRIVERS SHAPING THE FUTURE

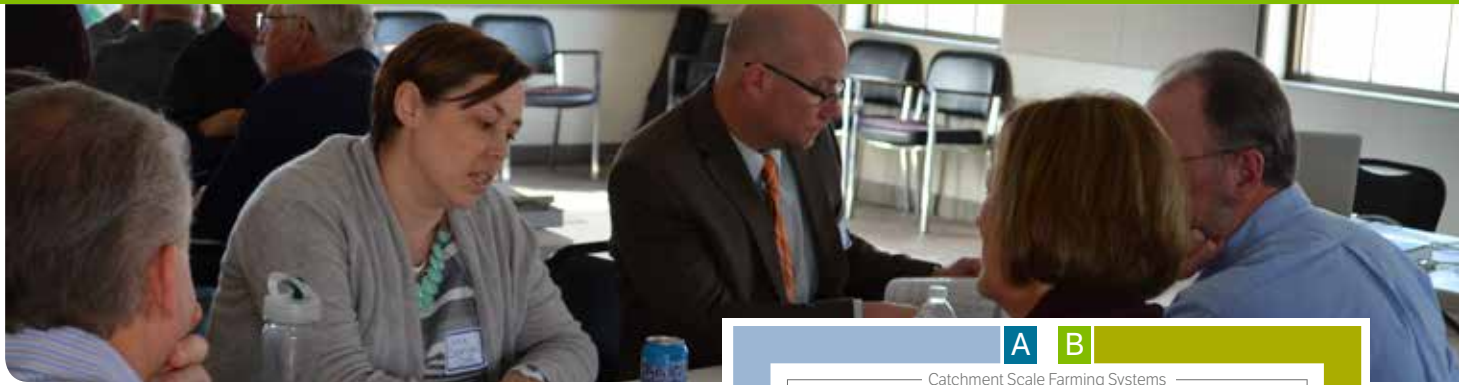
With the background of the global, national, and regional forces and how they relate to water and watershed management, participants were invited to respond to a survey prior to the workshop. The survey sought to gain insight into what participants believe to be the key drivers of Scott WMO water and watershed management services and specifically how to perceive water issues.

Creating scenario spaces – four plausible scenarios for the future

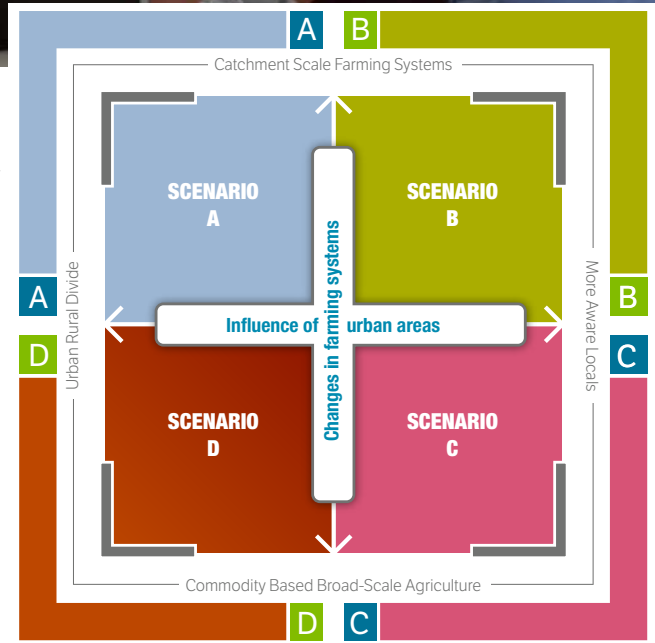
Based on the Pre-Think-Tank responses and key input from Scott County staff, themes were identified to become the basis for two axes on the scenario matrix that define four scenario ‘spaces’, with quadrants either towards or away for each driver cluster. These quadrants were used to formulate four plausible scenarios.

The two axes identified were **Influence of urban areas** and **Changes in farming systems**.

Workshop participants were presented with the scenario matrix, defined by the two major axes of ‘Influence of urban areas’ and ‘Changes in farming systems’ (see diagram). Brief descriptions were also attached to the end points of each driver axes. While these end points do not necessarily represent two extremes on a linear continuum, they are distinct enough to suggest some degree of separation and a plausible range



of outcomes between them. The four quadrants (scenario spaces) based on different combinations of the two cluster themes, were reviewed and discussed with the workshop participants. This discussion explored the description of the end points included in each scenario space, the possible interaction between these drivers, and how they formed the axes that defined the four scenario spaces. Participants were asked to consider the main attributes of each of the quadrants and to begin to speculate about how changing farming systems and the impacts of urban development into rural areas would look in a future based on each of the quadrants.



3.2.2 SCENARIO MATRIX – VIEWS OF THE FUTURE

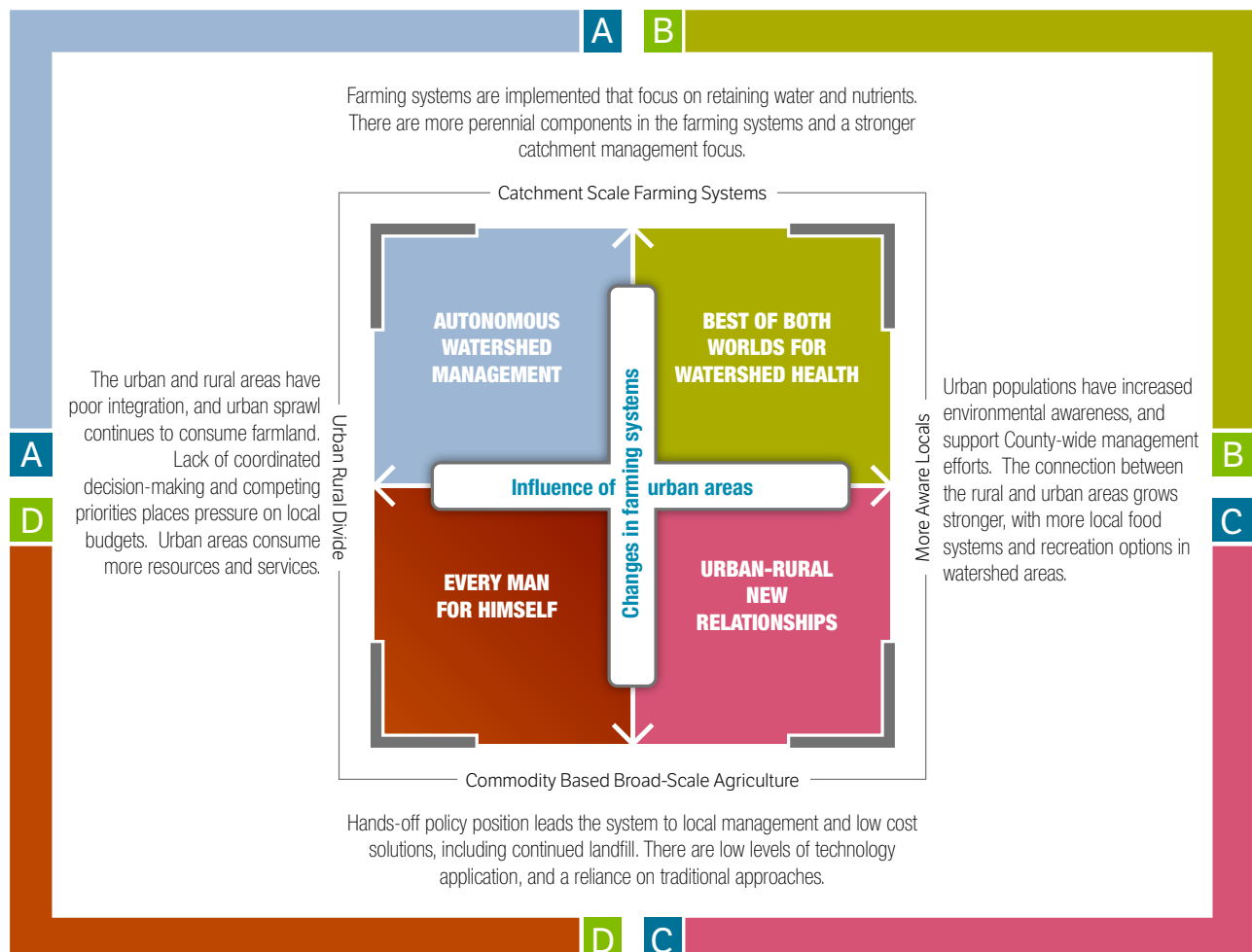
Event participants were randomly allocated to one of four groups and asked to formulate a scenario for their respective quadrant. Each group was asked to describe characteristics of the following dimensions of Scott County in 2030 under the conditions of the scenario quadrant that they had been given in terms of the triple-bottom line of social, economic and environmental characteristics:

- Watershed health and resilience
- Urban-rural connection and interaction
- Farming operations and products produced

Additionally, they were asked to devise major events or headlines of how the scenario occurred using the years 2020, 2025, and 2030 and to give their scenario a descriptive name. Once the scenarios had been developed, each group reported back, describing their scenario to the other workshop participants. Each group's notes for their scenario and the description were used to produce the detailed narrative for each scenario. Below is the scenario matrix showing the names of each scenario as described by the workshop participants.



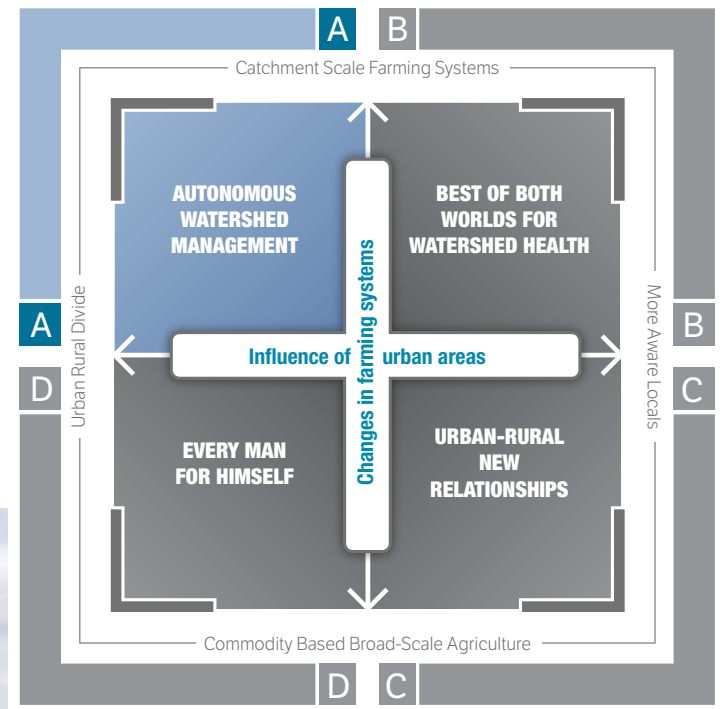
These four scenarios paint very different plausible futures for Scott WMO water and watershed management. The workshop participants considered them all as largely plausible futures, as in, they could actually happen. Narratives and descriptions of each scenario, as developed by the workshop participants, are included in the following section. Each scenario has its subsequent consequences and impacts on watershed management – impacting the community, services, and organizational fabric in different ways. No one future is the ‘perfect’ future, as each comes with its attendant challenges and implications. The process, however, does provide a way to tease out the future scenarios and examine them from a speculative standpoint. They represent different possibilities for the future, and are not predictions.





3.3 SCENARIO A – AUTONOMOUS WATERSHED MANAGEMENT

Unplanned perennial cropping takes place as there is a lack of coordinated decision-making and competing priorities with poor integration of urban and rural areas. Technological capacity increases allowing for a stronger catchment management focus but urban areas consume more resources and services reducing the benefits of technology advances. Lack of communication between urban and rural areas causes a deterioration in the ability to solve water holding and flooding issues.





SCENARIO CHARACTERISTICS - 2030

Watershed health and resilience / Characteristics

- Unplanned perennial cropping
- Better water quality
- Less flood mitigation
- Dependent on engineering in urban/less in rural

Urban – Rural connection and interaction / Characteristics

- Fewer ways to solve water holding/flooding due to lack of communication

Farming operations and products produced / Characteristics

- More crop diversity
- More technology



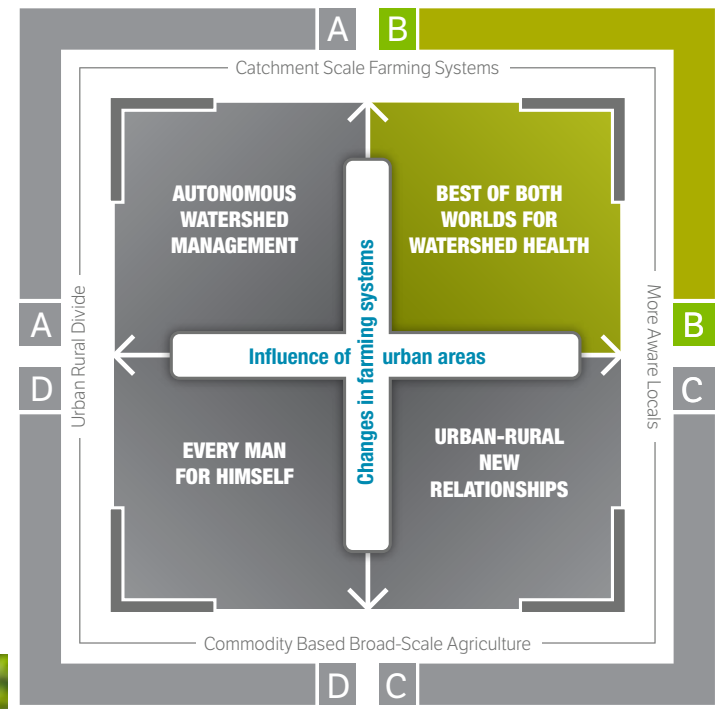
AUTONOMOUS WATERSHED MANAGEMENT - HEADLINE NEWS

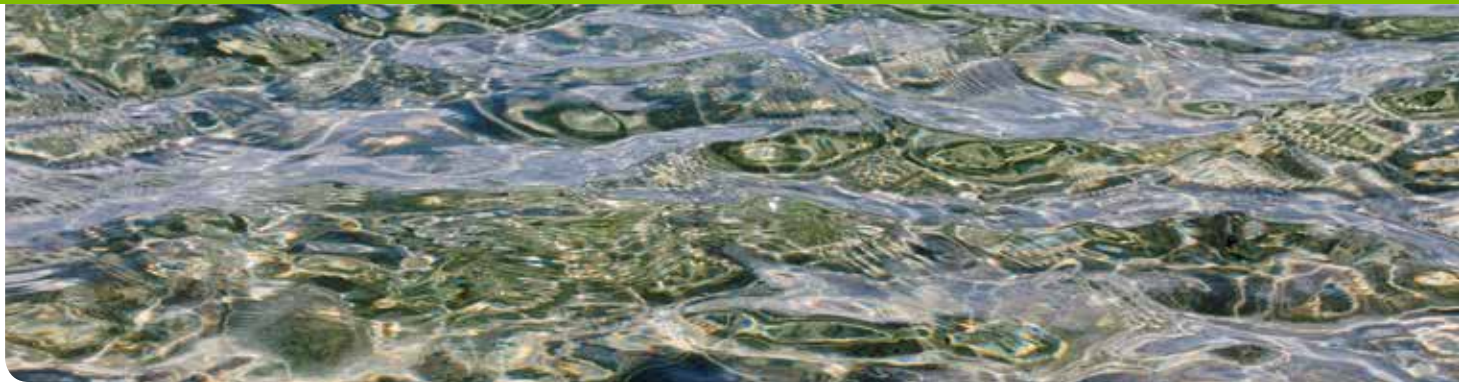
	2020	2025	2030
Watershed health and resilience	<i>Impaired waters hit all-time high</i>	<i>Watershed study commissioned – 3 local waters removed from impaired list</i>	<i>Water quality improves but flooding remains</i>
Urban – Rural connection and interaction	<i>Downstream folks sue upstream</i>	<i>Townships petition for land use authority from county</i>	<i>Townships incorporate</i>
Farming operations and products produced	<i>More farmers participate in innovative conservation programs</i>	<i>Documented reduction in soil loss and improved soil health</i>	<i>New hybrid discovered that will increase yields exponentially</i>



3.4 SCENARIO B – BEST OF BOTH WORLDS FOR WATERSHED HEALTH

Watershed health and resilience increases dramatically. Local citizens are more environmentally aware and there is increased demand for better water quality and management. A shift in regulations allows for more innovation and less fluctuations in the markets. There is increased catchment scale smart farming and pollinators flourish. The connection between rural and urban areas strengthens with demand for more local food systems and recreation options in watershed areas.





SCENARIO CHARACTERISTICS - 2030

Watershed health and resilience / Characteristics

- Sustain watershed health & possible improve potentially more wetlands
- Better urban practices
- Rebound of pollinators
- Potential improvement to water quality

Urban – Rural connection and interaction / Characteristics

- Increased demand for better water quality
- Increased demand for management-intervention for recreation
- Increased funding for watershed programs
- Support for setting aside lands for hunting/fishing/recreation

Farming operations and products produced / Characteristics

- More perennial crops – energy production
- More direct market crops – consumables
- Smaller farms, less fluctuation in markets
- Less tile drainage
- Shift in regulations



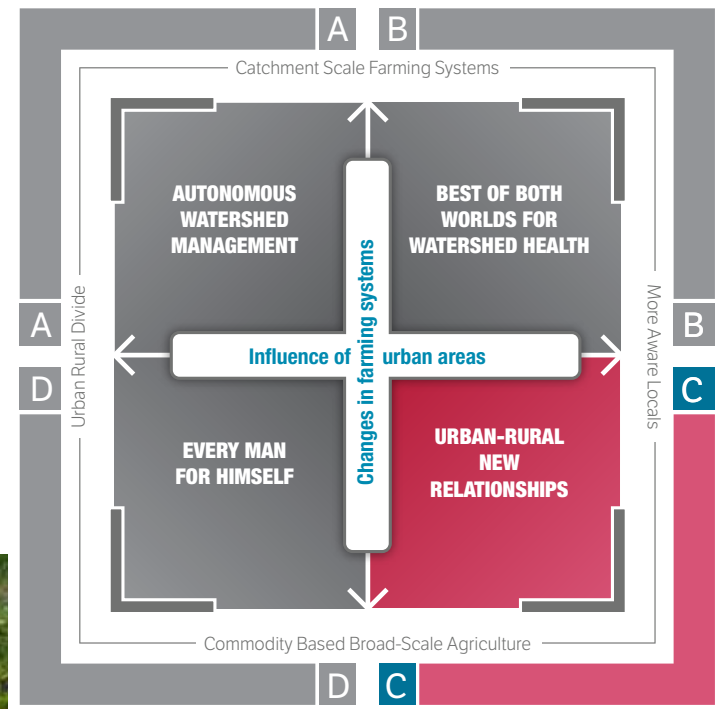
BEST OF BOTH WORLDS FOR WATERSHED HEALTH - HEADLINE NEWS

	2020	2025	2030
Watershed health and resilience	Cover crops are the future	Fewer imports seen from major rainfall event than 2014	Multiple basins delisted; Result of shift to smaller scale AG, less fertilizers into water bodies
Urban – Rural connection and interaction	Growing interest in locally grown food	Nearly 40% of food consumed grown within 60-mile radius	Legacy amendment extended
Farming operations and products produced	Farmers move towards organic practices	Growing trend – local sale of commodities outpaces exports	Majority of farms use a perennial cover crop



3.5 SCENARIO C – URBAN-RURAL NEW RELATIONSHIPS

Large-scale farming operations still exist but there is a movement towards more diversification with more environmental education and awareness. The increase of urbanization increases demands for recreational options and the lack of regulations has the potential to decrease water quality. There is a tension between recreational needs and the need for more farmland. Reliance on high input systems with increased fertilizer applications continues to plague watersheds and water quality.





SCENARIO CHARACTERISTICS - 2030

Watershed health and resilience / Characteristics

- Decrease water quality (excessive nutrients)
- More animals; more odors
- Bigger culverts, larger holding basins
- Large scale farmers market
- New development and redevelopment
- Low impact development option
- More resiliency with high intensity events
- Feel pretty good about resilience to higher rainfall

Urban – Rural connection and interaction / Characteristics

- Urban sector wanting more recreational options
- Taxes may increase to help with programs or projects of the watershed
- More natural places for urban people to go
- Not sure how open rural population is to working with urban population
- Possible more diverse crops with urban local production

Farming operations and products produced / Characteristics

- High protein, corn/soybean production with larger farms
- Urban-smaller-diversified
- Urban farms (community gardens)
- Struggle with recreation due to water quality and desire for more farming land



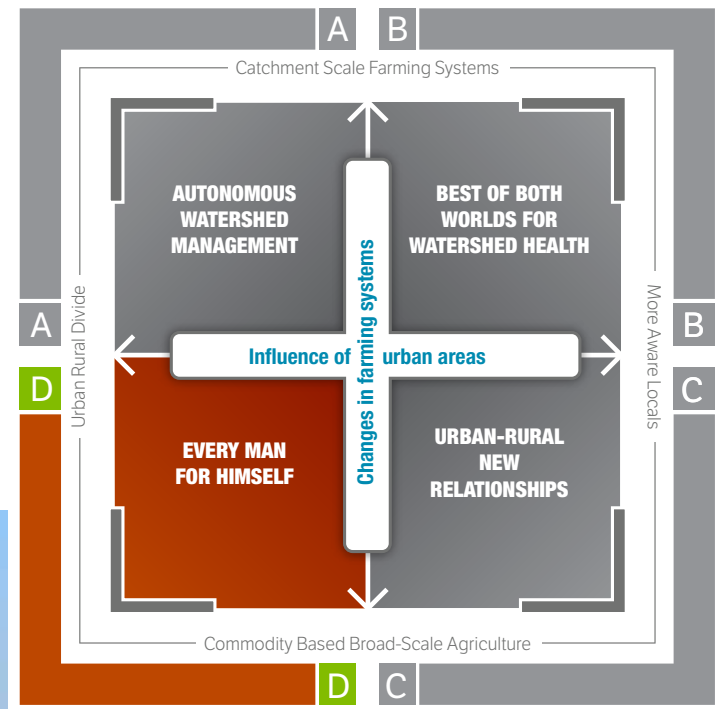
URBAN-RURAL NEW RELATIONSHIPS - HEADLINE NEWS

	2020	2025	2030
Watershed health and resilience	<i>Concern over water quality</i>	<i>Dog dies after drinking lake water</i>	<i>Worst storms of the century</i>
Urban – Rural connection and interaction	<i>Record interaction with 2040 Comp Plan</i>	<i>Joe Farmer donates 100 acres to new public park</i>	<i>Voter approved tax increase to help improve water quality</i>
Farming operations and products produced	<i>New record yield from local farms</i>	<i>Increased demand for local farmers market</i>	<i>Welcome the robotic farming</i>



3.6 SCENARIO D – EVERY MAN FOR HIMSELF

Water quality issues are intensified as urban and rural areas have poor integration and urban sprawl continues to consume farmland. Significant finger-pointing occurs regarding who is responsible for water quality and the community is less resilient to extreme rainfall events. Large farms intensify runoff issues and watersheds suffer. Depleted soils due to high reliance on fertilizers and pesticides reduce farming productivity.





SCENARIO CHARACTERISTICS - 2030

Watershed health and resilience / Characteristics

- Water quality issues intensified
- Increased nutrient loading
- Increased bluff erosion
- Less resilient to extreme rainfall events

Urban – Rural connection and interaction / Characteristics

- More disconnected
- Finger-pointing – who is causing pollution
- Less recreation
- Less access to water use
- Less development of parks

Farming operations and products produced / Characteristics

- More commodity based
- Less organics
- Potentially increased livestock facilities/larger scale
- High profitability/larger farms buying up smaller farmers
- Less regulations (or maybe more if urban residents finger point/ outnumber farmers)
- Decrease soil health – lower productivity



EVERY MAN FOR HIMSELF - HEADLINE NEWS

	2020	2025	2030
Watershed health and resilience	<i>Local Flooding is increasing!</i>	<i>Local beach closed due to increased algae</i>	<i>All drinking water goes through new expensive water treatment plant!</i>
Urban – Rural connection and interaction	<i>Scott County challenging Met Council over authority to regulate</i>	<i>Area residents want farmers to be regulated</i>	<i>Joe Farmer sues Scott County over land use zoning</i>
Farming operations and products produced	<i>Record corn and soybean outputs</i>	<i>No growth in crop yields</i>	<i>Depleted soils, production down</i>

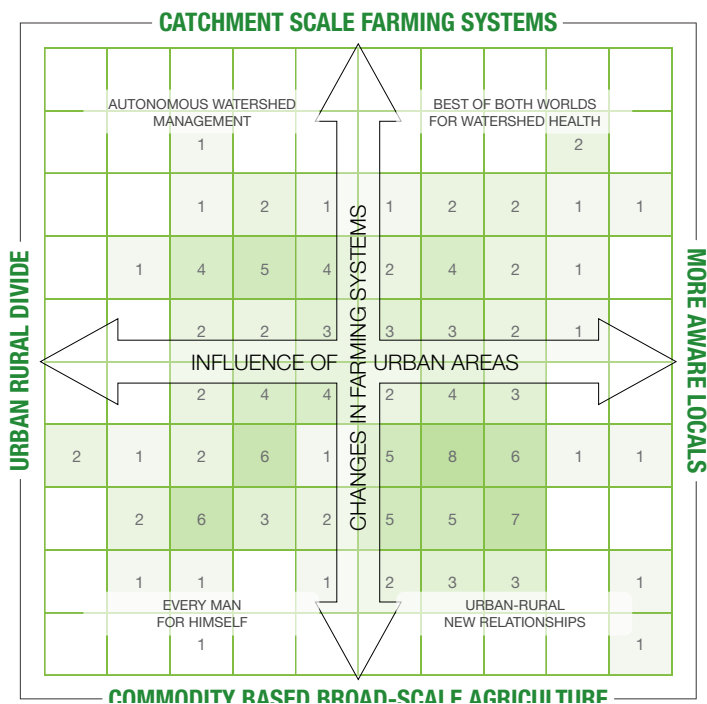


4.0 PREFERRED AND EXPECTED FUTURES

The four scenarios presented represent a range of plausible outcomes for Water and Watershed Management in Scott WMO. Workshop participants were asked a series of questions regarding their views of the preferred and expected future. The expected future is the one they deemed most likely to happen if there is no change in the current trajectory. The workshop participants indicated that Scenarios C and D are the scenarios they believed most represented the current direction of the region.

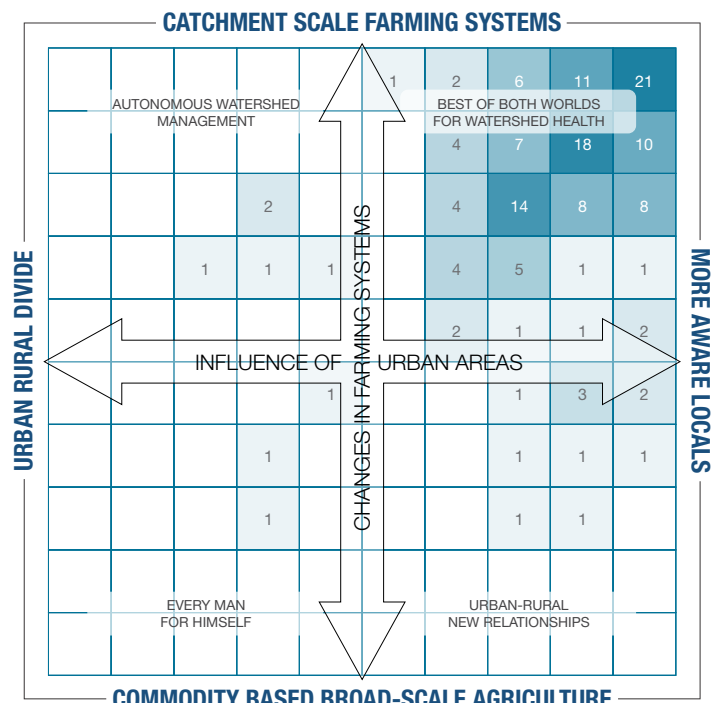
SCOTT COUNTY WATERSHED / WATER MANAGEMENT

EXPECTED FUTURE – 2030



SCOTT COUNTY WATERSHED / WATER MANAGEMENT

PREFERRED FUTURE – 2030



While each of these scenarios were viewed as plausible, workshop participants expressed a clear preference for one of the presented outcomes, Scenario B, Best of Both Worlds for Watershed Health.



5.0 NEXT STEPS

Workshop participants discussed the ramifications and implications of failing to achieve the preferred future. There was a unanimous alignment of people that 'Best of Both Worlds for Watershed Health' represented the preferred future scenario, however very few people thought that was the current trajectory. The preferred future 'Best of Both Worlds for Watershed Health' outlines the basis of a shared vision for the Scott WMO. In addition, it gives an indication of the focus areas of action that will be needed for this vision become a reality. Workshop participants discussed what they believed the next steps should be, and how they could move forward.

The axes that shape this future are increasing 'Influence of urban areas' and increasing 'Changes in farming systems'. Because of the long-term nature of the Scenario Planning methodology, stakeholders can often see the 'distant future vision (2030)' as unattainable and unrealistic. However, this often underestimates the progress that can be made of the intervening years, and the cumulative positive impacts of change. As an example, some of the existing work in the county is already significantly shaping the future directions and actions.

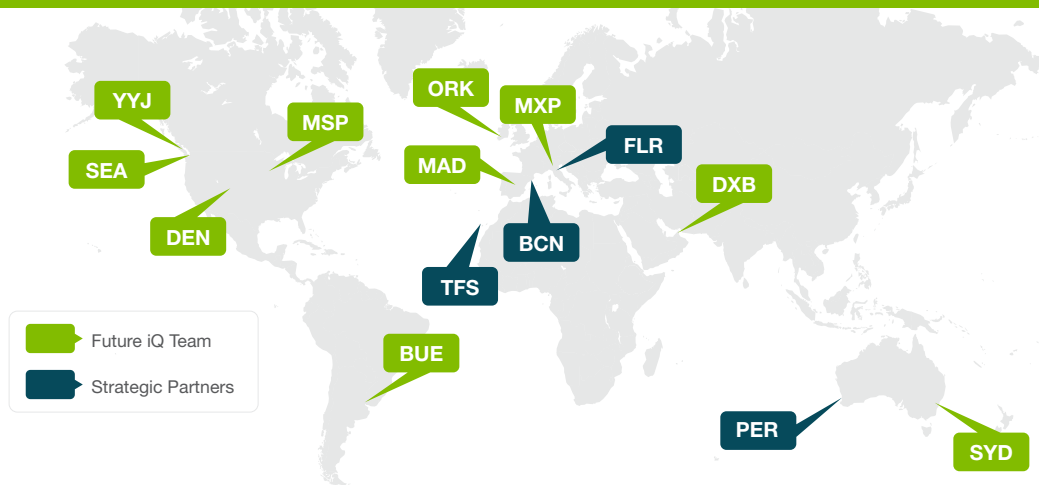
The scenario framework also can help guide additional actions to inform the future, especially pertaining to building infrastructure, collaboration and capacity. The next phase of the planning process for updating the Comprehensive Water Resources Management Plan is determining what the Scott WMO and its stakeholders want for the future. The scenario developed will help inform this discussion. Implementation strategies will also be developed and discussed considering the trends and drivers identified in the workshop to insure the flexibility to adapt as the future unfolds.



This report lays the foundation for greater understanding of water and watershed management in the Scott WMO. The preferred future 'Best of Both Worlds for Watershed Health' outlines the basis of a shared vision for County direction. The scenario framework helps identify and focus on areas of action that will help this vision become a reality.

Towards the conclusion of the Think-Tank, participants were asked to brainstorm what would be needed for the Scott WMO water and watershed management plan to achieve the preferred future scenario, Best of Both Worlds for Watershed Health. Six top level actions were identified:

1. Water quality education – better communication about water quality and how to maintain it
2. Investment in piloting projects – especially new farming systems and demonstrations
3. Urban-Rural education needed in general
4. Water infiltration – more is needed
5. Urban-Rural interests need to figure out how to benefit from each other and collaborate on water issues
6. Increased positivity around innovation is needed, especially local support for technology



6.0 ABOUT FUTURE IQ

Future iQ is a market leader in the development and application of scenario planning; network analysis, industry and regional analysis, and community engagement and capacity building. Future iQ specializes in applying innovative tools and approaches to assist organizations, regions and industries shape their economic and community futures. With over a decade of business experience, the company has grown to have a global clientele spanning three continents. To learn more about Future iQ, and our recent projects visit www.future-iq.com or by email at info@future-iq.com

Report and Scenario Planning workshop prepared by:



DAVID BEURLE, CEO, FUTURE IQ

As CEO of Future iQ, David specializes in creating future planning approaches for the use in regional, community and organizational settings. David has worked in the field of organizational and regional economic and community planning for over 20 years. His work in community and economic development has earned his work international, national and state awards.



HEATHER BRANIGIN, VICE PRESIDENT, BUSINESS DEVELOPMENT

Heather has an academic background in Political Science, International Relations and Education and is committed to helping people understand global interconnectedness and collaboration. She is past President and current Advisory Council member of the United Nations Association of Minnesota and has worked for over 20 years in the fields of international education and development.



MARCUS GRUBBS, MURP, AICP, PLANNING SPECIALIST

Marcus is a certified Planner with an academic background in Urban and Regional Planning and Environmental Studies. He recently completed a Graduate Research Fellowship with the University of Minnesota – Twin Cities, managing a research collaborative exploring the future of agricultural production, economic development, and environmental conservation in Southern Minnesota. Marcus chairs a non-profit policy committee and participates in the Big Brother program.



7.0 SCOTT COUNTY ENVIRONMENTAL SERVICES, MINNESOTA

The Environmental Services Department of Scott County consists of several service areas including household and business hazardous waste, septic systems, watershed management, natural resources, recycling and solid waste management, and the environment. For the purposes of this report, the Environmental Services Department of Scott County contracted Future iQ to facilitate a workshop that would assist watershed management stakeholders and staff in the understanding of the future drivers that affect watershed management in Scott County. This increased understanding will be used to inform the department's recommendations to the upcoming comprehensive plan update.

For more information on the Environmental Services Department of Scott County, please contact:

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8.0 ACKNOWLEDGMENTS

Future iQ would like to thank the Paul Nelson for the significant time and effort put into the planning and execution of this planning workshop. Future iQ would also like to thank Melissa Bokman for her additional assistance. We sincerely appreciate your contributions.



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Scott