Land Conservation Plan
for Dakota County

Pre-Public Review Draft: March 9, 2020
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# Land Conservation Plan for Dakota County

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I. EXECUTIVE SUMMARY

Dakota County -- a vast homeland to Dakota and Ojibwa people, then part of the Dakota Territory encompassing millions of acres westward to the Missouri River -- is now one of seven core Twin Cities Metropolitan Area counties. Bounded by the Mississippi, Minnesota and Cannon rivers, the County includes 576 square miles of ecologically and visually diverse landscapes. The majority of nearly 430,000 residents live in developed and expanding suburbs in the northern third of the County, and 820 farms and small rural centers cover the southern two thirds of the County.

The Need for Natural Resource Conservation

Development of natural lands has altered and damaged natural resources and systems in the County, with consequences to local communities. Rivers, streams and lakes became increasingly polluted from urban and agricultural runoff. Groundwater is being pumped more rapidly than it is being replenished and contamination is a growing concern. Soil health has been compromised by development, erosion, compaction, and chemicals. Wildlife habitat has been lost, fragmented, and degraded resulting in declining plant and animal populations and overall species diversity. Many natural places enjoyed and valued by generations have disappeared across the County.

Our natural resource base is essential to individual and community health and is irreplaceable. We all need drinkable water, breathable air, reliable food, and a safe place to live. It’s not difficult to find evidence of declining environmental quality, whether relative to the world of our childhood, or that of our grandparents, or earlier. The following indicators provide a snapshot of water quality, natural areas, wildlife, and County residents’ concerns about environmental quality.

- State impaired waters listings identify lakes, rivers, and streams that no longer provide for designated uses, such as fishing, swimming or drinking. The number of impaired waters in the County has increased over time. In 2018, testing found at least one impairment for every tested waterbody, for a total of 81 impairments. The number of quality issues has also grown, as new problems emerge, and new impairments are defined.
- Wetlands are critical to overall water quality and flood control. More than 85 percent of Dakota County’s settlement-era wetlands have been lost.
- Despite having a highly diverse mix of landscapes and ecosystems in the mid-1800s, only an estimated three percent of Dakota County’s natural landscapes remain.
- Habitat loss has led to declining wildlife populations and diversity. Nationally, bird populations dramatically illustrate this decline since the 1970s. For example, grassland bird species have declined nationally by more than 50 percent.

Living in a modern world defined by development, transportation, and convenience requires balancing the trade-offs between control of our immediate environment with protection of the natural environment that sustains us all.

To protect natural resources and systems, land conservation reserves lands with significant natural resource value and manages them to restore natural functions. It is based on the concept that natural resources and natural places provide ecological, societal and economic benefits within and beyond the conservation area boundaries. Land conservation includes protection, which restricts use of the land. To be

1 https://www.pca.state.mn.us/water/2018-impaired-waters-list
2 Minnesota Wetlands Conservation Plan, Version 1.02, 1997, Minnesota Department of Natural Resources, St. Paul, Minnesota.
3 Decline of the North American Avifauna, Science, Sept. 2019
effective over the time, protection must be accompanied by ongoing natural resource management.

Benefits that protected and restored forests, grasslands, and wetlands can provide include:
- Absorbing nutrient runoff, toxins, and sediments for cleaner water downstream
- Promoting infiltration and groundwater recharge and protecting drinking water supplies
- Moderating drought and flood
- Improving soil health
- Providing wildlife habitat and sustaining pollinators
- Providing opportunities for recreation, education, and inspiration
- Mitigating and adapting to climate change

Scientific surveys of Dakota County residents⁴ consistently show strong support for land protection and resource management, with the strongest support for water quality, wildlife habitat, and natural areas.

| 2019 County Survey, Percent identifying preserved land management as “Essential” or “Very Important” |
|---------------------------------|------------------|
| Approach                          | Percent |
| Protecting and improving water quality | 92      |
| Protecting and improving wildlife habitat | 84      |
| Protecting and improving natural areas | 83      |
| Increasing access for outdoor recreation | 73      |
| Protecting and improving land used for agriculture/specialty crops | 71      |

Land Conservation in the County
Dakota County’s 2001 Farmland and Natural Protection Plan identified priority natural areas and farmland to protect. Residents passed a $20 million bond referendum in November 2002 for a new land protection program. As of 2019, the County had spent $20.6 million, received $26.3 million in landowner donations, and leveraged $34.7 million in non-County funds to:
- Acquire 68 agricultural easements totaling 7,770 acres, including 1,300 acres of natural areas and 49 miles of shoreland
- Acquire 42 natural easements totaling 1,777 acres and 30 miles of shoreline
- Work with other public entities to protect 22 properties totaling 2,000 acres and 16 miles of shoreline

Land Conservation Plan
Dakota County recently began developing a countywide Land Conservation Plan as a shared vision for the geographic area of Dakota County, to be implemented with partners, to guide future land protection efforts, and to strengthen natural resource management on protected lands.

The focus was to:
- Identify and prioritize significant natural areas and connecting corridors for voluntary protection and increased resource management, especially for wetland restoration and water retention on the land

- Improve County coordination and collaboration with other agencies and organizations on land protection and long-term natural resource management
- Explore potential tools and incentives to increase voluntary land protection and natural resource management of private lands
- Update Land Conservation Program guidelines for interested landowners and partners

Stakeholder and partner engagement led to development of the Plan vision, goals, and new approaches.

**Land Conservation Plan Vision**
*The natural resources of Dakota County are collaboratively protected, improved, and managed for current and future generations.*

**Land Conservation Plan Goals**
1. Ecologically important areas are prioritized for protection.
2. Water quality and quantity is enhanced and protected.
3. Natural resource quality is improved and sustained.
4. Biodiversity is restored and sustained.
5. The public supports and is involved in natural resource protection and management.
6. Recreational access to conservation lands is enhanced.

New approaches will be used to achieve these goals.

**Refine Land Protection Priorities with Preliminary Conservation Focus Areas (CFAs)**
Land protection priorities will be based on natural features, connectivity, hydrology, and land ownership with renewed emphasis on water. The resulting 24 Preliminary CFAs total about 82,115 acres, of which roughly 38,236 acres are already protected, and provide a framework for landowner outreach, collaborative landscape conservation and public investments.

**Develop a City-County Conservation Collaborative**
Form a city-County collaborative to more effectively protect critical undeveloped areas, increase natural resource restoration and management, and share information and financial and staff resources within all incorporated areas.
Establish a County Conservation Private Funding Partner
Continue evaluating models for raising and distributing private funds for natural resource restoration, enhancement and maintenance on protected private lands.

Restore Large-Scale Wetlands and Assist in Implementing the new Dakota County Groundwater Plan
Strategically protect, restore, and maintain existing and former wetlands, recharge areas and sensitive groundwater resources. 14,000 acres of cultivated wetlands in large basins have been identified for potential restoration.

Improve Conservation in Agricultural Use Areas
Assist the Dakota County Soil and Water Conservation District as they work with rural landowners and agricultural operators to improve management practices and convert marginal farmland to natural vegetation.

Ten-Year Plan Outcomes
Ten-year outcomes and associated costs were developed for four protection and ownership scenarios:

- Publicly-owned conservation land within Preliminary CFAs
- Protected private lands within Preliminary CFAs
- Non-protected private land within Preliminary CFAs
- Non-protected private land outside of Preliminary CFAs

Estimates were developed based on the following key assumptions:

- 80 percent of public agencies would be interested in participating in partnership efforts to restore their lands
- 30 percent of landowners with County easements would be willing to additionally protect and restore land.
- 20 percent of new landowners would be interested in protecting and restoring some of their land.
- Continued availability of existing and future State and other non-County grant funds
- County cost-share likely would be 20 to 25 percent for protection and restoration activities

Based on the scenarios, landscape types, and assumptions, a range of land protection and restoration targets for the next ten years are:

- 2,500-5,000 acres of additional land protection at a projected County cost of $5.2 million-$10.4 million.
- 4,000-15,600 acres of additional restoration at a projected County cost of $3.8 million-$7.6 million.

Estimated Cost
The total estimated cost for protecting and restoring lands within the Preliminary Conservation Focus Areas and areas identified outside of the CFAs is $367 million, based on past program experience, current land and easement values and unit restoration costs.
Potential Outcomes and Estimated County Cost

<table>
<thead>
<tr>
<th>Protection and Ownership Status</th>
<th>Total Acres</th>
<th>Ten-Year Protection Acres</th>
<th>Ten-Year Total Protection Costs</th>
<th>Ten-Year County Protection Cost</th>
<th>Ten-Year Restoration Acres</th>
<th>Ten-Year Total Restoration Costs</th>
<th>Ten-Year County Restoration Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Public Conservation Lands within CFAS</td>
<td>29,703</td>
<td>0</td>
<td>$0</td>
<td>$0</td>
<td>10,600</td>
<td>$30.5M</td>
<td>$3.5M</td>
</tr>
<tr>
<td>2. Protected Private Lands within CFAs</td>
<td>8,533</td>
<td>1,900</td>
<td>$31.7M</td>
<td>$2.1M</td>
<td>2,500</td>
<td>$20.7M</td>
<td>$0.9M</td>
</tr>
<tr>
<td>3. Non-Protected Private Land within CFAs</td>
<td>43,879</td>
<td>2,600</td>
<td>$159.2M</td>
<td>$7.8M</td>
<td>2,100</td>
<td>$99.4M</td>
<td>$3.0M</td>
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<tr>
<td>4. Non-Protected Private Land outside of CFAs</td>
<td>2,400</td>
<td>500</td>
<td>$16.4M</td>
<td>$0.5M</td>
<td>400</td>
<td>$9.2M</td>
<td>$0.2M</td>
</tr>
<tr>
<td>Totals</td>
<td>84,515</td>
<td>5,000</td>
<td>$207.3M</td>
<td>$10.4M</td>
<td>15,600</td>
<td>$159.8M</td>
<td>$7.6M</td>
</tr>
</tbody>
</table>

Operational Considerations
Land conservation projects can be highly complex, with many variables that influence timeframes and costs. Acquisition projects can require 18 to 24 months and restoration projects require three or more years. Staff capacity influences the amount of land that can be protected and restored annually and over the Plan’s ten-year timeframe. Based on current staff capacity, an estimated 250 acres could be protected each year for a total of 2,500 acres and 400 acres could be restored each year for a total of 4,000 acres over the ten-year plan.

An additional 1.0 FTE Acquisition Specialist could double the land protection to 5,000 acres over ten years. An additional 3.0 FTE Restoration Specialists could quadruple the natural resource restoration acreage to 15,600 acres over ten years. The estimated costs for these staffing options are outlined below:

Estimated Annual Costs

<table>
<thead>
<tr>
<th>Acres</th>
<th>Land Protection</th>
<th>Natural Resource Restoration</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>250</td>
<td>500</td>
</tr>
<tr>
<td>County Operational Cost</td>
<td>$300K (Current)</td>
<td>$415K (+1 FTE)</td>
</tr>
<tr>
<td>Additional County Capital Cost</td>
<td>$520K</td>
<td>$1.04M</td>
</tr>
<tr>
<td>Total County Cost</td>
<td>$820K</td>
<td>$1.46M</td>
</tr>
</tbody>
</table>

Estimated Ten-Year Costs

<table>
<thead>
<tr>
<th>Acres</th>
<th>Land Protection</th>
<th>Natural Resource Restoration</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2,500</td>
<td>5,000</td>
</tr>
<tr>
<td>County Operational Cost</td>
<td>$3M (Current)</td>
<td>$4.15M (+1 FTE)</td>
</tr>
<tr>
<td>Additional County Capital Cost</td>
<td>$5.2M</td>
<td>$10.4M</td>
</tr>
<tr>
<td>Total County Cost</td>
<td>$8.2M</td>
<td>$14.65M</td>
</tr>
</tbody>
</table>

5 Cost estimate tables do not reflect inflation impacts.
Once the Land Conservation Plan is adopted by The Dakota County Board of Commissioners, the Environmental Resources Department will develop annual workplans detailing activities for the following year. Annual program budgets are subject to County Board review and approval.

**Moving Forward**

The County will continue to rely on private landowner interest in voluntary land protection and will work with landowners on their timeframes and meeting their needs.

Realizing the vision will also rely on partners that have additional objectives, needs, and priorities beyond Dakota County’s. Dakota County envisions its role in facilitating, planning assistance, implementation assistance, and funding to realize this vision. The hope is that others embrace this plan and take ownership in its goals and implementation.
II. INTRODUCTION AND PURPOSE

A. Introduction

1. A Changing Landscape

Dakota County -- a vast homeland to Dakota and Ojibwa people, then part of the Dakota Territory encompassing millions of acres westward to the Missouri River -- is now one of seven core Twin Cities Metropolitan Area counties. Bounded by the Mississippi, Minnesota and Cannon rivers, the County includes 576 square miles of ecologically and visually diverse landscapes. The majority of nearly 430,000 residents live in developed and expanding suburbs in the northern third of the County, while the southern two thirds of the County includes 820 farms and small rural centers.

From hunting and gathering indigenous cultures, to diverse agricultural heritage, to contemporary residential, commercial and industrial land uses, the County’s rich natural resources provided for survival, development, commerce, and special places deemed sacred, beautiful, and defining of a sense of place.

As in most communities, these natural resources and special places were transformed over time. Vast grasslands were cultivated to provide food. Forests were felled for building lumber and in turn, provided more land to farm. Large wetlands were drained, filled, and tiled to grow food. Many agricultural areas then gave way to towns and cities, a growing network of roads, suburbs, and larger cities.

Development of natural lands has altered and damaged natural resources and systems in the County, with consequences to local communities. Rivers, streams and lakes became increasingly polluted from urban and agricultural runoff. Groundwater is being pumped more rapidly than it is being replenished and contamination is a growing concern. Soil health has been compromised by development, erosion, compaction, and chemicals. Wildlife habitat has been lost, fragmented, and degraded resulting in declining plant and animal populations and overall species diversity. Many natural places enjoyed and valued by generations have disappeared across the County.

2. Land Conservation in the County

Early conservation efforts included the establishment of Carleton Arboretum along the Cannon River in 1920’s, Kaposia Park in South St. Paul in 1937 and the Gores Pool State Wildlife Management Area along the Mississippi River floodplain in the late 1930’s. Extensive land protection efforts in the County expanded in the 1960’s with the establishment of Fort Snelling State Park, Dakota County’s park system, the regional park system, Dodge Nature Center in West St. Paul, and many city parks.

These lands were protected for the many public and individual benefits that land conservation offers, including a broad range of ecosystem services (ES).

- **Regulation** of natural processes, such as maintaining air and water quality, climate moderation, pest mitigation, and flood control
- **Supporting** processes that contribute to and are essential for ecosystem services, such as soil generation, waste decomposition, nutrient and water cycling, and pollination
- **Providing** products obtained from nature, such as food, fresh water, timber, fiber, and biomass fuel
- **Cultural** nonmaterial benefits, such as recreation, aesthetic appreciation, education, health, and inspiration
Forests, grasslands, and wetlands absorb nutrient runoff, toxins, and sediments from roads, agriculture, and industry, protecting drinking water and aquatic resources and saving municipalities major costs in chemical or mechanical water treatment. Forests, grasslands, and wetlands also slow runoff, minimize evaporation, and allow for infiltration and groundwater recharge. This can moderate drought and flood to provide a more consistent water supply for consumption, electricity generation, industrial uses, and recreation.

Large, contiguous blocks of forests and wetlands are most likely to contain fully functioning ecosystems and provide valuable ecosystem services. Healthy, functioning watersheds naturally filter pollutants, reduce soil erosion, decrease flooding, and recharge groundwater, with cleaner water downstream.

3. Farmland, Natural Areas, and Land Conservation

Resident interest in protecting farmland and natural areas increased in the 1990’s, in response to increased residential development and the possible relocation of the Minneapolis St. Paul International Airport to central Dakota County. The County’s 2001 Farmland and Natural Protection Plan identified more than 78,000 acres of natural area and farmland to protect. Residents supported County leadership in land protection and demonstrated a willingness to increase their property taxes by passing a $20 million bond referendum in November 2002 for land protection.

In 2003, the County began working with willing sellers to protect high-quality natural areas and farmland with high quality soils along rivers and streams, through acquisition of permanent conservation easements and financially assisting other public entities in acquiring fee title. As of 2019, the County had spent $20.6 million, received $26.3 million in landowner donations, and leveraged $34.7 million in non-County funds to:

- Acquire 68 agricultural easements totaling 7,770 acres, including 1,300 acres of natural areas and 49 miles of shoreline
- Acquire 42 natural area easements totaling 1,777 acres and 30 miles of shoreline
- Work with other public entities to protect 22 properties totaling 2,000 acres and 16 miles of shoreline

The combination of County acquisitions and lands acquired by cities and the Minnesota Department of Natural Resources has increased the amount of publicly accessible protected natural lands in the County by an estimated 3,811 acres over the past 18 years. Combined with nearly 8,700 acres of permanently protected private lands, nearly 8.6 percent of the County is permanently protected conservation lands.

Management of natural resources on protected lands also has accelerated throughout the County. Recognition that land is not truly protected unless it is actively managed, the relentless spread of invasive species, expanding scientific knowledge, increased management capacity in the public and private sectors, and greater access to native plants and seeds all have contributed to this essential component of lasting conservation work.

Despite this notable progress, the need for additional conservation work continues.

- Most surface waters in the County that have been assessed continue to be impaired in some way.
- Nitrate contamination is documented in extensive portions of the County’s groundwater.
- Diminished soil health continues to be a concern.
- Flood damage has increased due to our land use practices and more frequent and extreme precipitation.
- Special concern wildlife species continue to decline in numbers and diversity.
- Recognition that people benefit physically and mentally from quality time outdoors has grown.
Land conservation reserves land with significant natural resource value, to protect them from the harmful impacts of various land uses. It is based on the concept that natural resources and natural places provide a wide range of ecological, societal and economic benefits within and beyond the conservation area boundaries. Land conservation includes land protection, generally achieved through the purchase of land in fee title or easements that restrict use of the land. To be effective over the long-term, land protection must be accompanied by ongoing natural resource management, including restoration when needed. Many natural processes that would normally maintain the integrity of natural resources have been disrupted by a range of land use activities (e.g., suppression of natural fire, alteration to pre-settlement hydrology, and introduction of invasive species). Without evaluation, intervention, and ongoing management, natural resources on protected lands are likely to decline over time, undermining the investment made in protecting these lands.

B. Planning Purpose
In 2018, the County began developing a countywide Land Conservation Plan as a shared vision for the geographic area of Dakota County, to be implemented with partners, to guide future land protection efforts, and to strengthen natural resource management on protected lands. The focus was to:

- Identify and prioritize significant natural resource lands and connecting corridors for voluntary protection and increased natural resource management, especially for wetland restoration and improved water retention on the land
- Improve County coordination and collaboration with other agencies and organizations on land protection and long-term natural resource management
- Explore potential tools and incentives to increase voluntary land protection and natural resource management of private lands
- Update Land Conservation Program guidelines for interested landowners and partners

This Plan builds from the lessons learned and the successes of the 2002 Dakota County Farmland and Natural Areas Protection Plan and the countywide Farmland and Natural Area Program (FNAP), as well as its successor, the Dakota County Land Conservation Program.

C. Planning Context
This Plan was informed by many comprehensive and natural resource management plans that address the geographic area of Dakota County, including City, Township, County, Regional, and State plans. Review of current plans demonstrated alignment of goals and principles for protection and management of land and natural resources.
County Plans
This Land Conservation Plan is guided by two overarching County plans, the 2017 *Dakota County Strategic Plan* and the 2040 *Dakota County Comprehensive Plan*.

The *Dakota County Strategic Plan* reflects the County Board of Commissioners' vision for the County and guides County programs and initiatives, including the *Land Conservation Plan*.

*A great place to live*
- Dakota County strives to be a welcoming place where all people are safe, have opportunities to thrive, and enjoy a high lifelong quality of life.

*A healthy environment with quality natural areas*
- Dakota County protects and maintains natural resources for the health and enjoyment of current and future residents.

*A successful place for business and jobs*
- Dakota County fosters business and employment success through modern infrastructure, low taxes, and a prepared, connected workforce.

*Excellence in public service*
- Dakota County demonstrates sound stewardship of human and financial resources, communicates and engages with the public, and innovates and collaborates to provide excellent service.

The *Land Conservation Plan* supports the following Natural Resources Goals identified in the 2040 *Dakota County Comprehensive Plan*, adopted in 2019:

5.3 *Preserve vital functions of natural systems by strategically and collaboratively improving Dakota County’s green infrastructure*

5.4 *Conserve and protect natural resources in Dakota County, including air quality, water, soil, productive farmland, minerals (bedrock, sand and gravel aggregates), vegetation, and wildlife*

5.5 *Sufficient and sustainable high-quality water resources*

5.6 *Sufficient and sustainable high-quality water supplies*

City and Township Plans
Comprehensive Plans prepared in 2018-2019 by municipalities in the County identify land protection and natural resource management goals for the coming decades. More than half of the city plans identify needs for open space/natural area protection not related to parks acquisition, and many identify working with the County on land protection. Roughly half of the large city plans called for habitat corridors linking natural areas.

Most townships and rural centers in Dakota County participated in the Rural Collaborative Comprehensive Plan, which includes land protection and natural resource management policies that are consistent with the County’s, as shown by the following excerpt:
Rural Collaborative 2040 Comprehensive Plan Environmental Resources Policies

- Work cooperatively with Dakota County and other organizations that support the goals of protecting natural areas and corridors in southern Dakota County.
- Develop and implement a protection and management plan for natural areas that includes:
  - A cohesive system of natural areas connected by natural corridors
  - Areas identified and prioritized for preservation, protection, or restoration
  - A functional classification of natural areas based upon appropriate use, including recreation, preservation, hunting, agricultural, and private access
  - Land protection strategies for targeted areas, including voluntary conservation plans, donation or purchase of conservation easements, transfer of development rights, purchase of development rights, and acquisition
  - Strategies and standards for the long-term management of natural areas
  - A description of partnerships with other units of government to protect shared natural areas
  - Innovative and appropriate natural area agricultural practices
  - Funding and funding sources

D. Planning Principles

Guiding Principles were developed for this Plan based on research and stakeholder engagement. These principles establish primary approaches for the County in pursuing land protection and natural resource management.

1. Protect and manage land to ensure that quality natural resources exist for future generations.
2. Recognize that natural resources are not confined to jurisdictional or ownership boundaries.
3. Protect and manage natural resources as a shared responsibility.
4. Emphasize protection and management of natural resources that provide multiple benefits.
5. Emphasize connection of natural communities.
6. Manage natural resources as an adaptive process requiring a long-term commitment.
7. Serve as a catalyst for broader participation and collective action in Dakota County as a place with natural resources and systems worth protecting and managing.

Operating Principles articulate values grounding the Dakota County Land Conservation Program and are a lens through which program decisions will be made and how program work will be done:

- **Accountability**: track and report program progress toward County and Plan goals
- **Collaboration**: develop working partnerships with other agencies, organizations, and residents to achieve shared goals
- **Data-driven decision making**: use sound, science-based information as a foundation for decisions
- **Equity and inclusiveness**: engage all people who may have an interest in program activities
- **Fiscal stewardship**: make optimal use of program budget and leveraging outside funding
- **Transparency**: provide easily accessible public communication on program activities
School Field Trip in Restored Prairie

Restored Prairie, Miesville Ravine Park Reserve
III. THE LAND CONSERVATION PLAN

A. Plan Vision
The overarching vision for the Land Conservation Plan is:

The natural resources of Dakota County are collaboratively protected, improved, and managed for current and future generations.

B. Plan Goals, Strategies, and Tactics
Six goals emerged from research and community engagement. The goals aspire to desired future conditions for natural resource protection and management in the County.

The following section discusses the goals, providing a set of strategies (approaches) for reaching the desired future conditions. Strategies are supported by a set of proposed tactics (specific tasks) for the Land Conservation Program and its partners. Proposed tactics will be refined throughout implementation, as needed, related to Land Conservation Program annual work planning and landowner response to outreach. A current status is provided for each tactic – ongoing (current activity that will continue), expanded (more will be done within a current activity), or new (a new activity introduced by this Plan).

Goal 1: Ecologically important areas are prioritized for protection.
Preliminary Conservation Focus Areas (CFAs) emerged from an evaluation and refinement of previously-identified priority areas for voluntary land protection and enhanced natural resources management. CFAs include natural resource lands that are publicly protected, private easements, unprotected areas, and connecting corridors. The CFAs form a countywide network of landscapes and corridors that represent some of the County’s best natural resources, but also are a starting point for discussion with stakeholders. Section C of this chapter provides information on the process used to identify CFAs.

Strategies and Proposed Tactics:
A. Use preliminary Conservation Focus Areas (CFAs) as a framework for protecting and connecting natural areas and habitat.

1. Refine acquisition project evaluation criteria and weighting for different classifications (surface water, wetland/upland and upland) to prioritize potential land protection projects. (expanded)
2. Conduct landowner outreach within all CFAs to effectively inform and engage landowners. (expanded)
3. Create detailed, baseline information profiles for each CFA to document natural resource quality, needs, and opportunities with evolving updates. (new)
4. Identify and prioritize wetland basins for further hydrological analysis and cost estimates. (new)

Plan Goals
1. Ecologically important areas are prioritized for protection.
2. Water quality and quantity is enhanced and protected.
3. Natural resource quality is improved and sustained.
4. Biodiversity is restored and sustained.
5. The public supports and is involved in natural resource protection and management.
6. Recreational access to conservation lands is enhanced.
5. Use a range of voluntary land protection methods such as fee title and easement acquisition and land registry.\(^6\) (expanded)

6. Develop and test prioritization approaches for individual CFAs. (new)

7. Protect representative, high quality native communities (wetlands, grasslands and forests) within the County. (expanded)

8. Establish a technical advisory group to evaluate and develop recommendations for the use of property tax modifications as conservation incentives. (new)

9. Protect critical groundwater recharge areas within CFAs as identified by the County Groundwater Plan. (new)

10. Review CFA boundaries every five years and revise as needed, based on new information. (new)

B. Expand strategic partnerships with agencies and organizations.

1. Establish and begin implementing a City-County Conservation Collaborative for natural resource planning, protection, and management. (new)

Goal 2: Water quality and quantity is enhanced and protected.

Land conservation with enhanced natural resource management can be a powerful asset in improving and protecting surface and groundwater quality. The Land Conservation Program will focus on wetland protection and restoration at a large scale and protecting and restoring shoreline to improve surface water quality. The Program also can assist in implementing the new County Groundwater Plan by working with interested landowners to strategically protect vital recharge areas and sensitive groundwater resources. Several Drinking Water Supply Management Areas and other infiltration areas could benefit from land-management changes and land protection to adequately protect groundwater. These areas also would be a priority for the Land Conservation Program, whether or not the lands are located within the preliminary CFAs.

To improve water quality in these areas, it will be important to work with willing landowners to improve agricultural management practices, potentially convert row crop agricultural lands to less impactful crops, or even restore natural areas. It is envisioned that the Land Conservation Program would assist the Dakota Soil and Water Conservation District as they lead these activities.

**Strategies and Proposed Tactics:**

A. Use preliminary CFAs to identify, prioritize, protect, and restore wetland basins, shoreland, headwaters, and recharge areas to improve water quality and supply and to reduce flooding.

1. Establish evaluation criteria and weighting to prioritize potential protection and restoration projects. (expanded)

2. Conduct landowner outreach within all CFAs to effectively inform and engage landowners. (expanded)

3. Use a range of voluntary land protection methods such as fee title and easement acquisition and explore options for long-term agreements.\(^7\) (expanded)

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\(^6\) See page 49 for more information on the range of land protection tools.

\(^7\) See page 49 for more information on the range of land protection tools.
4. Use a range of natural resource management techniques to restore, enhance and maintain lands for improved water quality, infiltration and storage to reduce flooding and provide wildlife habitat benefits. (expanded)

**B. Partner with SWCD and other entities to promote, incentivize and implement water quality and quantity management and soil health practices** (e.g., functional buffers, perennial vegetation on critical recharge areas, erosion control, wetland restoration, water retention basins, and soil health).

1. Develop project goals and funding criteria. (expanded)
2. Secure new cost-share funding for best management practice implementation. (new)
3. Promote awareness of practice implementation opportunities among landowners and operators. (expanded)
4. Combine and leverage resources to implement projects. (ongoing)

**C. Protect -and restore critical infiltration areas outside CFAs identified by the County Groundwater Plan.**

1. Establish evaluation criteria and weighting to prioritize potential protection and restoration projects. (new)
2. Conduct landowner outreach outside of CFAs where important areas have been identified to effectively inform and engage landowners and initiate wetland restoration initiatives. (expanded)
3. Use a range of voluntary land protection methods such as fee title and easement purchase and long-term agreements. (expanded)
4. Use a range of natural resource management techniques to restore, enhance and maintain lands for improved water quality, infiltration and storage to reduce flooding and provide wildlife habitat benefits. (expanded)

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**Goal 3: Natural resource quality is improved and sustained.**

Natural areas are not truly protected unless the natural resources are managed over the long-term. Restoration and natural resources maintenance are necessary to protect the initial investment made in these lands, but also requires a long-term commitment of funding and effort. The need for restoration and management applies to both publicly-owned and privately-owned protected lands.

More can be accomplished on public lands through collaborative approaches, such as a City-County Conservation Collaborative (CCCC). The Collaborative would identify land protection priorities and opportunities; develop natural resource management plans and priorities for city properties; develop joint grant proposals; improve efficiencies and lower costs for purchasing seed, nursery stock, and other materials; and potentially share staff resources and equipment.

Providing funding for short- and long-term natural resource restoration, management, and maintenance on protected private land has been a critical and ongoing challenge. Precedent research did not identify a County-affiliated entity for natural resource management of private lands.

**Strategies and Proposed Tactics:**

**A. Restore, enhance, and maintain natural resources on private lands.**

1. Develop criteria and weighting for ranking potential natural resource restoration projects within CFAs. (new)
2. Develop funding formulas for restoration projects on private land within and outside of CFAs. (new)
3. Require ongoing restoration, management and maintenance activities as part of land protection agreements. (ongoing)

4. Partner with the SWCD and other entities to promote, incentivize, and implement natural resource management practices on private lands. (expanded)

5. Provide new incentives for improved natural resource management on both protected and non-protected private lands. (new)

6. Work with other jurisdictions, agencies, and organizations to share natural resource management information and techniques with private landowners. (new)

7. Explore options for using a private funding entity to secure and disburse private funds for natural resource restoration and maintenance on protected private lands. (new)

8. Develop and implement monitoring protocols of management areas to assess results. (new)

B. Restore, enhance, and maintain natural resources on public lands.

1. Develop criteria and weighting for prioritizing potential natural resource management projects within CFAs. (new)

2. Develop funding formulas for restoration projects on public lands within and outside of CFAs. (new)

3. Use the CFA framework to determine natural resource management priorities for public lands. (new)

4. Establish and implement a City-County Conservation Collaborative to increase natural resource management within ecologically significant city lands using shared and leveraged resources. (new)

5. Expand strategic partnerships to increase natural resource management using shared and leveraged resources for ecologically significant, non-County public land. (expanded)

6. Coordinate natural resource information with other public entities. (new)

7. Establish a network of natural resource restoration reference sites. (new)

8. Develop and implement monitoring protocols of management areas to assess results. (new)

Goal 4: Biodiversity is restored and sustained.
The process for identifying CFAs looked at State biodiversity data and rare species and ecosystems, as well as corridors that are vital for the movement and population health of wildlife. The use of land protection tools combined with collaborative enhanced natural resource management is intended to assist in stabilizing and sustaining the County’s native natural heritage.

Strategies and Proposed Tactics:

A. Use CFAs to protect habitat for rare, declining, and special concern species on public lands.

1. Identify and inventory areas of existing high biodiversity and high restoration potential. (expanded)

2. Develop baseline biodiversity data, goals, priorities, and monitoring protocols for the County and each CFA. (new)

3. Compile comprehensive list of plant and animal species found in the County. (new)

B. Use CFAs to protect habitat for rare, declining, and special concern species on private lands.
1. Prioritize biodiversity in CFA protection and restoration criteria, weighting, and implementation. (new)

C. Develop and implement a Pollinator Habitat Network.

   1. Develop a Pollinator Habitat Network for the County. (new)
   2. Partner with transportation agencies and utilities to improve pollinator habitat within right-of-way and corridors. (new)
   3. Partner with non-profit and other entities to improve smaller-scale pollinator habitat sites within the Pollinator Habitat Network. (new)

Goal 5: The public supports and is involved in natural resource protection and management.

This goal addresses the need for enhanced communication on the Land Conservation Program, land protection, and natural resources management. In addition to providing high quality information, this goal seeks ways to engage people who would like to be more involved in conservation activities.

Strategies and Proposed Tactics:

A. Provide timely and relevant Land Conservation information.

   1. Develop a business plan for creating a web-based network with partners for sharing natural resource information. (new)
   2. Develop inclusive and accessible information resources for the public. (new)
   3. Provide regular information and two-way communication opportunities for participating landowners. (expanded)
   4. Develop inclusive and accessible information for the public. (new)

B. Work with partners to engage the public through in-person conservation events and activities.

   1. Provide volunteer opportunities in partnership with other organizations and County departments (e.g., BioBlitz, seed collection, and vegetation and wildlife monitoring). (expanded)
   2. Provide seminars, tours, and speaking engagements. (expanded)
   3. Help promote the Soil and Water Conservation District Conservation Landowner of the Year program. (new)

Goal 6: Recreational access to conservation lands is enhanced.

Access to protected public lands with high quality natural resources enables people to learn about and appreciate nature, relax, recreate, and be inspired. For youth, early experiences in nature may help shape the next generation of conservationists and natural resource stewards. The Program will work with landowners within CFAs to explore interest in allowing some degree of public access. Across all CFAs, there should be a net increase in publicly-accessible sites, particularly to expand opportunities to experience higher quality natural areas and representative landscapes of the County.

Strategies and Proposed Tactics:

A. Provide new and enhanced opportunities for compatible outdoor recreation activities through the addition of publicly accessible lands within CFAs.

   1. Work with landowners to provide at least one publicly accessible site within each CFA. (expanded)
2. Provide at least one location for the public to access high quality, representative wetland, grassland and forest communities. (expanded)

B. Improve outdoor recreation activities on public lands through enhanced natural resource quality, information and amenities.

1. Work with other public entities to provide coordinated information about recreational and interpretive opportunities. (new)

2. Work with the DNR to provide more public amenities (kiosks, benches, trails) on state Wildlife and Aquatic Management Areas. (new)

C. Conservation Focus Areas

Evaluation of natural areas and connectivity in the County considered public and private lands that are already protected and past conservation mapping work from other plans, including:

**2002 Farmland and Natural Areas Protection Plan**
In 2002, residents identified natural open space, compiled into a “Citizen Natural Area Protection Map.” Dakota County SWCD mapped land cover and protected areas using the newly-developed Minnesota Land Cover Classification System (MLCCS). Combined analysis identified 36,000 acres of priority natural areas. Residents also identified priority farmland to protect and the Plan included 42,000 acres of productive farmland adjacent to natural corridors and within a half mile of a stream or river.

**2003 Metro Conservation Corridors**
The Minnesota DNR and Metro Greenways Program partners used the MLCCS to update a Metro Conservation Corridors map for the seven-county metro, focused on larger areas and connections between waterways and existing public lands.

**2008 Dakota County 2030 Park System Plan**
This plan proposed a 200-mile network of multi-purpose greenways connecting natural areas, parks, schools, open and civic spaces, and new development. Greenways would benefit habitat, water, and non-motorized recreation and transportation. Many corridors aligned with previously identified conservation corridors.

**2010 Vermillion River Corridor Plan**
With funding from the state Environment and Natural Resources Trust Fund, the County developed a plan for the Vermillion River Watershed to integrate water quality, wildlife and outdoor recreation.

**2015 Refined County Conservation Corridors Map**
With updates to the MLCCS, land protection projects, regional greenways, and land use changes, a refined map was developed with County Priority Natural Areas and Metro Conservation Corridors in the County, which became the basis for the County’s land conservation efforts.
1. Preliminary Conservation Focus Areas

The County’s landscape is a diverse and dynamic mixture of public and private natural areas, farmland, culturally and historically significant places, rural towns, and suburban cities — which do not exist independently of one another. These landscapes protect water, clean air, mitigate climate change impacts, and provide habitat for plants and animals that people depend on for many needs. Landscapes help drive local and regional economies (e.g., timber, grazing, farming, tourism), reflect cultural legacies, provide scenic beauty, and offer opportunities for recreation and gathering. Communities need healthy, natural landscapes to remain viable.

A more integrated effort is needed to connect habitats for biodiversity, ecological function, and climate resilience. Conservation efforts cannot ignore ownership or political boundaries but needs to take a larger view and recognize interrelated large-scale issues, such as wetland loss and declining water quality or habitat fragmentation and loss of species.

CFA Definition

To refine priorities and protect significant and sustainable natural areas and connecting corridors, this plan proposes working with landowners on a voluntary basis within landscape-oriented Conservation Focus Areas (CFA). The preliminary CFAs were identified to include high quality natural areas, undeveloped open space and agricultural lands, and interconnecting corridors to create an extensive, integrated natural area system.

The preliminary CFAs encompass **82,115 acres** and include a combination of public and private lands. Examples of public lands included in the CFAs are the Minnesota Valley National Wildlife Refuge, State Aquatic and Wildlife Management Areas and Scientific and Natural Areas, Dakota County Regional Parks, and several city-owned community parks, totaling about 29,703 acres. This plan suggests greater collaboration with other public entities managing natural resource lands.

CFAs also include protected and unprotected private lands. For the approximately 8,533 acres of private lands already under permanent protection, this plan suggests greater outreach and collaboration with landowners on restoration, enhancement and long-term natural resource management. For lands that are not currently protected, this plan will continue to rely on outreach and working with willing landowners to protect land and manage natural resources over the long-term through a variety of incentives.
CFA IDENTIFICATION METHOD
The CFAs were developed through review of previous plans and Geographic Information Systems (GIS) analysis of:

- surface water and hydrology
- presence of larger drained wetland basins
- public and private protected lands
- land cover
- natural resource quality and restoration potential
- natural area size and connectivity
- land ownership

The CFAs presented in this plan are preliminary and would become the framework for future outreach and subsequent land conservation projects. Outreach would be a first step in convening landowners to assess the issues and opportunities for each CFA and determine priorities, goals, and future land protection and natural resource improvement projects. CFA boundaries will likely evolve based on the landowner discussions. Some areas may be removed from the map due to lack of landowner interest or relative importance. Other lands could be added to CFAs. Wetland restoration hydrology involves many unknowns and will likely require project boundary adjustments and different approaches.

Potential wetland restoration areas are included in the preliminary CFAs. The identification of proposed wetland restoration areas focused on larger drained basins (most are currently cultivated) with relatively fewer landowners, using the following method:

1. Using the County Soil Survey and MLCCS data, a map of cultivated, hydric (former wetland) soils was developed.
2. Light Detection and Ranging landform sensing technology (LIDAR) was used to identify basins. Relatively larger scale potential wetland basins were selected and divided into units.
3. Using basin size, proximity, land ownership and avoidance of roads, individual basins were aggregated to maximize size and minimize multiple ownership parcels.

The location and impact of underground drain tile is largely unknown, which will influence the feasibility and extent of any wetland restoration project. Basin boundaries can change based on further study. More than 14,000 acres of potential wetland restoration basins also are identified.

The following map shows preliminary CFAs totaling 82,115 acres.
### Preliminary Conservation Focus Areas and Proposed Large Wetland Restoration Basins

<table>
<thead>
<tr>
<th>Land Cover</th>
<th>Public</th>
<th>Protected Private Land</th>
<th>Private Land</th>
<th>Total Acres</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Floodplain - Natural vegetation</td>
<td>7,334</td>
<td>1,145</td>
<td>7,511</td>
<td>15,990</td>
<td>20</td>
</tr>
<tr>
<td>Non-hydric Cultivated Land</td>
<td>2,466</td>
<td>3,349</td>
<td>7,844</td>
<td>13,659</td>
<td>17</td>
</tr>
<tr>
<td>Upland Forest/Woodland</td>
<td>4,151</td>
<td>367</td>
<td>6,367</td>
<td>10,885</td>
<td>13</td>
</tr>
<tr>
<td>Cultivated Wetlands</td>
<td>365</td>
<td>1,860</td>
<td>7,626</td>
<td>9,851</td>
<td>12</td>
</tr>
<tr>
<td>Open Water</td>
<td>7,815</td>
<td></td>
<td></td>
<td>7,815</td>
<td>10</td>
</tr>
<tr>
<td>Floodplain - Cultivated</td>
<td>175</td>
<td>752</td>
<td>5,885</td>
<td>6,812</td>
<td>8</td>
</tr>
<tr>
<td>Grassland/Pasture</td>
<td>3,049</td>
<td>403</td>
<td>2,962</td>
<td>6,414</td>
<td>8</td>
</tr>
<tr>
<td>Designated Wetlands</td>
<td>1,224</td>
<td>589</td>
<td>3,346</td>
<td>5,159</td>
<td>6</td>
</tr>
<tr>
<td>Other Artificial*</td>
<td>1,090</td>
<td>47</td>
<td>1,984</td>
<td>3,121</td>
<td>4</td>
</tr>
<tr>
<td>Public Right-of-Way</td>
<td>1,969</td>
<td>0</td>
<td>0</td>
<td>1,969</td>
<td>2</td>
</tr>
<tr>
<td>Designated 50- and 16.5-foot wide Stream Buffers</td>
<td>65</td>
<td>21</td>
<td>354</td>
<td>440</td>
<td>&lt;1</td>
</tr>
<tr>
<td><strong>Totals</strong></td>
<td>29,703</td>
<td>8,533</td>
<td>43,879</td>
<td>82,115</td>
<td>100</td>
</tr>
</tbody>
</table>
PRELIMINARY CFA DESCRIPTIONS

The preliminary CFAs represent some of the highest quality natural resources in the County and include a diverse mix of natural landcover types, as well as agricultural land. They also represent opportunities to restore natural resource integrity and functions and interconnect high-quality habitat.

The preliminary CFAs are organized into 24 named areas. Due to their size or river corridor character, some CFAs are further subdivided into sub-units.

1. 180th Street Marsh
2. Cannon River
3. Chimney Rock
4. Chub Creek
5. Chub Lake
6. Darden Creek
7. Douglas Township Natural Area
8. Dutch Creek
9. Etter Creek
10. Hampton Woods
11. Lake Marion
12. Lebanon Hills
13. Marcott Lakes
14. Minnesota River
   A. Black Dog Unit
   B. Fort Snelling Unit
   C. Mendota/Lilydale Unit
   D. Oheyawahe Unit
15. Mississippi River
   A. Pine Bend Unit
   B. Spring Lake Unit
   C. River Bluffs Unit
   D. Vermillion Bottoms Unit
16. Mud Creek
17. Orchard Lake
18. Pine Creek
19. River to River Greenway
20. Sand Coulee
21. Trout Brook
22. Vermillion Highlands
23. Vermillion River Main Stem
24. Vermillion River Tributaries
The preliminary CFAs encompass the majority of the sites in the County identified by the Minnesota Department of Natural Resources (DNR) as having high or outstanding biodiversity. A broad range of representative native communities of varying ecological quality exist within the preliminary CFA boundaries. The CFAs also include existing and potential habitat for rare and declining native species, including many with legal protection status. Examples of Species of Greatest Conservation Need associated with some of these communities are provided below.

### Native Communities and Species of Greatest Conservation Need Found within CFAs

<table>
<thead>
<tr>
<th>Native Community found in CFAs</th>
<th>Example Species of Greatest Conservation Need</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Wetlands</strong></td>
<td></td>
</tr>
<tr>
<td>Black Ash - (Red Maple) Seepage Swamp</td>
<td>Sedge wren (bird)</td>
</tr>
<tr>
<td>Calcareous Fen (Southeastern)</td>
<td>Nelson’s Sharp-tailed Sparrow (bird)</td>
</tr>
<tr>
<td>Northern Wet Meadow/Carr</td>
<td>Two-spotted Skipper (insect)</td>
</tr>
<tr>
<td>Sedge Meadow</td>
<td>Least Bittern (bird)</td>
</tr>
<tr>
<td>Seepage Meadow/Carr</td>
<td>Virginia Rail (bird)</td>
</tr>
<tr>
<td>Southern Seepage Meadow/Carr</td>
<td>Blanding’s Turtle (reptile)</td>
</tr>
<tr>
<td>Spikerush - Bur Reed Marsh (Prairie)</td>
<td></td>
</tr>
<tr>
<td>Tamarack Swamp (Southern)</td>
<td></td>
</tr>
<tr>
<td>Willow - Dogwood Shrub Swamp</td>
<td></td>
</tr>
<tr>
<td><strong>Grasslands</strong></td>
<td></td>
</tr>
<tr>
<td>Dry Barrens Prairie (Southern)</td>
<td>Loggerhead Shrike (bird)</td>
</tr>
<tr>
<td>Dry Bedrock Bluff Prairie (Southern)</td>
<td></td>
</tr>
<tr>
<td>Dry Hill Prairie (Southern)</td>
<td>Henslow’s Sparrow (bird)</td>
</tr>
<tr>
<td>Dry Sand - Gravel Prairie (Southern)</td>
<td></td>
</tr>
<tr>
<td>Mesic Prairie (Southern)</td>
<td>Western Hognose Snake (reptile)</td>
</tr>
<tr>
<td>Wet Prairie (Southern)</td>
<td>Prairie Vole (mammal)</td>
</tr>
<tr>
<td><strong>Savanna</strong></td>
<td>Karner Blue (insect)</td>
</tr>
<tr>
<td>Dry Sand - Gravel Oak Savanna (Southern)</td>
<td></td>
</tr>
<tr>
<td><strong>Forest and Woodland</strong></td>
<td></td>
</tr>
<tr>
<td>Red Oak - Sugar Maple - Basswood - Forest</td>
<td>Acadian Flycatcher (bird)</td>
</tr>
<tr>
<td>Red Oak - White Oak Forest</td>
<td>Wood Thrush (bird)</td>
</tr>
<tr>
<td>Silver Maple Floodplain Forest</td>
<td>Cerulean Warbler (bird)</td>
</tr>
<tr>
<td>Southern Dry-Mesic Oak Forest</td>
<td>Prothonotary Warbler (bird)</td>
</tr>
<tr>
<td>Sugar Maple - Basswood Forest</td>
<td>Four-toed Salamander (amphibian)</td>
</tr>
<tr>
<td>White Pine - Oak - Sugar Maple Forest</td>
<td>Woodland Vole (mammal)</td>
</tr>
<tr>
<td>Pin Oak - Bur Oak Woodland</td>
<td>Eastern Pipistrelle (mammal)</td>
</tr>
<tr>
<td>White Pine - Oak Woodland</td>
<td>Northern Long-Eared Bat (mammal)</td>
</tr>
<tr>
<td><strong>Lakes, Rivers, and Streams</strong></td>
<td></td>
</tr>
<tr>
<td>Shallow Lake</td>
<td>Higgin’s Eye Pearly Mussel (mussel)</td>
</tr>
<tr>
<td>Deep Lake</td>
<td>Pallid Shiner (fish)</td>
</tr>
<tr>
<td>Coldwater Stream</td>
<td>Paddlefish (fish)</td>
</tr>
<tr>
<td>Major River</td>
<td></td>
</tr>
</tbody>
</table>

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8 DNR, Natural Heritage Information System GIS Database
Prothonotary Warbler, National Audubon Society

Higgins Eye Pearly Mussel, US Fish and Wildlife Service

Blanding’s Turtle, US Fish and Wildlife Service

Redheaded Woodpecker, National Audubon Society
The following profile for the preliminary **Marcott Lakes CFA** in Inver Grove Heights provides an example of the information that will be developed for each CFA.

**Size and Ownership**
650 acres
93 Landowners
10.8 percent public protected land
34.4 percent private protected land
54.8 percent unprotected land

**Unique or Significant Features**
This preliminary CFA encompasses three of the four southernmost lakes in the Marcott Chain of Lakes, which are the most pristine with visibility reaching depths of 20 to 30 feet.

**Vegetation**
Forest/Woodlands are varied and include oak woodland-brushland, non-native deciduous woodland, oak forest, mesic oak forest, and conifer plantations.

Grasslands include long grasses, medium-tall grass altered/non-native dominated, short grasses and mixed trees, mixed planted and/or native grasses,

**Wildlife**
Although not documented on protected land, Blanding’s turtle was recorded within one mile. This CFA contains suitable habitat for this species.

Sixteen to twenty bird Species of Greatest Conservation Need (SGCN) have been recorded within the vicinity of the Marcott Lakes CFA, including rose-breasted grosbeak, eastern pewee, black-billed cuckoo, and wood thrush.

Other SGCN documented over many years on protected land include big brown bat, least weasel, five-lined skink, and spotted salamander.
2. Additional Eligible Lands Outside of CFAs

A. GROUNDWATER PROTECTION AREAS
Groundwater aquifer recharge areas are vital in ensuring an adequate water supply in the future. Depending on soil types, some portions of the County have faster infiltration rates ranging from a half an inch to more than five inches per hour.

Where groundwater is highly vulnerable to contamination, voluntary land protection in tandem with adoption of groundwater-protective management practices provides another option for improving groundwater quality over time. The County Land Conservation Program will assist, as needed, in protecting high priority aquifer recharge areas outside of CFAs.

The following map depicts significant recharge areas outside of the preliminary CFAs, also excluding developed areas with more than ten percent impervious surface:

**Significant Aquifer Recharge Areas**
B. OTHER NATURAL FEATURES
Additional areas outside of the preliminary CFAs also have ecological value and would be evaluated for protection based on landowner inquiry. These areas include:

- More than 1,800 acres of forests/woodlands with greater than 40 contiguous acres
- Small restorable wetlands
- Locally significant open spaces
- Small sites that could provide native plants seeds

Restored Prairie on protected private property, Eureka Township

Woodland Easement, East Lake Community Park, Lakeville
D. Natural Resource Management

1. Purposes
Natural resource management is vital for Conservation Focus Areas and protected lands, whether private or public. Ongoing stewardship maintains ecological functions as part of a larger regional natural framework.

Dakota County’s rich natural heritage is based on its location at the crossroads of several ecological subsections identified by the Minnesota Department of Natural Resources, including the St. Paul Baldwin Plains and Moraines, Big Woods, Oak Savanna, Rochester Plateau, Bluff land, and three Major River systems. Although little pre-settlement landscape remains in Dakota County, high quality natural areas and open space areas could be restored and managed as wetland, prairie, and woodland.

Restoration and management of these natural areas can increase provision of a broad range of ecological services. These services provide real economic benefit that measurable in dollars per year but are often regarded as “free” and generally not well-accounted for in a range of land uses and development. Many studies have evaluated economic values for these services9. For more information, please see Appendix 3.

Natural resources also influence how a community defines itself, with effects on culture and the economy, beyond the ecological benefits often cited as the main purpose of natural areas. Parks, open spaces, greenways, and agricultural landscapes add value and create a sense of place that attracts new residents and convinces current residents to stay. Raising awareness of how natural resources positively affect the culture and economy of a community establishes the rationale for protecting and properly managing natural resources as a widely accepted, normal part of a community’s ongoing and future activities.

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Economic Valuation of Ecosystem Services (ES):
Middle Cedar River Watershed, Iowa, 20119
A valuation study of ecosystem service benefits in the Middle Cedar River Watershed in Iowa identified 14 categories of ES across eight land cover classes in the 1.5 million-acre (~2,400 square miles) watershed. The study estimated that the ES generated between $548 million and $1.9 billion in goods and services. Wetlands constitute 2.3 percent of the land cover in the watershed but were found to contribute 16.5 to 30.1 percent of the total ES value. The top-ranking ES provided by wetlands was flood risk mitigation, valued at $2,544 to $3,651 per acre per year.
2. Natural Resource Management Issues and Opportunities

Restoring natural places and systems amid a long history of ecosystem alteration and loss must address systemic changes over time, current efforts and issues, and growing research on effective approaches.

Systemic changes that have contributed to the decline of native species and ecosystems include:

1. **Land use change** since the mid 1800’s: Native ecosystems were removed or altered as the County was farmed and urbanized, with loss and fragmentation of native species habitat, disrupted connectivity between habitat areas, and a reduction in the number of native species.

2. **Removal of natural regulatory processes** such as fire and grazing, contributes to changes in landscape composition and health. Fire recycles excess nutrients and repeated fire prevents colonization by pioneering woody plants that convert grasslands to shade-dominated woodlands.

3. **Hydrologic changes** from urban stormwater systems and agriculture (e.g., drain tile) have increased runoff entering natural waterways instead of being infiltrated on land. Warm water from streets and fields enters lakes, streams, and wetlands, carrying chemicals, nutrients, and sediment.

4. **Invasive species** include a growing number of plants and animals. Without natural predators or diseases, non-native invasive species outcompete the native species and ecosystems.

5. **Climate** data has indicated warmer and wetter conditions with more frequent severe weather events and weather extremes, with impacts to native ecosystems.

**Ongoing Issues** include:

- Reversing the systemic changes mentioned above is difficult, even when possible. Mitigation of their impacts at a smaller scale requires a long-term effort.
- Natural resource management requires an ongoing commitment to maintenance.
- Despite increased public investment in protecting land and water quality, more restoration and natural resource management remains to be done.
- Most land will remain in private ownership and pose many challenges in addressing long-term natural resource management and costs.
- Natural resources management would benefit from a clear and shared framework, including language and terminology.

**Natural Resource Management Recommendations** include:

- Basing management decisions on sound science and professional practice.
- Involving the public and landowners, to benefit from diverse perspectives, needs, and interests.
- Working across jurisdictional and ownership boundaries, through partnerships and collaboration.
- Having clearly-conceived goals that are realistic, with sufficient time horizons.
- Having clear performance metrics to track progress toward project goals.
- Continuing natural resource monitoring and assessment over time.
- Developing and using clear standards for restoration and management goals, effective monitoring, and adapting project practices when needed.
• Providing adequate budgets to sustain restoration and management efforts over time.
• Sharing resource and management information with landowners, partners, and the public.

Ecological Restoration and Management

Ecological restoration rebuilds ecosystems by stabilizing and enhancing the diversity, resilience, and natural functions of ecosystems. Healthy ecosystems are usually diverse in plants and wildlife, have few invasive plants, have healthy soils and good reproduction of important species, and generate ecosystem services, such as clean air and water, regulating and purifying stormwater runoff, recharging groundwater, controlling erosion and building soil.

The composition and function of restored ecosystems is intended to be similar to native ecosystems. The development of site-specific Natural Resource Management Plans (NRMPs) is fundamental to effective natural resource management. NRMPs describe the ecological setting, existing conditions, and goals for natural resources. Plans define management units, tasks, costs, and a schedule of work. Successful natural resource restoration and management plans are flexible. Ecosystems may not respond as expected, or new technology and scientific understanding may emerge. NRMPs are a starting point and should be updated based on site response and new information. Regular monitoring of conditions and reporting on progress provides a basis for adjusting NRMPs, also referred to as adaptive management.

Ecological restoration involves short- and long-term phases. The short-term phase is often more intensive, but provides an essential foundation for the overall restoration. Establishing the proposed plant community structure (e.g., tree canopy, shrub layer) often lasts three to four years. Tasks can include woody brush removal, invasive species control, seeding/planting native species, and using bio-control techniques when available. After initial restoration, ongoing management is essential to protect the investment already made. Typical tasks include spot spraying of invasive plants, re-seeding disturbed or poorly developing areas, re-planting woody plants, and maintaining the right disturbances, such as fire, to perpetuate the plant community.

It is important to develop and use consistent standards and language for describing natural resource management. The Five-Star Ecological Recovery Reference System, developed by the Society for Ecological Restoration (SER), provides a potential framework for setting goals and monitoring progress. The Five Star model:

• Evaluates progression of an ecosystem based on recovery outcomes, not restoration activities.
• Is based on key attributes, or broad goals supported by more specific goals and objectives.
• Recognizes that each restoration project does not necessarily start at the same level and full recovery of some attributes will be difficult to achieve.

10 https://www.ser.org/page/SERNews3113
The following table and adapted graphic provide an example set of attributes, goals, and measures.

<table>
<thead>
<tr>
<th>Attributes</th>
<th>Goals</th>
<th>Example Measures</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>1. Absence of Threats</strong></td>
<td>• Reduce invasive species</td>
<td>Common buckthorn, honeysuckle, garlic mustard, and black locust are not present</td>
</tr>
<tr>
<td><strong>2. Physical Conditions</strong></td>
<td>• Restore wetlands and increase surface water storage and quality</td>
<td>Acre-feet of new water storage</td>
</tr>
<tr>
<td><strong>3. Species Composition</strong></td>
<td>• Increase number of desirable plants</td>
<td>List of all native species evidently persisting on the site, particularly any threatened species</td>
</tr>
<tr>
<td><strong>4. Structural Diversity</strong></td>
<td>• Establish desired vegetative layers</td>
<td>Assemblage of species and age</td>
</tr>
<tr>
<td><strong>5. Ecosystem Function</strong></td>
<td>• Maximize number of wildlife indicator species</td>
<td>Breeding bird census</td>
</tr>
<tr>
<td><strong>6. Connectivity</strong></td>
<td>• Maintain and increase wildlife movement</td>
<td>Wildlife species using adjacent/nearby sites</td>
</tr>
</tbody>
</table>

This adapted Ecological Recovery Wheel is based on a more complex SER Ecological Recovery Wheel. It can be used to visually depict the status of a site at a specific time in the restoration process. This can be an important tool for comparing efforts but requires coordination and acceptance of established standards and measurements. The concentric rings are used to represent a “one to five” assessment for each attribute over time.
E. Potential Ten-Year Outcomes for the Plan

Targeted ten-year outcomes and associated cost estimates were developed for four protection and ownership scenarios:

- Publicly-owned conservation land within Preliminary Conservation Focus Areas
- Protected private lands within Preliminary Conservation Focus Areas
- Non-protected private land within Preliminary Conservation Focus Areas
- Non-protected private land outside of Preliminary Conservation Focus Areas

Acquisition and restoration costs were then estimated for the following eleven major landscape types:

- Open water
- Floodplain – natural vegetation
- Floodplain – cultivated
- Designated wetlands
- Designated 50- and 16.5-foot wide stream buffers
- Upland forest/woodlands
- Cultivated, non-hydric land
- Cultivated hydric land/wetland
- Grassland/pasture
- Public right-of-way
- Other

The total estimated cost for protecting and restoring lands within the Preliminary Conservation Focus Areas and areas identified outside of the CFAs is $367M, based on past program experience, current land and easement values and unit restoration costs. These estimates were then adjusted based on the following key assumptions:

- 80 percent of public agencies would be interested in participating in partnership efforts to restore their lands, the majority of floodplain acres would not require restoration and one third of grasslands have already been restored
- 30 percent of landowners with County easements would be willing to additionally protect and restore land.
- 20 percent of new landowners would be interested in protecting and restoring some of their land.
- Continued availability of existing and future State and other non-County grant funds
- County cost-share likely would be 20 to 25 percent for protection and restoration activities

Based on the scenarios, landscape types, and assumptions, a range of land protection and restoration targets for the next ten years are:

- 2,500-5,000 acres of additional land protection at a projected County cost of $5.2M-$10.4M.
- 4,000-15,600 acres of additional restoration at a projected County cost of $3.8M-$7.6M.
IV. IMPLEMENTATION

A. Establishing Priorities
The following section discusses prioritization of plan actions that should occur early in implementation and at the geographic level, to identify approaches for initiating work within Conservation Focus Areas.

1. Priorities for Plan Actions
Goals, strategies, and tactics are summarized in the following table with preliminary priorities suggested for strategies. The fourth column identifies generally when the tactic would be initiated over the ten-year life of this Plan: within one-two years (2020-2021), within three-four years (2022-2023), or within five or more years (2024 and beyond). Determining initiation timeframes is based in part on overall priority and partly on the availability of needed resources and information. It is useful to note that some of the tactics are discrete tasks that can be completed in less than one year, others will be multi-year projects, and many will be ongoing activities. Implementation and prioritization of strategies and tactics are subject to County Board approval, through annual budgeting, work planning processes, and partner considerations.

<table>
<thead>
<tr>
<th>GOALS</th>
<th>STRATEGIES</th>
<th>PROPOSED TACTICS</th>
<th>STATUS</th>
<th>TIMEFRAMES</th>
</tr>
</thead>
<tbody>
<tr>
<td>Goal 1</td>
<td>A. Use preliminary Conservation Focus Areas (CFAs) as a framework for protecting and connecting natural areas and habitat. Priority: HIGH</td>
<td>1. Refine acquisition project evaluation criteria and weighting for different classifications.</td>
<td>Expanded</td>
<td>2020</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2. Conduct landowner outreach within all CFAs.</td>
<td>Expanded</td>
<td>2020-2021</td>
</tr>
<tr>
<td></td>
<td></td>
<td>3. Create detailed, baseline information profiles for each CFA.</td>
<td>New</td>
<td>2020-2021</td>
</tr>
<tr>
<td></td>
<td></td>
<td>4. Identify and prioritize wetland basins.</td>
<td>New</td>
<td>2020-2025</td>
</tr>
<tr>
<td></td>
<td></td>
<td>5. Use a range of voluntary land protection methods.</td>
<td>Expanded</td>
<td>2020-2030</td>
</tr>
<tr>
<td></td>
<td></td>
<td>6. Develop and test conservation approaches for individual CFAs.</td>
<td>New</td>
<td>2020-2024</td>
</tr>
<tr>
<td></td>
<td></td>
<td>7. Protect representative, high quality native communities.</td>
<td>Expanded</td>
<td>2020-2030</td>
</tr>
<tr>
<td></td>
<td></td>
<td>8. Establish a technical advisory group on property tax modifications as conservation incentives.</td>
<td>New</td>
<td>2020-2021</td>
</tr>
<tr>
<td></td>
<td></td>
<td>9. Protect critical groundwater recharge areas within CFAs.</td>
<td>New</td>
<td>2022-2030</td>
</tr>
<tr>
<td></td>
<td></td>
<td>10. Review CFA boundaries every five years and revise as needed.</td>
<td>New</td>
<td>2025-2030</td>
</tr>
<tr>
<td></td>
<td>B. Expand strategic partnerships with agencies and organizations. Priority: MEDIUM</td>
<td>1. Establish and begin implementing a City-County Conservation Collaborative for natural resource planning and protection.</td>
<td>New</td>
<td>2020-2021</td>
</tr>
<tr>
<td>GOALS</td>
<td>STRATEGIES</td>
<td>PROPOSED TACTICS</td>
<td>STATUS</td>
<td>TIMEFRAMES</td>
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<tr>
<td><strong>Goal 2</strong>&lt;br&gt;Water quality and quantity is enhanced and protected.</td>
<td>A. Use CFAs to identify, prioritize, protect, and restore wetlands, shoreland, headwaters, and recharge areas for water quality and supply and flood reduction. Priority: HIGH</td>
<td>1. Establish evaluation criteria and weighting to prioritize potential water quality projects.</td>
<td>Expanded</td>
<td>2020</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2. Conduct landowner outreach within all CFAs.</td>
<td>Expanded</td>
<td>2020-2021</td>
</tr>
<tr>
<td></td>
<td></td>
<td>3. Use a range of voluntary land protection methods.</td>
<td>Expanded</td>
<td>2020-2030</td>
</tr>
<tr>
<td></td>
<td></td>
<td>4. Use a range of natural resource management techniques.</td>
<td>Expanded</td>
<td>2020-2030</td>
</tr>
<tr>
<td></td>
<td>B. Partner with SWCD and other entities to promote, incentivize and implement water-quality and quantity management and soil health practices. Priority: MEDIUM</td>
<td>1. Develop program goals and funding criteria.</td>
<td>Expanded</td>
<td>2020</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2. Secure new cost-share funding for BMPs.</td>
<td>New</td>
<td>2021-2030</td>
</tr>
<tr>
<td></td>
<td></td>
<td>3. Promote awareness of practice opportunities.</td>
<td>Expanded</td>
<td>2020-2030</td>
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<tr>
<td></td>
<td></td>
<td>4. Combine and leverage resources.</td>
<td>Ongoing</td>
<td>2020-2030</td>
</tr>
<tr>
<td></td>
<td>C. Protect and restore critical infiltration areas outside of CFAs identified in the County Groundwater Plan. Priority: LOW</td>
<td>1. Establish project criteria and weighting</td>
<td>New</td>
<td>2020</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2. Conduct landowner outreach outside of CFAs.</td>
<td>Expanded</td>
<td>2021-2030</td>
</tr>
<tr>
<td></td>
<td></td>
<td>3. Use a range of voluntary land protection methods.</td>
<td>Expanded</td>
<td>2020-2030</td>
</tr>
<tr>
<td></td>
<td></td>
<td>4. Use a range of natural resource management techniques for water quality, infiltration and storage and habitat.</td>
<td>Expanded</td>
<td>2020-2030</td>
</tr>
<tr>
<td><strong>Goal 3</strong>&lt;br&gt;Natural resource quality is improved and sustained.</td>
<td>A. Restore, enhance, and maintain natural resources on private lands. Priority: HIGH</td>
<td>1. Develop criteria and weighting for restoration projects within CFAs.</td>
<td>New</td>
<td>2020</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2. Develop funding formulas for restoration projects on private land within and outside of CFAs.</td>
<td>New</td>
<td>2020</td>
</tr>
<tr>
<td></td>
<td></td>
<td>3. Require ongoing restoration, management and maintenance as part of protection agreements.</td>
<td>Ongoing</td>
<td>2020-2030</td>
</tr>
<tr>
<td></td>
<td></td>
<td>4. Partner with the SWCD and other entities on natural resource management on private lands.</td>
<td>Expanded</td>
<td>2020-2030</td>
</tr>
<tr>
<td></td>
<td></td>
<td>5. Provide new incentives for improved management on private lands.</td>
<td>New</td>
<td>2021-2030</td>
</tr>
<tr>
<td></td>
<td></td>
<td>6. Work with other organizations to share natural management information and techniques with private landowners</td>
<td>New</td>
<td>2021-2030</td>
</tr>
<tr>
<td></td>
<td></td>
<td>7. Explore a private funding entity for resource management on protected private lands.</td>
<td>New</td>
<td>2020-2021</td>
</tr>
<tr>
<td></td>
<td></td>
<td>8. Develop and implement monitoring protocols of management areas to assess results.</td>
<td>New</td>
<td>2020</td>
</tr>
<tr>
<td></td>
<td>B. Restore, enhance, and maintain natural resources on public lands. Priority: Medium</td>
<td>1. Develop criteria and weighting resource management projects within CFAs.</td>
<td>New</td>
<td>2020</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2. Develop funding formulas for restoration projects on public lands within and outside of CFAs.</td>
<td>New</td>
<td>2020</td>
</tr>
<tr>
<td></td>
<td></td>
<td>3. Use CFA framework to determine natural resource priorities on public lands.</td>
<td>New</td>
<td>2020-2021</td>
</tr>
<tr>
<td></td>
<td></td>
<td>4. City-County Conservation Collaborative for management of ecologically significant city lands.</td>
<td>New</td>
<td>2020-2021</td>
</tr>
<tr>
<td>GOALS</td>
<td>STRATEGIES</td>
<td>PROPOSED TACTICS</td>
<td>STATUS</td>
<td>TIMEFRAMES</td>
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<tr>
<td>Goal 4</td>
<td>Biodiversity is restored and sustained.</td>
<td>A. Use CFAs to protect habitat for rare, declining, and special concern species on public lands. Priority: HIGH</td>
<td>1. Inventory areas of high biodiversity and restoration potential.</td>
<td>Expanded</td>
</tr>
<tr>
<td></td>
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<td></td>
<td>2. Develop baseline biodiversity data, goals, priorities, and monitoring protocols.</td>
<td>New</td>
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<td>4. Compile list of plant and animal species in Dakota County.</td>
<td>New</td>
</tr>
<tr>
<td></td>
<td></td>
<td>B. Use CFAs to protect habitat for rare, declining, and special concern species on private lands. Priority: MEDIUM</td>
<td>1. Prioritize biodiversity in CFA criteria, weighting and implementation.</td>
<td>New</td>
</tr>
<tr>
<td></td>
<td></td>
<td>C. Develop and implement a pollinator habitat network. Priority: LOW</td>
<td>1. Develop a Pollinator Habitat Network for the County</td>
<td>New</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>2. Partner with transportation agencies and utilities to improve habitat within right-of-way.</td>
<td>New</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>3. Partner with other entities to improve smaller scale pollinator habitat sites within the network.</td>
<td>New</td>
</tr>
<tr>
<td>Goal 5</td>
<td>The public supports and is involved in natural resource protection and management</td>
<td>A. Provide timely and relevant natural resource information. Priority: HIGH</td>
<td>1. Develop a business plan for a web-based network for sharing natural resource information.</td>
<td>New</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>2. Develop web-based natural resource information network</td>
<td>New</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>3. Provide regular information and opportunities for participating landowners.</td>
<td>Expanded</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>4. Develop inclusive and accessible public information.</td>
<td>New</td>
</tr>
<tr>
<td></td>
<td></td>
<td>B. Work with partners to engage the public through conservation events and activities. Priority: LOW</td>
<td>1. Provide volunteer opportunities in partnership with other organizations and County departments.</td>
<td>Expanded</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>2. Provide seminars, tours, and speaking engagements</td>
<td>Expanded</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>3. Help promote SWCD’s Conservation Landowner of the Year Program</td>
<td>New</td>
</tr>
<tr>
<td>Goal 6: Recreational access to conservation lands is enhanced</td>
<td>A. Provide new and enhanced opportunities for compatible outdoor recreation activities through addition of publicly accessible lands within CFAs. Priority: MEDIUM</td>
<td>1. Work with landowners to expand and improve publicly accessible sites within each CFA.</td>
<td>Expanded</td>
<td>2020-2030</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>2. Provide at least one location for the public to access high quality, representative wetland, grassland and forest communities.</td>
<td>Expanded</td>
</tr>
</tbody>
</table>
2. Establishing CFA Priorities

The Preliminary Conservation Focus Areas are the primary geographic focus for this Plan. While unprotected lands within CFAs would be automatically eligible for protection, the Land Conservation Program will still need a mechanism to evaluate and prioritize projects as they are submitted from CFA landowners.

A. PRIORITIES ACROSS CONSERVATION FOCUS AREAS

Implementation of this Plan will involve outreach to all landowners in all CFAs after Plan adoption. The Land Conservation Program will respond to all expressions of landowner interest. CFAs with greater interest among landowners would move up in priority for convening the CFAs landscape conservation dialogues.

In addition to priorities based on the degree of landowner interest from initial outreach efforts, the presence of larger-scale wetland restoration basins would increase the priority level of a CFA to begin the process of convening landowners and working to develop projects.

B. PRIORITIES WITHIN CONSERVATION FOCUS AREAS

CFA-level Priorities will be identified through group landowner meetings and with individual landowners. This plan proposes establishing one to three pilot landscape conservation projects involving individual CFAs in 2021. Early on in the process, the goal is to convene landowners to discuss their priorities for their CFA.

Updated project evaluation criteria will reflect at least three types of land protection projects:

- **Areas with Surface Water Present**: including priority natural areas, natural area conservation zones, greenway corridors, areas adjacent to water, priority groundwater recharge areas, and areas with flood reduction or storage potential. Additional consideration will be given to public health benefits, urban projects, and areas adjacent to protected land.

- **Areas with a Combination of Uplands and Wetlands**: including the same categories identified above -- priority natural areas, natural area conservation zones, greenway corridors, areas adjacent to water, priority groundwater recharge areas, and areas with flood reduction or storage potential. Additional consideration will be given to public health benefits, urban projects, and areas adjacent to protected land.

- **Upland Forest and Grassland**: including priority natural areas, natural area conservation zones, greenway corridors, and priority groundwater recharge areas. Additional consideration will be given to urban projects, and areas adjacent to protected land.
C. PRIORITIES FOR OTHER COUNTYWIDE NATURAL AREAS (OUTSIDE OF CFAS)
Although the CFAs are the primary plan focus, additional areas outside of the CFAs are important to protect and restore. Apart from CFAs, natural areas with at least one of the following significant natural characteristics are eligible for protection under the Land Conservation Program:

- Includes ecologically significant features
- Provides important wildlife habitat
- Is adjacent to a river, lake, or stream
- Is adjacent to existing protected property with natural habitat
- Is located within a designated greenway corridor
- Provides other environmental benefits (e.g., surface water or groundwater quality protection, aquifer recharge, flood control, connectivity). Depending on the benefits, this may be considered as more than one criterion to eligibility
- Is considered locally significant open space

Examples of other natural areas that merit review for protection are small woodlands at least 40 acres in size, restorable wetlands, and other natural areas with habitat characteristics or known species of concern.

D. PRIORITIES FOR NATURAL RESOURCE MANAGEMENT PROJECTS
Criteria for evaluating natural resource management projects within and outside of CFAs will be developed to address water quality goals, ecological benefits, social considerations, economics, and project locations, including:

**Water Quality**
- Improves water retention and infiltration
- Retains water in stream headwaters
- Installs stream channel and shoreline stabilization projects
- Promotes functional vegetative buffers along water resources in areas where they are not already required by regulations and/or restores native or desirable vegetation in buffers that consist of non-desirable species
- Promotes perennial vegetation on critical recharge areas
- Implements erosion control practices
- Promotes soil health
- Improves habitat

**Ecological**
- Existing high biodiversity
- Presence of rare or unique species
- Offers opportunity to develop baseline biodiversity data
- Offers opportunity to develop comprehensive list of plant and animal species
- Improves pollinator habitat
- Connects existing natural areas or restorable areas
- Improves SGCN habitat
- Cessation of threats from over-utilization or elimination and control of invasive species
- Reinstatement of hydrologic conditions
- Elimination of undesirable plants and animal species and promotion of desirable species
• Reinstatement of structural layers, food webs, and spatial diversity
• Promote connection of habitat links into bigger, functional whole
• Difficulty of restoration
• Conditions of adjoining lands

Social
• Promotes landowner involvement
• Promotes City-County Conservation Collaborative on ecologically significant land
• Expands strategic partnerships with other entities
• Promotes information sharing with other entities
• Provides public participation opportunities
• Includes areas of public use or visibility
• Provides potential education opportunities

Economic
• Cost
• Leveraged non-County funding resources
• Relative restoration cost to achieve a certain standard
• Long-term maintenance costs
• Level of landowner commitment
• Level of partner(s) commitment
• Opportunities for volunteer assistance

Project locations
• Inclusion in a CFA
• Drinking Water Supply Management Area outside of CFA
• Woodlot outside of CFA
• Small wetland outside of CFA
• Other undeveloped land in cities
• Native seed source site

B. Partnerships
1. City-County Conservation Collaborative
Many agencies -- such as Dakota County Parks, Dakota County Environmental Resources, Dakota County Soil and Water Conservation District (SWCD), Watershed Organizations, the State’s Department of Natural Resources, private and nonprofits groups -- work to conserve natural resources. Agencies often work independently, using the legal, financial, and other resources available to them. Collaboration often occurs on case-by-case projects or initiatives, but conservation and resource management are not always coordinated and systematic. An organized collaborative can help coordinate activities, allowing partnering agencies to do more together than they could do separately. Each organization in the collaborative would bring its own strengths, expertise, experience, and tools to create a whole that is greater than the sum of its individual parts. These suggested guidelines envision several layers of collaboration to perform different tasks. The large group guides efforts, coordinates plans, and shares experiences. Project-specific partner groups meet more regularly to perform tasks with a focus on specific project delivery.
The collaborative approach also puts the weight of the region and multiple organizations behind funding applications and project delivery. This gives local projects both legitimacy and demonstrated need by showing they are supported. The following table suggests participants and activities for the large group collaborative and smaller project-specific collaboratives.

<table>
<thead>
<tr>
<th>Suggested Model for a City-County Conservation Collaborative</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Group</strong></td>
</tr>
</tbody>
</table>
| **Participants** | • Cities  
• Dakota County | • Businesses  
• Cities and Townships  
• Dakota County  
• DNR and other state agencies  
• Landowners  
• Nonprofit Organizations  
• SWCD  
• Watershed Management Organizations |
| **Activities** | • Identify collaboration opportunities  
• Guide efforts  
• Develop standards  
• Communicate values  
• Reinforce regional importance  
• Develop grant applications  
• Increase staff capacity and knowledge  
• Share natural resource information  
• Coordinated purchasing | • Develop comprehensive, master and development and other plans based on shared vision  
• Land protection projects  
• Natural resource restoration and management |

Governance of the Collaborative requires a mutually-acceptable framework by which cities, the County, landowners, and other partners set project goals and fund activities. The roles of each agency or organization may vary greatly from project to project. Partners should seek a structure that is opportunistic and nimble, to take advantage of funding and opportunities without cumbersome processes. It must also build from the strengths of each project partner. Suggested functions and roles are below:

<table>
<thead>
<tr>
<th>Collaborative Functions</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Communication</strong> will be vital to develop and institutionalize effective communication channels</td>
</tr>
<tr>
<td><strong>Coordinated Planning</strong> will be necessary to build consensus on conservation and project goals, roles, and funding responsibilities. In many cases, integration of objectives from existing plans will be essential.</td>
</tr>
<tr>
<td><strong>Project Prioritization</strong> will use a collaborative approach to identify priorities within each project.</td>
</tr>
<tr>
<td><strong>Land Protection and Ownership Options</strong> will be determined based on project type, location and other factors.</td>
</tr>
<tr>
<td><strong>Cost-Sharing and Funding</strong> should be linked with other strategic decisions. Funding roles should be determined based on the strengths of each agency and individual conservation projects. In-kind contributions of land, easements, design, restoration, and management are encouraged. Joint Powers Agreements will be developed to establish predominant roles and responsibilities.</td>
</tr>
<tr>
<td><strong>Long-Term Management and Stewardship</strong> will vary across projects and land ownership types. The Collaborative will develop goals and identify partner roles for natural resource management and long-term maintenance of conserved areas.</td>
</tr>
<tr>
<td><strong>Measuring Success</strong> includes lands protected, restored, and maintained; outside dollars leveraged by the collaborative, dollars saved through cost sharing or combined purchasing, staff time utilized on conservation related activities, and more.</td>
</tr>
</tbody>
</table>
2. Convening CFA Landowners and Stakeholders

In addition to conducting annual landowner application rounds as the Program has done in the past, this plan uses a “landscape conservation” approach to convene landowners and stakeholders to share information and make decisions in a way that promotes natural landscapes as a valued part of society. The idea of a shared landscape fosters dialogue and exchange of ideas to develop projects that are community-supported, locally significant, and enduring. Bringing landowners and stakeholders together, with diverse perspectives and expertise, can help find common ground and develop creative solutions that protect and restore natural resources.

The plan recognizes that each CFA is unique in terms of land, natural resources, and people. The landscape conservation approach will explore how to engage and convene landowners within each CFA to determine individual and shared needs, goals, and conservation-related priorities. The following chart summarizes how the County could convene landowners and stakeholders and help advance desired goals.

<table>
<thead>
<tr>
<th>Elements of a Collaborative CFA Initiative</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>PHASES</strong></td>
</tr>
<tr>
<td><strong>PREPARATION</strong></td>
</tr>
<tr>
<td><strong>KEY ACTIVITIES</strong></td>
</tr>
<tr>
<td><strong>With Landowners:</strong> • Create owner database • Meet with key landowners • Outreach • Convene</td>
</tr>
<tr>
<td><strong>PARTNER BUILDING AND OUTREACH</strong></td>
</tr>
<tr>
<td><strong>STRUCTURE AND STAFFING</strong></td>
</tr>
</tbody>
</table>
C. Funding the Work

1. Current Land Conservation Operating Budget

The Land Conservation Program has grown incrementally since its inception. Program staff and budget for 2020 include:

- 4.0 FTEs, salaries and benefits: $486,137
- Operations/Contracted Services: $201,664
- Total: $687,801

2. Potential Protection and Restoration Outcomes and Estimated County Cost

<table>
<thead>
<tr>
<th>Protection and Ownership Status</th>
<th>Total Acres</th>
<th>Ten-Year Protection Acres</th>
<th>Ten-Year Total Protection Costs</th>
<th>Ten-Year County Protection Cost</th>
<th>Ten-Year Restoration Acres</th>
<th>Ten-Year Total Restoration Costs</th>
<th>Ten-Year County Restoration Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>5. Public Conservation Lands within CFAS</td>
<td>29,073</td>
<td>0</td>
<td>$0</td>
<td>$0</td>
<td>10,600</td>
<td>$30.5M</td>
<td>$3.5M</td>
</tr>
<tr>
<td>6. Protected Private Lands within CFAs</td>
<td>8,533</td>
<td>1,900</td>
<td>$31.7M</td>
<td>$2.1M</td>
<td>2,500</td>
<td>$20.7M</td>
<td>$0.9M</td>
</tr>
<tr>
<td>7. Non-Protected Private Land within CFAs</td>
<td>43,879</td>
<td>2,600</td>
<td>$159.2M</td>
<td>$7.8M</td>
<td>2,100</td>
<td>$99.4M</td>
<td>$3.0M</td>
</tr>
<tr>
<td>8. Non-Protected Private Land outside of CFAs</td>
<td>2,400</td>
<td>500</td>
<td>$16.4M</td>
<td>$0.5M</td>
<td>400</td>
<td>$9.2M</td>
<td>$0.2M</td>
</tr>
<tr>
<td>Totals</td>
<td>84,515</td>
<td>5,000</td>
<td>$207.3M</td>
<td>$10.4M</td>
<td>15,600</td>
<td>$159.8M</td>
<td>$7.6M</td>
</tr>
</tbody>
</table>

Operational Considerations

It is important to recognize that land conservation projects can be highly complex, with many variables that influence timeframes and costs. Typical acquisition projects require 18 to 24 months and typical restoration projects require three or more years.

In the past, most land protection projects consisted of large tracts of agricultural easements, resulting in:
- An average of ten completed acquisition projects per year for one full-time staff person (FTE)
- Higher average acreage per project
- Lower average cost per acre and lower total cost per project
- Less complexity and reliance on partners requiring less average time per project
- Initially no natural resource restoration requirements

Based on past performance and going forward, anticipated land protection projects and associated restoration will likely result in:
- Lower average acres per project
- Higher average cost per project
- Greater complexity and reliance on partners, including adjacent landowners
- Obligatory natural resource management will increase project duration and require more staff time per project and longer duration
Staffing
Staff capacity influences the amount of land that can be protected and restored annually and over the Plan’s ten-year timeframe. Based on current staff capacity, an estimated 250 acres could be protected each year for a total of 2,500 acres and 400 acres could be restored each year for a total of 4,000 acres over the ten-year plan.

An additional 1.0 FTE Acquisition Specialist could double the land protection to 5,000 acres over ten years. An additional 3.0 FTE Restoration Specialists could quadruple the natural resource restoration acreage to 15,600 acres over ten years. The estimated costs for these staffing options are outlined below.\(^{11}\)

### Estimated Annual Costs

<table>
<thead>
<tr>
<th>Acres</th>
<th>Land Protection</th>
<th>Natural Resource Restoration</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>250</td>
<td>500</td>
</tr>
<tr>
<td>10-Year Target Outcomes Cost</td>
<td>$300K (Current)</td>
<td>$415K (+1 FTE)</td>
</tr>
<tr>
<td>County Operational Cost</td>
<td>$300K (Current)</td>
<td>$415K (+1 FTE)</td>
</tr>
<tr>
<td>Additional County Capital Cost</td>
<td>$520K</td>
<td>$1.04M</td>
</tr>
<tr>
<td>Total County Cost</td>
<td>$820K</td>
<td>$1.46M</td>
</tr>
</tbody>
</table>

### Estimated Ten-Year Costs

<table>
<thead>
<tr>
<th>Acres</th>
<th>Land Protection</th>
<th>Natural Resource Restoration</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2,500</td>
<td>5,000</td>
</tr>
<tr>
<td>Ten-Year Target Outcome Cost</td>
<td>$3M</td>
<td>$4.15M (+1 FTE)</td>
</tr>
<tr>
<td>County Operational Cost</td>
<td>$3M (Current)</td>
<td>$4.15M (+1 FTE)</td>
</tr>
<tr>
<td>Additional County Capital Cost</td>
<td>$5.2M</td>
<td>$10.4M</td>
</tr>
<tr>
<td>Total County Cost</td>
<td>$8.2M</td>
<td>$14.65M</td>
</tr>
</tbody>
</table>

3. Grant Opportunities
Successful land conservation efforts require sufficient funding, typically sustained through collaboration and robust grant opportunities. An inventory of available grant programs follows.

### A. FEDERAL FUNDING

U.S. Department of Agriculture-Natural Resource Conservation Service: Conservation Easements

- The **Agricultural Conservation Easement Program (ACEP)** consists of the Agricultural Land Easements (ALE) Program and the Wetlands Reserve Program. ACEP provides matching funds that can be used to purchase permanent conservation easements on agricultural land, grasslands, and wetlands and to assist with grassland and wetland restoration.

- The **Healthy Forest Reserve Program** helps protect and restore forest lands. Conservation projects must benefit endangered species, improve biodiversity, or enhance carbon sequestration. This program funds restoration activities as well as permanent or 30-year easements.

- The **Forest Legacy Program** protects private forest land by purchasing conservation easements or land in fee from voluntary landowners.

\(^{11}\) *Cost estimates in tables do not reflect inflationary impacts.*
• The **Community Forests Program** provide financial assistance to local governments, tribal governments, and qualified nonprofit entities to establish community forests that provide continuing and accessible community benefits.

**Regional Conservation Partnership Program (RCPP)**
• The **RCPP** enlists local governments, state agencies, tribes, and other groups to coordinate conservation on a national or state scale and also engages landowners and agricultural producers in conservation activities that improve water, soil, wildlife habitat, or other natural resources. Conservation easements may be acquired using RCPP funds and cost-share funding is available.

**Conservation Practices**
• The **Environmental Quality Incentives Program** provides financial and technical assistance for activities on agricultural lands that benefit air quality, water quality, soil and water conservation, and wildlife habitat.
• The **Conservation Stewardship Program** helps maintain, improve, and expand activities that benefit natural resources (including soil, water, air, and wildlife habitat) or conserve energy.

**U.S. Fish and Wildlife Service**
• The **North American Wetlands Conservation Act (NAWCA)** provides competitive matching grants to increase bird populations and wetland habitat, while supporting local economies, hunting, fishing, bird watching, family farming, and ranching.
• The **Partners for Wildlife Wetlands Restoration Program** provides cost-share for wetland restoration, preferably large drained wetlands or multiple basins, using ten-year agreements. There are no restrictions on haying or grazing.
• The **Partners for Wildlife Grasslands Restoration Program** provides cost-share for grassland restoration, preferably adjacent existing or restorable wetlands, using fifteen-year agreements. Haying and/or grazing are typically not allowed.
• The **Habitat Easement Program** provides funds for permanent easement on existing or restorable wetlands and grasslands, preferably close to other protected lands. Haying and/or grazing may be allowed.
• The **Wetland Easement Program** provides payment for permanent easements on existing or restorable wetlands. Haying, grazing and/or farming wetlands is may be allowed.

**B. STATE FUNDING**

**Environment and Natural Resources Trust Fund**
In November 1988, Minnesota voters passed a constitutional amendment that permanently established the Environment and Natural Resources Trust Fund (ENRTF). In 1998 voters passed another constitutional amendment extending the dedication through December 2024. The ENRTF supports projects with the public purpose of protection, conservation, preservation, and enhancement of the state’s air, water land, fish, wildlife, and other natural resources. The Legislative-Citizen Commission on the Minnesota Resources (LCCMR) committee governs this fund and makes annual funding recommendations to the legislature.

The County has received past ENRTF funding for development of the Farmland and Natural Areas Protection Plan, development of the Farmland and Natural Areas Program Guidelines, Vermillion River
Corridor Plan, funding to acquire conservation easements, and funding through the Metropolitan Council to acquire greenway and regional parkland.

**Clean Water, Land and Legacy Fund**

In November 2008, Minnesota voters approved the Clean Water, Land and Legacy Amendment, which dedicated a sales tax increase of 3/8 percent (0.375) to clean water, natural areas, parks, arts education and history. There are three primary funds which can be used for conservation purposes:

- **Outdoor Heritage Funds** (OH) are used to restore, protect and enhance wetlands, prairies, forest and habitat for fish, game, and wildlife. The Lessard-Sams Outdoor Heritage Council (LSOHC) oversees this fund and makes annual recommendations to the legislature. The County has received a total of $8.867 million in OH funds since 2008 and currently has $5.8 million of OH funds appropriated by the 2018 and 2019 Minnesota Legislatures for natural resource protection, restoration and enhancement.

- **Clean Water Funds** are used to protect, enhance, and restore water quality in surface and groundwater. The Clean Water Council, as well as an interagency committee of state agencies, makes funding recommendations to the governor.

- **Parks and Trails Funds** are used to support parks and trails of regional or statewide significance. The funds are divided between the ten Implementing Agencies (including Dakota County) of system, Minnesota Department of Natural Resources for state parks and trails, the Greater Minnesota Regional Parks and Trails Commission for grants to counties and cities outside the seven-county metropolitan area.

**Minnesota Department of Natural Resources (DNR)**

- The **General Operating Fund** includes direct appropriations for managing state parks and trails, minimizing the spread of invasive species, managing the state’s forests and lands, protecting water, providing outdoor recreation opportunities, and enforcing natural resource laws.

- The **Game and Fish Fund** supports management, monitoring, and protection of fish and wildlife resources as well as the enforcement of game and fish laws. Sales of hunting and fishing licenses and federal sport fish and wildlife federal grants provide a significant portion of this funding.

- The **Natural Resources Fund** supports the development and maintenance of Minnesota’s natural resources and the enforcement of natural resource laws. This fund consists of 20 accounts that are dedicated for a specific purpose ranging from water-based recreation to forest management to state parks.

- There is a range of **Local Park and Natural Area Grant Programs** such as the Conservation Partners Legacy Grant Program, Federal Recreational Trail Program, Local Trail Connections Program, National Outdoor Recreation Legacy Partnership Program, Natural and Scenic Area Program, No Child Left Inside Grant Program, and Outdoor Recreation Grant Program which provide matching funds to local governments and organizations for a variety of conservation and recreation projects.

**Reinvest in Minnesota**

The Reinvest in Minnesota (RIM) conservation easement program permanently protects habitat and water resources. It is primarily funded through legislative bonding, and the Clean Water and Outdoor Heritage Fund. It is administered by the Board of Water and Soil Resources. The Re-Invest in Minnesota Critical Habitat Match program is administered by the DNR for the protection of wildlife habitat. It is funded by
C. REGIONAL FUNDING
The Metropolitan Council (MC), the planning agency serving the Twin Cities seven-county metropolitan area, works with ten regional park Implementing Agencies (IAs) to award grants to finance land acquisition and development of the parks system.

- The **Acquisition Opportunity Fund (AOF)** assists IAs in acquiring land for the Regional Parks System. The AOF comprises state and regional funding sources in two separate accounts:
  - The Parks and Trails Legacy Fund / Park Acquisition Opportunity Fund account funded by state Legacy dollars and regional park bonds.
  - The ENRTF / Park Acquisition Opportunity Fund account funded by ENRTF dollars and MC funds.
- **Operation and Maintenance (O and M)** funding is appropriated by the state of Minnesota money from the General Fund and “Lottery in lieu of sales tax” to the MC for distribution to the IAs to assist in the operating and maintaining the Regional Parks System. O and M can include natural resource restoration and maintenance which is up to individual Agency discretion.
- The **Regional Parks Bonding Program** is intended for acquisition, development, and redevelopment projects. The State of Minnesota can issue bonds appropriated for the Regional Parks System matched with MC-issued regional park bonds. The funds are disbursed to IAs according to the population within the jurisdiction of each IA and the number of visits an IA hosted from people who live outside the Agency’s jurisdiction.
- Approximately 59,000 acres of agricultural land in the County is currently enrolled in the **Metropolitan Agricultural Preserves Program** which is administered by individual townships. The Program stipulates that there can be no development for eight years upon un-enrolling and it provides a $1.50 per acre property tax reduction. The Legislative Auditor concluded that the program has been effective in preserving agricultural land, but it should not be considered as permanent protection.

D. COUNTY FUNDING
The Environmental Legacy Fund (ELF) was established in December 2015 for the specific purpose of protecting preserving and enhancing the environment in the County. The ELF receives revenue from two primary sources:

- **Host Fees** are negotiated with the six landfills located in the County, including two municipal solid waste landfills, an industrial waste landfill, and three construction/demolition landfills. Host fee agreements were updated in 2017, with an increase in most of the fees which have an annual escalator. However, revenues are also based on the volume of waste and can fluctuate considerably. Host fees generated about $8.9 million in 2018.
- **Gravel Tax Revenues.** Fifteen percent of the total gravel tax revenue generated every year is deposited in ELF. The Gravel Tax is also based on volume and has fluctuated based on markets. Gravel tax generated about $181,000 in 2018.

Most of the ELF funding is used for County programs (including matching dollars for grants) or funding to partners for projects that directly relate to county goals and objectives. Specific County activities that are
eligible for ELF support include brownfield redevelopment, environmental capital projects, Environmental Resources Department operations, gravel pit remediation, natural area and shoreland conservation, park/greenway master plan improvements, and implementation of the County’s Natural Resources Management Plan and Solid Waste Master Plan. ELF funding is also used for the Landfill Host Community Grant Program. One grant cycle has been held and the selection process is continuing to evolve.

The following table summarizes various grant sources for activities of the Land Conservation Program.

<table>
<thead>
<tr>
<th>Potential Funding Sources</th>
<th>Acquisition</th>
<th>Restoration</th>
<th>Maintenance</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>U.S. Department of Agriculture, Natural Resources Conservation Service</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Agricultural Conservation Easement Program</td>
<td>X</td>
<td>X (Wetland)</td>
<td></td>
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<tr>
<td>Community Forests Program</td>
<td>X</td>
<td></td>
<td></td>
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<tr>
<td>Conservation Stewardship Program</td>
<td></td>
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<td>X</td>
</tr>
<tr>
<td>Environmental Quality Incentives Program</td>
<td></td>
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<td>X</td>
</tr>
<tr>
<td>Forest Legacy Program</td>
<td>X</td>
<td></td>
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<tr>
<td>Healthy Forest Reserve Program</td>
<td>X</td>
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<tr>
<td>Regional Conservation Partnership Program</td>
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<td>X</td>
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<tr>
<td><strong>U.S. Fish and Wildlife Service</strong></td>
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<tr>
<td>Habitat Easement Program</td>
<td>X</td>
<td></td>
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<tr>
<td>North American Wetlands Conservation Act</td>
<td>X</td>
<td>X</td>
<td></td>
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<tr>
<td>Partners for Wildlife Grasslands Restoration Program</td>
<td>X</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>Partners for Wildlife Wetlands Restoration Program</td>
<td>X</td>
<td>X</td>
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<tr>
<td>Wetland Easement Program</td>
<td>X</td>
<td></td>
<td></td>
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<tr>
<td><strong>State of Minnesota</strong></td>
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<tr>
<td>Clean Water Fund</td>
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</tr>
<tr>
<td>Conservation Partners Legacy Program</td>
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<td></td>
</tr>
<tr>
<td>Environmental and Natural Resources Trust Fund</td>
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</tr>
<tr>
<td>Outdoor Heritage Fund</td>
<td>X</td>
<td>X</td>
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</tr>
<tr>
<td>Parks and Trails Legacy Fund</td>
<td>X</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>Reinvest in Minnesota</td>
<td>X</td>
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<tr>
<td><strong>Minnesota Department of Natural Resources</strong></td>
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<td></td>
</tr>
<tr>
<td>General Operating Fund</td>
<td>X</td>
<td>X</td>
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<tr>
<td>Game and Fish Fund</td>
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<td>X</td>
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<tr>
<td>Local Parks and Natural Area Grant Program</td>
<td>X</td>
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<td></td>
</tr>
<tr>
<td>Natural Resource Fund</td>
<td></td>
<td></td>
<td>X</td>
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<tr>
<td>(20 specific-purpose accounts)</td>
<td></td>
<td></td>
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<tr>
<td><strong>Metropolitan Council</strong></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Regional Parks Acquisition Opportunity Fund</td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Regional Parks Operation and Maintenance Fund</td>
<td></td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>Regional Parks Bonding</td>
<td>X</td>
<td></td>
<td></td>
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<tr>
<td>Metropolitan Agricultural Preserves Program</td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Dakota County</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Environmental Legacy Fund</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
</tbody>
</table>
Potential New County Funding Options
The County could issue **General Obligation Bonds** for parks and natural area capital projects. For example, a $20 million bond would add $1.3 million to the county’s annual debt service and cost the owner of a median-valued home in the County an average of $11 per year in property taxes for ten years. Voter approval is required.

The County could issue **Capital Improvement Bonds** for parks and natural area capital projects. For example, a $20 million bond would add $1.3 million to the County’s annual debt service and cost the owner of a median-valued home in the county an average of $11 per year in property taxes for ten years. Adoption of a Capital Improvement Plan and approval by at least four members of the County Board is required.

The County could increase its **Property Tax** levy through the standard budget process or by seeking voter approval. Revenue could be used for capital projects as well as operations and maintenance. For example, a $10 million levy increase would cost the median household $42 per year in property taxes. Alternatively, a voter-approved $10 million levy increase (levied against referendum market value instead of tax capacity) would cost the median homeowner $55 per year in property taxes. In both cases, the tax could have a sunset after a certain number of years or continue in perpetuity.

The County could seek authority from the state Legislature to impose a local **Sales Tax**. For example, a 0.15 percent sales tax would generate more than $7.6 million annually and cost the typical household $30 per year. Visitors would also pay a sales tax. While there is no limit on the number of years this tax can be in effect, in most cases, the duration of the tax is determined by the time necessary to generate enough revenue to finance general obligation bonds for a project and will terminate upon raising that amount. Voter approval is required after the County receives taxing authority from the state.

4. Funding Policy
As Plan implementation proceeds, cost-sharing formulas will be explored to match the needs of various project types (e.g., wetland restoration or upland habitat protection and improvement). In general, the preferred policy option for land protection is to use County-available funding to maximize the use of non-County funding.

Funding for short- and long-term natural resource management will also consider the ability to leverage outside funding and protect public investments. Formulas for restoration, enhancement, and maintenance will be developed for both private and non-County public lands.

D. Program Operation
1. Land Protection Tools
The Program seeks to continue offering multiple options for land protection and is considering new options to increase landowner participation and awareness of the program’s benefits. Determining which protection scenario is the best option will be determined by:

- Individual landowner wishes
- County authority, interest and purpose
- Funding sources/requirements
- Funding availability
Expanding the mechanisms for land protection to include the tools available from all project partners can contribute to the success of land conservation efforts and reduce participation barriers for willing landowners. The Program’s current land protection tools and potential new opportunities are identified below:

**Park Dedication**
Park dedication is a powerful tool available to municipalities in securing land protection. It is typically used in conjunction with city parks at the time of surrounding development to fulfill a neighborhood’s recreation needs. In some situations, it is used to meet the shared vision of a greenway system. In other situations, park dedication can be used to protect land for conservation purposes in addition to the recreation benefit that city parks offer. In some cases, dedicated land becomes publicly owned parks, where the municipality would be the primary agent of stewardship. In other cases, neighborhood or Homeowner Associations may be the property owner. In any case, the conservation collaborative would exist to offer support for land stewardship.

**Comprehensive Planning and Zoning**
Municipal land use guidance and zoning could define and help protect high priority or ecological value lands by designating them in comprehensive plans and zoning codes. Establishing special zoning designations such as overlays and coupling land conservation areas with otherwise protected lands such as floodways and bluffs.

**Official Mapping**
Conservation areas could be officially mapped by government entities as public record of their intent to acquire land for conservation that has a public benefit. Dakota County adopted an Official Mapping Ordinance, Ordinance No. 130, in 2008.

**Acquisition**
There are several approaches to acquiring land, each of which has its own set of activities, advantages and limitations. The major approaches are described below. There are numerous potential conservation partners, both public and private, that may be able to assist in acquisition. Potential new options include phased acquisition, life estate, restoration easement, and land registry.

**Fee Title**
The County can acquire fee title or assist another public entity in acquiring fee title from a willing seller. Another option may be to “Buy-Protect-Sell” where an entity acquires the entire property, places restrictions on all or portions of the property and then sells the entire or portions of the property.

**Land Donation/Bargain Sale**
Landowners may choose to gift all or part of their land or reduce the value below the appraised value. The landowner may be able to receive tax benefits for donation of land or land value to a qualified public or conservation partner.

**Phased Acquisition (Proposed)**
A voluntary transaction between a landowner and a purchaser in which acquisition of land or an easement is completed through more than one transaction over a specified period of time – months or years – resulting in a complete acquisition by a specified time.

**Option and First Right of Refusal**
These options may be useful if the landowner is not willing to sell at the time but is willing to work with the County or other conservation entity at a future time prior to selling the property to another party.
Terms and potential payment are variable.

**Life Estate**
This option allows the landowner to continue to live on the land after selling the fee title. Life estates can be structured in numerous ways (e.g. the landowner can live on the land for the rest of their life or any mutually agreed upon timeframe). Life estates will reduce the value of the property in amounts proportional to the length of the life estate.

**Permanent Conservation Easement**
A voluntary legal transaction between a landowner and a qualified buyer (governmental unit or private land conservation organization) to protect the natural, scenic, cultural, historic or open space values of the property to achieve specified conservation purposes. The seller owns the underlying fee title to the still private property and continues to pay all or reduced property taxes. The easement determines both allowed and prohibited activities. Most easements are unique, reflecting individual landowner needs and property characteristics.

Conservation Easements are valued based on the difference between the fee title value of the property without any restrictions and the value of the property with the easement restrictions in place. The seller can sell the easement at the full value or partial value or donate the entire value (Bargain Sale). Land with a conservation easement provides additional potential benefits to the landowner by making the easement area eligible for public investments towards restoration and management at no or significantly reduced cost to the landowner.

There are many different types of easements that can be used for conservation purposes:

**Agricultural Easement**
A permanent easement that allows agricultural activities and requires a Stewardship Plan with a NRMP, as appropriate. This type of easement may only be used when it provides high priority ecological and recreational benefits in the future, including:
- Protecting open space lands adjacent to County parks and greenways, wildlife management areas, protected natural areas on public and private land, and wetland restoration areas
- Maintaining open space connectivity between protected natural areas

**Buffer Easement**
A permanent easement that restricts certain types of non-compatible residential, commercial or industrial develop adjacent to existing public land.

**Flowage Easement (Proposed)**
A permanent easement that allows new surface water to flow across private property. This type of easement has been used by the County for transportation and other types of development projects but has not been used for conservation purposes. It is anticipated that large-scale wetland restoration projects will require these types of easements to address hydrologic changes to the landscape. It would allow the County and its contractors to perform restoration, management and maintenance activities within existing or proposed natural portions of easement at no or significantly reduced cost to the landowner.

**Greenway Corridor Easement**
A permanent easement on a linear corridor that provides a combination of habitat, water quality and recreational benefits. The easement would allow for the future development of a recreational trail and amenities such as rest areas, kiosks and benches, but no other non-recreational development. A jointly developed NRMP would be required. It would allow the County and its contractors to perform restoration, management and maintenance activities within the easement area at no or significantly reduced cost to the landowner.

**Greenway Trail Easement**
A permanent easement on a narrow, linear corridor that allow for the future development of a recreational trail and amenities such as rest areas, kiosks and benches, often associated with specific funding source.

**Natural Area Easement**
A permanent conservation easement focused on protecting and improving the natural resources and conservation values of the property. No residential, commercial, industrial or new utility-related development is allowed. Temporary agricultural use may be allowed. NRMP is required. It would allow the County and its contractors to perform restoration, management and maintenance activities within existing or proposed natural portions of easement at no or significantly reduced cost to the landowner.

**Park Easement**
A permanent easement within existing County park boundaries that preserves the natural features of the property but restricts future development which could negatively impact the park’s natural resources or recreational experiences of park users. It would allow the County and its contractors to perform restoration, management and maintenance activities within the easement area, at public expense, requiring no landowner contribution.

**Restoration Easement (Proposed)**
A voluntary transaction between a landowner and the County (in this case), through which a landowner agrees to convey a permanent restoration easement in a defined area to the County at no cost, agrees to conservation purpose restrictions on the easement area, and agrees to allow the County and its contractors to perform restoration, management and maintenance activities within the easement area, at public expense, requiring no landowner contribution.

**Land Registry (Proposed)**
A voluntary action taken by a landowner who agrees to register all or a portion of their land for conservation purposes. A Land Registry Program is a unique, flexible option to assist private landowners in managing the natural resources on their property. The program would provide general information and technical assistance to landowners in developing and implementing long-term plans for restoring, enhancing or maintaining their property and could lead to permanent protection. A County Land Registry Program would request that a landowner:

A. Manage and conserve the land to the best of their ability
B. Notify the program of significant planned changes or natural changes that occur
C. Notify the program of intent to sell the registered property
2. Annual Work Planning Process
Due to the voluntary nature of participation in conservation activities, it is not possible to estimate landowner response to the Land Conservation Program’s opportunities, partner involvement, or the number of conservation projects the Program will receive or implement each year.

Annual budgeting and program-level work planning will begin with the implementation timeframes attached to the Plans actions — goals, strategies, and tactics — such as outreach to all CFA landowners in 2020 and initiating one to three CFA pilot studies in 2021. These and other new priority initiatives will be facilitated through annual budgeting processes, subject to County Board approval.

E. Public Information and Education

1. Program Information
The Land Conservation Program has relied on direct communication with landowners and potential project partners, and it will be important to maintain a contemporary Communications Strategy for the program moving forward. The strategy will need to use a variety of accessible outreach media and have clear information on the Program for its primary audiences. The Communications Strategy should address the following needs:
   a. Audiences — who would be interested and how they prefer to receive information
   b. Media – how information should be shared, e.g., web, social media, print, news releases
   c. General Program information, eligibility, contacts, events, and landowner opportunities
   d. Current project information
   e. Annual reporting on Program activities
   f. Information referrals and links to other webpages for natural resources information

2. Engagement Activities
In addition to providing accessible information for the public and specific audiences, the Program will consider adding interactive events, such as tours, speaking engagements, and volunteer activities. Volunteer activities could include assistance in natural resource restoration, data collection, vegetation and wildlife monitoring and sharing observations, seed collection, photographing sites.

F. Progress Measurement and Reporting
Progress measurement and reporting will be based on the following three sets of outcomes:

- **Plan implementation:** Dakota County will annually track and report implementation progress against the proposed timeframes included in this plan.

- **Land protection outcomes:** Dakota County and partners will track and report progress on the priorities established by the County, partners, CFA landowners and stakeholders for protection of priority natural areas and connection corridors.

- **Natural resource management outcomes:** Dakota County and partners will track and report progress on the priorities established by the County, partners, CFA landowners and stakeholders for the restoration and long-term management of priority natural areas and connection corridors.
The following table includes examples of performance measures for the three sets of outcomes, packaged by three questions used in Dakota County’s Program and Service Inventory: 1) How much did we do? 2) How well did we do it? and 3) Was anyone better off?

<table>
<thead>
<tr>
<th>Plan Implementation</th>
<th>Land Protection</th>
<th>Natural Resource Management</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>How much did we do?</strong></td>
<td>• CFA Landowners contacted</td>
<td>• Applications received from within and outside of CFAs</td>
</tr>
<tr>
<td></td>
<td>• Number of CFA profiles completed</td>
<td>• Projects initiated</td>
</tr>
<tr>
<td></td>
<td>• Program Guidelines (Criteria, funding, application process) updated</td>
<td>• Acres of wetland protected</td>
</tr>
<tr>
<td></td>
<td>• City County Conservation Collaborative organized</td>
<td>• Acres of natural area protected</td>
</tr>
<tr>
<td></td>
<td>• Property Tax Study Group recommendations</td>
<td>• Acres of critical infiltration areas protected</td>
</tr>
<tr>
<td></td>
<td>• Number of CFA landowners interviewed/convened</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Natural Resource Restoration Standards established</td>
<td></td>
</tr>
<tr>
<td><strong>How well did we do it?</strong></td>
<td>• Implementation timeframes met</td>
<td>• Establishment of CFA priorities</td>
</tr>
<tr>
<td></td>
<td>• CCCC participation rates</td>
<td>• Transactions completed in a timely manner</td>
</tr>
<tr>
<td><strong>Is anyone better off?</strong></td>
<td>• Landowner satisfaction surveys</td>
<td>• Number of new/expanded public use areas</td>
</tr>
<tr>
<td></td>
<td>• Partner satisfaction surveys</td>
<td></td>
</tr>
</tbody>
</table>
APPENDIX 1. PLANNING PROCESS AND BACKGROUND

A. Planning Process Summary

The plan development process occurred over three phases:

**PROJECT ORGANIZATION: late 2018**
- Identify scope of plan
- Identify stakeholders and interests and develop the Public Engagement Plan
- Identify and organize research topics
- Coordinate with County Groundwater Plan effort on research and public engagement
- Present project intro and scope to County Planning Commission
- Present project intro and scope to County Board

**RESEARCH AND VISIONING: 2019**
- Conduct research on land conservation and natural resource management topics
- Conduct stakeholder and public engagement on interests, opportunities, and program needs
- Synthesize research and engagement findings with preliminary opportunities and recommendations
- Identify draft goals and potential strategies
- Review findings and preliminary recommendations with County Planning Commission
- Review findings and preliminary recommendations with County Board
- Post findings and recommendations for public

**DRAFT PLAN REVIEW AND ADOPTION: 2019-early 2020**
- Develop and refine draft goals and strategies based on Planning Commission and County Board comments
- Conduct targeted stakeholder engagement on priorities and program refinements
- Refine plan outline and prepare draft Plan chapters
- Review draft Plan with County Planning Commission
- Review draft Plan with County Board, request release for public review (30 days)
- Thirty-day public review period with Plan posted online and stakeholder engagement, per engagement plan
- Compile comments from stakeholder input and complete plan modifications, as needed
- Review comments with Planning Commission, seek recommendation on Plan adoption
- Review comments with County Board, request adoption
B. County Land Conservation Overview

The Dakota County Park System marked the County’s first effort at permanently protecting natural resource lands, starting in the late 1960s. The Dakota County Farmland and Natural Areas Program began to take shape 30 years later, in response to accelerated residential growth in Dakota County over the 1980s and 1990s when more than 4,000 new homes were being constructed each year. Farms and natural areas were rapidly giving way to expanding suburbs and residents consistently expressed concern about the loss of open space in County surveys.

A regional study in the 1990s was exploring relocation of the Minneapolis St. Paul International Airport (MSP) to a site in south central Dakota County. A new airport would further reshape the Twin Cities, drawing hotels, restaurants, warehousing, and airport-supported businesses to a largely rural area. Investments in new freeway, sewer, and water improvements would likely attract more residential development.

A citizen group, “The Dakota County Agricultural Protection Task Force,” organized in opposition to the airport move and met regularly on protecting farmland and farming as a way of life in the County. Although the MSP did not relocate, an organized farmland protection effort was underway. The County began to evaluate potential farmland protection tools, including “Purchase of Development Rights” (PDR), which uses conservation easements to permanently protect land while allowing the land to remain in private ownership and stay in agricultural production.

Recognizing shared interest in land protection between urban and rural residents, the County worked with land protection groups and agencies on a plan to
protect natural areas and farmland, with a grant from the Legislative Commission on Minnesota Resources (LCMR). The County’s first Farmland and Natural Area Protection Plan was adopted in early 2002 with the goal of protecting 42,000 acres of priority farmland and 36,000 acres of priority natural areas. In November of that year, County voters approved a $20 million non-binding bond referendum for farmland and natural area protection, with 57 percent support. The Farmland and Natural Area Program (FNAP) was underway by the following year and held its first application round by November 2003.

Since 2003, the County has completed 121 projects totaling more than 11,500 acres and including 95 miles of shoreland. In 2005, the program was one of six recipients from across the country to receive an inaugural County Conservation Leadership Award from the National Association of Counties and the Trust for Public Land. It has also received awards from the American Planning Association, Minnesota Association of Counties, and the Minnesota Environmental Initiative. In 2009, the FNAP received a Governor’s Award for Pollution Prevention.

Over time, program priorities were adjusted in response to new information, shifts in available funding, and emerging issues of concern. The following map shows the status of land protection in the County as of 2019.
C. Refining the Direction of Land Conservation

Over two decades of operation, the FNAP and Land Conservation Program priorities have evolved to reflect concerns related to surface and groundwater quality, groundwater recharge, non-native invasive species, and the loss of native species diversity. Changes to external funding also have contributed to greater emphasis on improving countywide environmental quality.

Research and public engagement on natural resource issues and concerns now and for the future provided a foundation for formulating new land conservation approaches. Key findings are presented in this section, with more detailed information provided in the Plan Appendices.

1. Research Conclusions

Broad research on countywide conservation topics produced the following key conclusions:

Research Conclusions:

1. A more integrated approach is needed to protect water quality and supply, mitigate climate impacts, support declining native species, and control invasive species and address public concerns in these areas

2. Natural resource needs are shared: Plans from state, federal and other entities identify similar needs, presenting opportunities to collaborate on protection and natural resource management

3. Participation barriers can be reduced for private landowner conservation and management

A. MORE INTEGRATED APPROACH IS NEEDED

Environmental Needs

Key indicators of environmental quality provide a snapshot of water quality, natural vegetation status, wildlife populations and biodiversity, and County residents concern.

Native Wetlands

Wetlands are critical to overall water quality and flood control. More than 85 percent of Dakota County’s settlement-era wetlands have been lost.12

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Pre-settlement Natural Areas
Despite having a highly diverse mix of landscapes and ecosystems in the mid-1800s, only an estimated three percent of Dakota County’s natural landscapes from the pre-settlement era remain.

Water Quality
Monitoring and assessment of Minnesota’s water quality produce updated listings of impaired waters that no longer provide for their designated uses, such as fishing, swimming or drinking. The number of impaired waters in the County has increased over time. In 2018, testing found at least one impairment for every tested water body, for a total of 81 documented impairments. The number of quality issues has also grown, as new problems emerge, and new impairments are defined.

Oheyawahe or Historic Pilot Knob, Mendota Heights

13 https://www.pca.state.mn.us/water/2018-impaired-waters-list
Species and Biodiversity
Habitat loss and other issues have contributed to a decline in wildlife populations as well as the number of species found in Minnesota and Dakota County. Bird populations dramatically illustrate this decline, with declines in grassland bird populations of more than 50 percent since the 1970s.  

Resident Opinions
Scientific surveys of County residents consistently show strong support for land protection and management, with the strongest support for water quality, wildlife habitat, and natural areas.

<table>
<thead>
<tr>
<th>Approach</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Protecting and improving water quality</td>
<td>92%</td>
</tr>
<tr>
<td>2. Protecting and improving wildlife habitat</td>
<td>84%</td>
</tr>
<tr>
<td>3. Protecting and improving natural areas</td>
<td>83%</td>
</tr>
<tr>
<td>4. Increasing access for outdoor recreation</td>
<td>73%</td>
</tr>
<tr>
<td>5. Protecting and improving land used for agriculture/specialty crops</td>
<td>71%</td>
</tr>
</tbody>
</table>

Land Protection Status
Although many significant natural resource areas in the County have been protected, additional significant opportunities exist and include enhanced natural resource management. Nine percent (33,875 acres) of Dakota County’s total land area is currently protected for natural resource value and/or public use, including parks, natural resource management areas, and private easements. These protected lands represent some of the best of the best natural areas in the County, including federal, state, and local parks, reserves and other natural resource areas. Of the protected lands that are publicly-held, roughly 73 percent allow public access and use.

Summary of Protected Lands

<table>
<thead>
<tr>
<th>PROTECTION TYPE</th>
<th>ACRES</th>
</tr>
</thead>
<tbody>
<tr>
<td>Federal Lands (National Wildlife Refuge, Waterfowl Production Areas)</td>
<td>1,643</td>
</tr>
<tr>
<td>State (Park, Wildlife Mgmt. Areas, Scientific and Natural Areas, Aquatic Mgmt. Areas, Zoological Gardens)</td>
<td>12,297</td>
</tr>
<tr>
<td>Dakota County Parks and Park Conservation Areas</td>
<td>6,136</td>
</tr>
<tr>
<td>Other Agency Regional Parks</td>
<td>404</td>
</tr>
<tr>
<td>City Park Natural Areas and other City Conservation Areas</td>
<td>4,215</td>
</tr>
<tr>
<td>Private Permanent Easements, through Dakota County</td>
<td>8,874</td>
</tr>
<tr>
<td>Private Permanent Easements, MN Board of Water and Soil Resources’ Reinvest in Minnesota, Minnesota Land Trust</td>
<td>76</td>
</tr>
<tr>
<td>Total</td>
<td>33,875</td>
</tr>
<tr>
<td>Total for Public Lands with Public Access (73 percent of total)</td>
<td>24,836</td>
</tr>
</tbody>
</table>

14 Decline of the North American Avifauna, Science, Sept. 2019
For context, roughly 24 percent of land in the State of Minnesota is publicly protected, excluding private easements. At a national level, 14 percent of land nationally is publicly protected, also excluding private easements. Wide variation in protected land percentages across counties in one state or across states is expected, reflecting dominant land uses and the extent of urbanization.

Protected Lands in Dakota County
Critical Protection Elements
Additional protection opportunities for the County and partners include:

A. **Unprotected natural areas, representative plant communities, and landscapes of Dakota County**

Dakota County originally had some of the richest ecological diversity in the state, due to its location within five major ecological subsections. The subsections and pre-settlement conditions are:

- **Big Woods**: predominantly forested
- **Blufflands**: bluff prairies, steep bluffs, river valleys
- **Oak Savanna**: Bur oak savanna, some tallgrass prairie, and forest
- **Rochester Plateau**: riverine with tallgrass prairie and oak savanna
- **St. Paul Baldwin Plains and Moraines**: Oak and aspen savanna, some tallgrass prairie and forest

Only three percent of the original pre-settlement native plant communities remain intact, with many already publicly protected. Outside of these rare places, other unprotected natural areas of varying quality remain and represent fourteen major communities once found throughout the County. Scenic landscapes shaped by topography, water, and natural communities are culturally valued and present another protection opportunity.

B. **Connecting corridors between natural areas**

Protected lands in the County typically are physically separate and function ecologically as islands, as shown in the preceding map. Even relatively large “islands” need interconnectivity to other areas to sustain wildlife health and diversity. County greenways are planned and designed to provide connectivity between natural areas for recreational and ecological benefits. Additional connection corridors and corridors of an ecologically optimal width should be considered to allow greater species movement between natural areas.

C. **Natural area buffers to improve ecological functions and habitat**

The publicly protected lands in the County ecologically often represent the “best of the best.” However, the boundaries used in protecting these lands have been based on parcel (ownership) boundaries rather than natural features. Because of this, boundaries of some protected areas are not always adequately protecting the resources. Land conservation tools to permanently protect appropriate buffers should be considered.

D. **Wetlands and shorelines for surface and groundwater quality**

Wetlands form when hydric soils, aquatic/wetland plants, and wetland hydrology are present. Wetland provide many benefits, including:

- Storage for excess stormwater water during flooding and wet cycles
- Filtering out pollutants before they enter lakes, rivers and streams
- Infiltration and groundwater recharge (depending on wetland type)
- Fish and wildlife habitat
- Public recreation

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**Representative Native Plant Communities in Dakota County**

- **Wetlands**
  - Wet Meadow (Sedge and Fen)
  - Shallow Marsh
  - Deep Marsh
  - Shallow Open Water
  - Swamp (Shrub, Alder, Hardwood)

- **Grasslands**
  - Dry Prairie
  - Mesic Prairie
  - Wet Prairie

- **Oak Savanna**

- **Woodlands**

- **Forest**
  - Oak Forest
  - Maple-Basswood Forest
  - Hardwood Forest (Lowland, Aspen)
  - Floodplain Forest
Wetlands can take a wide variety of forms, ranging in appearance from shallow lakes to meadows to woodlands. The following map shows existing wetlands (green) as well as hydric soil areas showing where wetlands likely once existed (orange). An estimated 85 percent of the County’s original wetlands have been drained or filled, but in many cases, would be restorable as functioning wetlands.

According to the *Minnesota Wetlands Conservation Plan*¹⁵, restoration should be the primary wetland management strategy in Dakota County. This will require detailed analysis and close coordination and partnerships with agencies, organizations, and adjacent landowners. In addition to the County’s wetland banking program, the County’s Land Conservation Program has unique land protection tools that can assist in permanent wetland protection and restoration.

**Wetlands and Wetland Soils/Drained Wetlands, 2011**

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E. Source water protection and recharge areas
Dakota County is updating its Groundwater Protection Plan, which will identify opportunities for land protection to be used as a tool in improving the County’s groundwater quality and supply. Emerging issues for groundwater include quantity and quality.

**Quantity:** concerns are growing about groundwater withdrawal rates that exceed the rates at which some aquifers can recharge. Dakota County residents use more groundwater per capita than any other Metro county, and most residents are served by public supplies that pump groundwater.

Aquifer drawdown becomes more of a threat as development and overall consumption rates increase. The adjacent map shows the Metropolitan Council’s forecast areas for significant drawdown by 2040, which include communities projected to have significant population growth (e.g., Lakeville, Apple Valley). Protection of significant recharge areas and water conservation will continue to be essential.

**Quality:** Drinking water safety is a concern due to contaminants in groundwater, including compounds related to land use activities (e.g., nitrogen fertilizers, pesticides, de-icing salt, and perfluorochemicals) and naturally-occurring elements (e.g., Manganese and Arsenic). Agricultural chemical use in eastern Dakota County has been linked to increasing nitrate and pesticide levels in well water. Adoption of chemical best management practices has not always been effective with the coarse, highly permeable soils and fractured bedrock in these areas.

F. Climate Adaptation
Climate change is requiring society to re-evaluate its notion of “normal” conditions and adapt to some consequences that are reasonably certain and others that are largely unknown. A primary challenge will be building resilience into natural systems in the face of changing precipitation, temperature, and severe weather regimes. As climate shifts to warmer and wetter with more frequent severe weather events16 in Dakota County, the concept of “native” species also will likely change over time. Land protection with natural resource management can help efforts to mitigate climate change and lessen its impacts.

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16 Minnesota State Climatology Office, [https://www.dnr.state.mn.us/climate/climate_change_info/climate-trends.html](https://www.dnr.state.mn.us/climate/climate_change_info/climate-trends.html)
2. Natural Resource Needs are Shared

In addition to land protection opportunities, long-term natural resource management was a recurring theme heard from a variety of stakeholders throughout the planning process. The idea that land is not fully protected unless its natural resources are managed over time also guided the development of Dakota County’s 2017 *Natural Resources Management System Plan*. Long-term efforts to improve and stabilize natural resource quality can protect the public’s investments in land protection.

A broad range of local, state and federal plans speak to land protection and natural resource management needs for geographic areas that include Dakota County:

- Plans identify many overlapping areas of interest and need related to habitat protection, conservation efforts for targeted species, and approaches to protect biodiversity
- Current focus areas include Species in Greatest Conservation Need, pollinators, and invasive species
- Climate uncertainty is recognized in some of the more recent plans, although how to address this uncertainty is still evolving
- Most plans speak to the need for interagency and partnership approaches that engage the public

Plans and reports specific to water resources (e.g., Soil and Water Conservation District, watershed, other agencies) also cover geographies that include Dakota County and illustrate the need for partnership approaches:

- The general plan focus is on water quality and quantity, although some of the newer plans also discuss wildlife habitat and climate resilience
- The plans make limited reference to land protection and easement acquisition, but the needs exist, and most watershed management organizations historically have not protected land
- Sub-watershed analyses will help identify specific areas for enhanced conservation practices specific to sediment and phosphorus loading within sub-watersheds

Progress has been made in managing natural resources on park lands in recent years, but the County recognizes a need to do more and sustain efforts over time. Interviews and surveys with city, state and federal agencies indicated a similar interest in doing more natural resource management on their lands to protect long-term resource quality. Constraints they identified include lack of staffing, time, and budget to do more. The most commonly cited natural resource management needs on public lands include invasive species, water quality, and the impacts of altered hydrology, such as increased and repetitive flooding.

City park land in Dakota County includes roughly 8,100 acres of land. City Park Directors interviewed in 2019 about their natural resource management efforts expressed strong interest in partnership approaches to expand their resource management efforts (e.g., share knowledge, skills, and equipment).

### City Park Natural Resource Management

<table>
<thead>
<tr>
<th>TOTAL CITY PARK ACRES</th>
<th>PARK NATURAL AREAS AND CONSERVATION AREAS, ACRES</th>
<th>ACTIVELY MANAGED NATURAL AREAS, ACRES</th>
<th>RESTORED NATURAL AREAS, ACRES</th>
<th>PLANNED NATURAL AREAS TO MANAGE, ACRES</th>
</tr>
</thead>
<tbody>
<tr>
<td>8,100</td>
<td>4,215</td>
<td>1,279</td>
<td>556</td>
<td>757</td>
</tr>
<tr>
<td></td>
<td></td>
<td>28% of park natural areas</td>
<td>12% of park natural areas</td>
<td>18% of park natural areas</td>
</tr>
</tbody>
</table>

Draft for Board Consideration for Release
3. Participation Barriers Can Be Reduced

Land owners are ultimately responsible for long-term natural resource management on their land. A 2019 survey of rural agricultural landowners (with 20 acres or more of cultivated land in the county) received 245 responses (26 percent response rate) and reflected the diversity of the County’s farm operations, owner interests in their farms, and preferred types of conservation incentives and natural resource management assistance.

Respondents rated the importance of a range of potential County roles in land conservation and natural resource management, summarized in the following table. The most important roles were in cost sharing for water quality and flood control and purchasing permanent easements for wellhead and groundwater protection.

**Importance of Potential County Roles in Conservation**

<table>
<thead>
<tr>
<th>Potential County Roles in Conservation</th>
<th>1=Very unimportant</th>
<th>2=Unimportant</th>
<th>3=Important</th>
<th>4=Very important</th>
<th>Not sure</th>
<th>Total</th>
<th>Weighted Average</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. Cost-share contracts to implement water quality and flood control practices (structural)</td>
<td>28</td>
<td>12</td>
<td>87</td>
<td>58</td>
<td>27</td>
<td>212</td>
<td>2.57</td>
</tr>
<tr>
<td>b. Permanent easements to protect well head protection areas and groundwater</td>
<td>32</td>
<td>21</td>
<td>86</td>
<td>52</td>
<td>19</td>
<td>210</td>
<td>2.57</td>
</tr>
<tr>
<td>c. Permanent easements that protect existing natural areas such as woodlands or wetlands</td>
<td>39</td>
<td>22</td>
<td>74</td>
<td>59</td>
<td>20</td>
<td>214</td>
<td>2.53</td>
</tr>
<tr>
<td>d. Cost-share contracts to implement native plantings or cover crop practices (non-structural)</td>
<td>29</td>
<td>27</td>
<td>88</td>
<td>42</td>
<td>24</td>
<td>210</td>
<td>2.45</td>
</tr>
<tr>
<td>e. Permanent easements to restore drained agricultural land to wetlands primarily for flood control purposes</td>
<td>41</td>
<td>25</td>
<td>76</td>
<td>43</td>
<td>27</td>
<td>212</td>
<td>2.32</td>
</tr>
<tr>
<td>f. Permanent easements to convert cultivated land to native perennial vegetation</td>
<td>58</td>
<td>55</td>
<td>50</td>
<td>19</td>
<td>30</td>
<td>212</td>
<td>1.86</td>
</tr>
</tbody>
</table>

A majority of respondents cited the ability to generate an income, continued farming, and family farming traditions as the most important features of their property to protect. Soil health, which is linked to farm profitability, was cited by 63 percent of respondents.

The most-favored type of conservation incentive was a reduction in property tax, followed by incentive payments for a range of different practices. Incentive payments for soil health received the most support (roughly 50 percent), with slightly lower degrees of support for water-protective practices.
D. New Recommendations
From targeted research and stakeholder engagement, several new recommendations emerged that refine priority areas for protection, facilitate landowner participation in the program, and improve management of natural resources on a countywide basis:

**Refine Land Protection Priorities with Preliminary Conservation Focus Areas**
Land protection priorities will be based on natural features, connectivity, hydrology, and land ownership with renewed emphasis on water. The resulting 24 Preliminary Conservation Focus Areas total 82,000 acres, of which 22,874 acres are already protected, and provide a framework for landowner outreach, collaborative landscape conservation and public investments.

**Develop a City-County Conservation Collaborative**
Form a City-County collaborative to more effectively protect critical undeveloped areas, increase natural resource restoration and management, and share information and financial and staff resources within all incorporated areas.

**Establish a County Conservation Private Funding Partner**
Continue evaluating models for raising and distributing private funds for natural resource restoration, enhancement and maintenance on protected private lands.

**Restore Large-Scale Wetlands and Assist in Implementing the new Dakota County Groundwater Plan**
Strategically protect and restore existing and former wetlands, recharge areas and sensitive groundwater resources.

**Improve Conservation in Agricultural Use Areas**
Assist the Dakota County Soil and Water Conservation District as they work with rural landowners and agricultural operators to improve management practices and convert marginal farmland to natural vegetation.
APPENDIX 2. COMMUNITY ENGAGEMENT HIGHLIGHTS

As part of the planning process, a public engagement plan was developed to gain insight from the public and specific stakeholders on a range of issues related to the Plan, including:

- Continued land conservation efforts in Dakota County
- Emerging land and natural resource issues to address
- Priorities and focus areas for the next five to ten years
- Partnership approaches
- Funding, fiscal tools and incentives
- Draft Plan vision and goals

Six public events, surveys and agency meetings were conducted as part of the project research:

- Online public survey and written version sent to all program participants - 125 responses
- 2019 Residential survey questions, and previous years
- Two open houses (held jointly with the Groundwater Plan effort) - 80+ participants
- U.S. Fish and Wildlife Service, Minnesota Valley National Wildlife Refuge staff meeting
- MN DNR Central Region Managers meeting
- Two Land Conservation Workshops in a Rural Setting - 21 participants
- Two Countywide Conservation and Natural Resources Management Workshops - 16 participants
- Survey of City park directors on natural resources management and land protection - 10 participants
- Agricultural Landowner questionnaire - 250 participants

General promotion of the online survey, open houses, and workshops occurred through media releases, County webpage, social media, and targeted mailings to past Land Conservation Program participants. Direct invitations to participate in workshops were sent to past Land Conservation program participants; local, state, and federal agencies; and environmental and agricultural organizations.

From surveys, open houses, and dialogues with various stakeholders, several themes emerged:

1. **Dakota County’s land conservation efforts are supported by residents.**

   Over successive statistically representative residential surveys, residents have supported efforts to protect open space and natural areas in the County. The following table of relative importance scores calculated from residential surveys in 2011, 2013, and 2016, shows a trend of increasing importance in public opinion over the years.

   **2011-2016 Importance of investing in open spaces and parkland (adapted to a 1-100 scale)**

<table>
<thead>
<tr>
<th>How important is it to invest County funds for each of the following?</th>
<th>2011</th>
<th>2013</th>
<th>2016</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Protect lakes, streams and wetlands from pollution</td>
<td>72</td>
<td>79</td>
<td>80</td>
</tr>
<tr>
<td>2. Protect the highest-rated natural areas</td>
<td>63</td>
<td>75</td>
<td>79</td>
</tr>
<tr>
<td>3. Protect farmland from future development</td>
<td>50</td>
<td>65</td>
<td>N/A</td>
</tr>
</tbody>
</table>

2. **The location, associated goals and prioritization of different land conservation efforts has become increasingly important.**

   Residents and stakeholders have expressed concern about several environmental issues and see an important role for the County’s Land Conservation Program in mitigating some of these issues, such as improving water quality by retaining water on the land and providing habitat for declining wildlife species.
While not considered statistically representative, the Land Conservation Planning 2019 online survey results mirror the County’s Residential Survey results and further emphasize the importance of land protection to improve water quality. Lands that improve water quality and quantity and unique/high quality natural areas were the most important types of land protection efforts, followed by land protection for wildlife benefits (habitat and movement corridors). Although ranking lower in importance, all other types of land protection still scored well above the rating scale’s midpoint value (2.5), indicating that respondents regarded all land protection purposes as having some importance.

**Importance of protecting different types of land** (weighted average scores on 1-5 scale)

<table>
<thead>
<tr>
<th>Type of Land to Protect</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Natural areas that can improve surface water quality or groundwater quality/availability</td>
<td>4.4</td>
</tr>
<tr>
<td>Shoreland along lakes, rivers and streams to improve water quality</td>
<td>4.3</td>
</tr>
<tr>
<td>Unique and high-quality natural areas</td>
<td>4.3</td>
</tr>
<tr>
<td>Wetlands to improve surface water quality, recharge groundwater, provide wildlife habitat, and reduce flood impacts</td>
<td>4.3</td>
</tr>
<tr>
<td>Wildlife habitat for species with declining populations</td>
<td>4.1</td>
</tr>
<tr>
<td>Connecting corridors for wildlife movement</td>
<td>3.9</td>
</tr>
<tr>
<td>Agricultural lands that are adjacent to waterbodies and natural areas</td>
<td>3.8</td>
</tr>
<tr>
<td>Larger (65+ acres) natural and/or restorable areas</td>
<td>3.8</td>
</tr>
<tr>
<td>Lower quality natural areas that could be restored to improve their quality</td>
<td>3.7</td>
</tr>
<tr>
<td>Open space or undeveloped land</td>
<td>3.7</td>
</tr>
<tr>
<td>Small natural areas in more densely populated areas</td>
<td>3.7</td>
</tr>
<tr>
<td>Scenic landscapes</td>
<td>3.4</td>
</tr>
</tbody>
</table>

3. **Long-term management of natural resources is vitally important.** Ongoing natural resource management will require assistance and incentives to protect public interests and investments. The following table from the 2019 Residential Survey shows that residents identified water quality, followed by habitat and wildlife as the most important reasons for managing protected (preserved) lands.

**2019 percent rating preserved land management as “Essential” or “Very Important”**

<table>
<thead>
<tr>
<th>Approach</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Protecting and improving water quality</td>
<td>92%</td>
</tr>
<tr>
<td>Protecting and improving wildlife habitat</td>
<td>84%</td>
</tr>
<tr>
<td>Protecting and improving natural areas</td>
<td>83%</td>
</tr>
<tr>
<td>Increasing access for outdoor recreation</td>
<td>73%</td>
</tr>
<tr>
<td>Protecting and improving land used for agriculture/other specialty crops</td>
<td>71%</td>
</tr>
</tbody>
</table>

Long-term natural resource management for public and private lands likely will be different and may be addressed through different funding streams. The 2019 online survey, while not statistically representative, demonstrated 50 percent or greater support for County program funding and/or incentives for:

- Private landowners to restore and manage natural resources on their property
- Restoration and management of natural resources on permanently protected private lands
4. **Collaboration among agencies and organizations is needed.**
A key finding from city and agency interviews is that inter-agency partnerships will continue to be important in protecting and improving the natural resource base throughout the County. Public agencies identified constraints (time, staff, and budget) as the greatest limitation on their ability to do the level of natural resource management they believe would be beneficial.

5. **More comprehensive incentives for agricultural land stewardship are needed.**
A questionnaire designed to gain insight from agricultural landowners on their preferences and interests in land conservation received 250 responses in late 2019. The overall response rate was just over 26 percent. The responses represented a wide diversity of farm types, acres operated, land rentals, concerns for the future, environmental interests, and best practice adoption. Farm sizes ranged from under 50 acres to more than 1,000 acres, with 63 percent of respondent farms comprising less than 180 acres. Sixty percent of respondents rent out farmland to other farmers or operators.

Highlights from Agricultural Landowner questionnaire include:

**How important is Dakota County’s role in the following land conservation options?**
Cost shares and easements to protect water quality were the most strongly supported roles. The only potential Dakota County role deemed relatively unimportant was “Permanent easements to convert cultivated land to native perennial vegetation,” with an average weighted score below the midpoint of 2.0.
Local issues that create challenges:
Respondents checked off their top three challenges from a list. Property tax was the only issue cited by a majority of respondents (65 percent). Soil loss and erosion followed at 47 percent.

<table>
<thead>
<tr>
<th>Challenge</th>
<th>Responses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Property taxes</td>
<td>65%</td>
</tr>
<tr>
<td>Soil loss and erosion</td>
<td>48%</td>
</tr>
<tr>
<td>Flooding or weather (repeated or delayed planting)</td>
<td>30%</td>
</tr>
<tr>
<td>Land availability or loss of agricultural land due to development</td>
<td>27%</td>
</tr>
<tr>
<td>Irrigation and water appropriation regulations</td>
<td>26%</td>
</tr>
<tr>
<td>Crop pests, diseases, and pesticide resistance</td>
<td>23%</td>
</tr>
<tr>
<td>Fertilizer or pesticide regulations</td>
<td>22%</td>
</tr>
<tr>
<td>Lack of profitable alternative crops</td>
<td>20%</td>
</tr>
<tr>
<td>Lack of programs for marginal crop land</td>
<td>18%</td>
</tr>
<tr>
<td>Soil health incentives that not available or profitable</td>
<td>15%</td>
</tr>
<tr>
<td>Other (please specify)</td>
<td>7%</td>
</tr>
</tbody>
</table>

What kinds of voluntary conservation incentives would you be most interested in?
The most-favored type of conservation incentive was a reduction in property tax, followed by all types of incentive payments for different practices. Incentive payments for soil health received the most support (roughly 50 percent), with lesser degrees of support for water-protective practices. Easement purchase was the least supported form of incentive payment, with the strongest support for natural area easements (24 percent).

<table>
<thead>
<tr>
<th>Voluntary Incentives</th>
<th>Responses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reduced property taxes for landowners that protect land or implement conservation practices</td>
<td>73%</td>
</tr>
<tr>
<td>Incentive payments for soil erosion control projects</td>
<td>50%</td>
</tr>
<tr>
<td>Incentive payments for soil health practices such as reduced tillage or cover crops</td>
<td>48%</td>
</tr>
<tr>
<td>Incentive payments for setting aside marginal cropland</td>
<td>40%</td>
</tr>
<tr>
<td>Incentives for reduced fertilizer or chemical management</td>
<td>38%</td>
</tr>
<tr>
<td>Incentives for irrigation or groundwater management programs</td>
<td>37%</td>
</tr>
<tr>
<td>Easement for protecting natural areas</td>
<td>23%</td>
</tr>
<tr>
<td>Easement for wetland restoration</td>
<td>13%</td>
</tr>
<tr>
<td>Easement for flood control</td>
<td>10%</td>
</tr>
<tr>
<td>Other (please specify)</td>
<td>5%</td>
</tr>
</tbody>
</table>
In general, what are the greatest barriers to adopting conservation practices?

Although no single answer choice was selected by a majority of respondents, the most frequently cited barrier was a lack of financial incentives for installing conservation practices, followed by a lack of information on available programs. Least cited barriers include the notion that practices are already well adopted and provide no benefits to the land or farm operation.

<table>
<thead>
<tr>
<th>Barriers to Conservation Practice Adoption</th>
<th>Responses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lack of financial incentives to install conservation practices</td>
<td>46%</td>
</tr>
<tr>
<td>Lack of information about what programs are available and appropriate</td>
<td>38%</td>
</tr>
<tr>
<td>Compatibility of conservation practices with current farming systems</td>
<td>36%</td>
</tr>
<tr>
<td>Conservation practices take land out of production</td>
<td>28%</td>
</tr>
<tr>
<td>People often prefer to manage their property year to year and conservation practices would be too restrictive</td>
<td>26%</td>
</tr>
<tr>
<td>Need for specialized equipment (e.g. no-till planter or reduced tillage equipment)</td>
<td>26%</td>
</tr>
<tr>
<td>Programs are too complicated or time consuming</td>
<td>26%</td>
</tr>
<tr>
<td>Conservation practices add to the complexity of farming with today’s technology and equipment</td>
<td>20%</td>
</tr>
<tr>
<td>Lack of interest in conservation practices</td>
<td>20%</td>
</tr>
<tr>
<td>Conservation practices are already well-adopted</td>
<td>19%</td>
</tr>
<tr>
<td>Conservation practices do not have a direct benefit to one’s land or operation</td>
<td>18%</td>
</tr>
<tr>
<td>Other (please specify)</td>
<td>6%</td>
</tr>
</tbody>
</table>
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APPENDIX 3. PLAN RESEARCH HIGHLIGHTS
This section summarizes key findings from research conducted as part of the planning process.

1. Economic and other benefits of conservation
To identify benefits associated with land protection, studies on the economic value of benefits provided by natural systems were reviewed. The degree to which these types of benefits can be described and quantified can help advance public investments in land protection and natural resource management. Economic benefits related to land protection and natural resource management are often categorized and discussed as ecosystem services (ES), and generally appear in this context.

Ecosystem services are the benefits people receive from nature. They encompass nature’s contributions to the production of food and timber; life-support processes, such as water purification...; and life fulfilling benefits, such as places to recreate or to be inspired by nature’s diversity.  

ES are often categorized according to the Millennium Ecosystem Assessment,18 created by an international scientific assessment. The four overlapping categories are:

- **Regulating services** - benefits obtained from the regulation of ecosystem processes
- **Supporting services** - services necessary for the production of all other services
- **Provisioning services** - the products obtained from ecosystems
- **Cultural services** - nonmaterial benefits obtained from ecosystems

### Economic Services Often Cited in Research

<table>
<thead>
<tr>
<th>Regulating services: benefits obtained from regulation of ecosystem processes</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Air quality maintenance</td>
</tr>
<tr>
<td>• Climate regulation, e.g., carbon sequestering; local change to temperature and/or precipitation</td>
</tr>
<tr>
<td>• Water regulation, e.g., aquifer recharge; flood control; timing and/or magnitude of runoff</td>
</tr>
<tr>
<td>• Water purification and waste treatment</td>
</tr>
<tr>
<td>• Erosion control</td>
</tr>
<tr>
<td>• Regulation of human disease, e.g., cholera and vectors and biological control of pests and diseases</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Supporting services: services necessary for the production of all other services</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Soil formation and nutrient cycling</td>
</tr>
<tr>
<td>• Primary production</td>
</tr>
<tr>
<td>• Oxygen production</td>
</tr>
<tr>
<td>• Water cycling</td>
</tr>
<tr>
<td>• Habitat for wildlife</td>
</tr>
<tr>
<td>• Photosynthesis</td>
</tr>
<tr>
<td>• Decomposition of waste</td>
</tr>
<tr>
<td>• Pollination of crops and plants</td>
</tr>
<tr>
<td>• Seed dispersal</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Provisioning services: products obtained from ecosystems</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Fresh water</td>
</tr>
<tr>
<td>• Clean air</td>
</tr>
<tr>
<td>• Agricultural and forestry products (food, fiber, fuel, and wood)</td>
</tr>
</tbody>
</table>

---


That ecosystem services have economic value is not questioned, but the methods of value identification, valuation estimates, and local factors to consider can vary widely. Interest in ES quantification has grown among national and international governing bodies and agencies, as well as some local government entities and non-profits active in conservation. ES quantification may provide the metrics to improve project prioritization, such as prioritizing wetlands restoration. While technically complex, technological advances and ongoing research are making ES approaches a more relevant component to consider. Research, case studies, toolkits, and software continue to be developed by the scientific and academic community.

While the research conducted for this report did not involve quantification of ES economic benefits or define the best methods for doing so, example findings from ES quantification studies may have relevance for Dakota County:

**Middle Cedar River Watershed, Iowa, 2011**
A valuation study of ecosystem service benefits in the Middle Cedar River Watershed in Iowa identified 14 categories of ES across eight land cover classes in the 1.5 million-acre (~2,400 square miles) watershed. The study estimated that the ES generated between $548 million and $1.9 billion in goods and services. Wetlands constitute only 2.3 percent of the land cover in the watershed but were found to contribute 16.5 to 30.1 percent of the total ES value. The top-ranking ES provided by wetlands was flood risk mitigation, valued at $2,544 to $3,651 per acre per year.

**Global estimates of the value of ecosystems and their services in monetary units, 2012**
An international study team analyzed more than 320 publications over 300 case study locations around the world to yield an overview of ecosystem service values for ten major biomes. Their analysis showed that the value of ecosystem services is considerable, although values are variable due to the contextual nature of studies and inherent uncertainties in valuation.

Comparative ranges of values for each biome are shown in the following chart. Values are expressed in “international dollars” (Int. $), a hypothetical unit of currency that standardizes monetary values across countries by correcting to the purchasing power of the US dollar at a given time (2007). Benefits are stated in Int. $ / hectare (2.47 acres) / year. The numbers of studies reviewed are provided in parentheses with each of the ten biomes. Of note, inland wetlands were the most studied of the ten biomes, with 168 valuation case studies reviewed.

The reviewed studies calculated the highest ES economic values for coral reefs, coastal wetlands and coastal systems, followed by inland wetlands, which had an ES mean value of Int. $25,682/hectare/year, or

---


Int. $10,397/acre/year. Comparing ES valuations among biomes present in Dakota County, the reported mean ES valuation for inland wetlands was higher than for rivers and lakes, temperate forest, grasslands, and woodlands.

**Range of Valuations for Ten Biomes in International$ per Hectare per Year**

<table>
<thead>
<tr>
<th>Biome</th>
<th>Low Value</th>
<th>High Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Open oceans (14)</td>
<td>1</td>
<td>10,000,000</td>
</tr>
<tr>
<td>Woodlands (21)</td>
<td>10,000</td>
<td>100,000</td>
</tr>
<tr>
<td>Grasslands (32)</td>
<td>100</td>
<td>1,000,000</td>
</tr>
<tr>
<td>Temperate Forest (58)</td>
<td>1,000</td>
<td>10,000,000</td>
</tr>
<tr>
<td>Rivers and Lakes (15)</td>
<td>10,000</td>
<td>100,000</td>
</tr>
<tr>
<td>Tropical Forest (96)</td>
<td>100,000</td>
<td>1,000,000</td>
</tr>
<tr>
<td>Inland wetlands (168)</td>
<td>1,000,000</td>
<td>10,000,000</td>
</tr>
<tr>
<td>Coastal systems (28)</td>
<td>10,000,000</td>
<td>100,000,000</td>
</tr>
<tr>
<td>Coastal wetlands (139)</td>
<td>100,000,000</td>
<td>1,000,000,000</td>
</tr>
<tr>
<td>Coral reefs (94)</td>
<td>1,000,000</td>
<td>10,000,000</td>
</tr>
</tbody>
</table>

**Summary**
- A well-established body of research has established consensus that natural resources and systems provide significant societal and economic benefits.
- ES valuation methods, contexts, and metrics vary.
- Based on several studies, wetlands may provide more relative economic benefits than forest and grasslands.

2. **Context provided by related plans and programs**

   **A. COUNTY PLANS**

   Dakota County’s activities related to land protection and natural resource quality are mostly governed by the following plans:

   - **Dakota County 2040 Comprehensive Plan (DC2040):** adopted 2019. DC2040 identifies high-level goals and strategies for protection of natural resource quality on a county-wide basis, such as natural area protection and surface- and groundwater protection and enhancement. DC2040 also addresses natural resources protection and management in the County Park System and the Mississippi River Corridor Critical Area.

   - **Dakota County Natural Resources Management System Plan:** adopted 2017. Addresses long-term management needs and actions in the Dakota County Park System and on private land conservation easements held by the County. Greater detail is provided in individual park and greenway natural resources management plans as they are developed or updated.

   - **Dakota County Park System Plan:** adopted 2008. The Plan identifies high-level land protection and natural resources management needs and priorities for parks and greenways in the Park System. Greater detail is provided in master plans and natural resources management plans as they are developed or updated for individual parks and greenways.
Draft Land Conservation Plan for Dakota County

Dakota County Farmland and Natural Area Protection Plan: adopted 2002. The Plan identified 36,000 acres of priority natural areas and 42,000 acres of priority farmland for voluntary protection by landowners, and established protection tools and strategies. The Farmland and Natural Areas Program has prepared individual natural resource management plans for easements enrolled in the program.

B. STATE, FEDERAL, AND REGIONAL CONSERVATION AND WILDLIFE PLANS AND PROGRAMS

Existing plans authored by state and federal agencies and conservation organizations address conservation and wildlife issues that are relevant to the County’s Land Conservation Planning efforts. The following table highlights the reviewed plans, key recommendations or goals, notes on how the plan relates to County planning, and the potential for a County collaborative role in implementing the plan.

Conservation and Wildlife Plans and Programs Reviewed

<table>
<thead>
<tr>
<th>Plan</th>
<th>Key Conservation and Wildlife Recommendations and Goals</th>
<th>Relevance to the County</th>
<th>County Role?</th>
</tr>
</thead>
<tbody>
<tr>
<td>MN Statewide Conservation and Preservation Plan, MN DNR, 2008</td>
<td>1. Protect priority land habitats (native prairie, savanna, old-growth forest, connections)</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td></td>
<td>2. Protect critical shorelands of streams and lakes</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>3. Improve connectivity and access to outdoor recreation</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>4. Restore and protect shallow lakes</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>5. Restore land, wetlands, and wetland-associated watersheds</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>6. Protect and restore critical in-water habitat of lakes and streams</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>7. Keep water on the landscape</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>8. Protect large blocks of forested land</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Minnesota’s Wildlife Action Plan, MN DNR, 2015</td>
<td>1. Ensure the long-term health and viability of Minnesota’s wildlife, with a focus on species that are rare, declining, or vulnerable to decline.</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td></td>
<td>2. Enhance opportunities to enjoy Species in Greatest Conservation Need and other wildlife and to participate in conservation</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>3. Acquire the resources necessary to successfully implement the Minnesota Wildlife Action Plan</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Minnesota Prairie Conservation Plan, MN DNR, 2011</td>
<td>1. Prairie core area–based conservation: areas of at least 10,000 acres are most functional</td>
<td>Limited</td>
<td>N</td>
</tr>
<tr>
<td></td>
<td>2. Corridor-based conservation: between core areas allows species movement</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>3. Local conservation: is essential and a minimum of 10% of the terrestrial lands in each major watershed outside the core areas, corridors and strategic habitat complexes should be set aside for soil, water and wildlife conservation purposes</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Strategic Habitat Conservation. Our Conservation Approach, US Fish and Wildlife Service (USFWS), 2016</td>
<td>1. Start with ecologically meaningful scales: larger vs smaller, may cross jurisdictional boundaries</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>2. Work in partnership to maximize effectiveness and efficiency: involve a diversity of partners</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>3. Use Adaptive Management Framework: with biological planning, conservation design, monitoring and research, science and tools</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>4. Use Surrogate Species to Implement Strategic Habitat Conservation: focus on outcomes for a limited number of species</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Scientific and Natural Areas Strategic Land Protection Plan, MN DNR, 2008</td>
<td>1. The state’s natural heritage is not lost from any ecological region of Minnesota, including: Plant and animal communities, Rare species (endangered, threatened, special concern, and Species in Greatest Conservation Need) and supporting habitat, Places of biodiversity significance, Geological features (significantly illustrate geological processes, are of statewide significance, and significant fossil remains)</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td></td>
<td>Y Analyses on Biodiversity Significance Ranking, specific SNAs in County. Source of parallel metrics for the County</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Y Future SNA additions as opportunities occur</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
### Key Conservation and Wildlife Recommendations and Goals

<table>
<thead>
<tr>
<th>Plan</th>
<th>Relevance to the County</th>
<th>County Role?</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Managing Minnesota’s Shallow Lakes for Waterfowl and Wildlife, MN DNR, 2010</strong></td>
<td>Limited County has few shallow lakes as identified by the Plan</td>
<td>N</td>
</tr>
<tr>
<td>Increase grassland and wetland restoration and protection of native habitats in the direct contributing catchment basins of shallow lakes.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Shallow lakes provide important habitat to many environmentally sensitive species, including over 20 species listed as a species of greatest conservation need (SGCN).</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Metro Conservation Corridors Program, MN DNR, to 2006</strong></td>
<td>Areas in County identified by Program</td>
<td>Potential</td>
</tr>
<tr>
<td>1. Establish priorities, coordinate work by the partner organizations and focus on areas with greatest regional importance as core habitat, habitat corridors, buffers for existing protected land, and increase public access to nature-related recreation.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Protect and restore priority natural lands in focus areas:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Restore habitat on up to 1,700 acres of private and public land.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Protect land by acquiring fee title and conservation easements from willing landowners on about 600 acres.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Note: Program is currently not active and has not been funded since 2011</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Federal Species Listing, USFWS, 2016</strong></td>
<td>Areas of County provide habitat for these species</td>
<td>Y</td>
</tr>
<tr>
<td>Dakota County is home to several species on the federal threatened and endangered species list:</td>
<td></td>
<td></td>
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<tr>
<td>• Northern Long-Eared Bat</td>
<td></td>
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<td>• Higgins Eye Pearly Mussel</td>
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<td></td>
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<tr>
<td>• Rusty Patched Bumble Bee</td>
<td></td>
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<tr>
<td>• Prairie Bush Clover (potential)</td>
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<tr>
<td>Plans provide guidance for protection and management of these species</td>
<td></td>
<td></td>
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<tr>
<td><strong>MN White-Tailed Deer Management Plan, MN DNR, 2019</strong></td>
<td></td>
<td></td>
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<tr>
<td>Plan Goals most relevant to Dakota County</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>1. Healthy Habitat: Maintain natural wildlife habitat by protecting, enhancing and restoring habitat and by managing for an appropriate number of deer.</td>
<td></td>
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<td>2. Impact of Deer on Other Resources: Reduce negative impacts of deer to the land, resources and other species, including people.</td>
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<tr>
<td><strong>Urban Bird Conservation for the Twin Cities and Surrounding Area, Audubon Minnesota, 2012</strong></td>
<td>Important Bird Area</td>
<td>Y</td>
</tr>
<tr>
<td>The guide draws on expertise of agencies, municipalities and conservation organizations to ensure that:</td>
<td></td>
<td></td>
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<tr>
<td>• key habitats are protected or enhanced</td>
<td></td>
<td></td>
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<tr>
<td>• threats and hazards to birds are identified and reduced</td>
<td></td>
<td></td>
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<tr>
<td>• residents and citizens are engaged in conservation action</td>
<td></td>
<td></td>
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<tr>
<td>• scientific monitoring needs are identified and supported</td>
<td></td>
<td></td>
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<tr>
<td><strong>Blueprint for Minnesota Bird Conservation, MN DNR, 2014</strong></td>
<td>Identifies habitat in County</td>
<td>Y</td>
</tr>
<tr>
<td>Identifies target bird conservation species and outlines habitat protection and management goals for these species in the MN Prairie Hardwood Transition Region, including Forster’s Tern, Red-Headed Woodpecker, Wood Thrush, Louisiana Waterthrush, Prothonotary Warbler, Cerulean Warbler, Eastern Meadowlark, Yellow-Headed Blackbird, Loggerhead Shrike, Black Terns, Trumpeter Swans, Henslow’s Sparrows, and Wood Ducks</td>
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<tr>
<td><strong>Birds of Conservation Concern, USFWS, 2008</strong></td>
<td>Identifies the migratory and non-migratory bird species (in addition to federally threatened or endangered) that represent the Service’s highest conservation priorities.</td>
<td>Y</td>
</tr>
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<td></td>
<td></td>
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<tr>
<td><strong>Specific Bird Species Conservation Plans, various</strong></td>
<td>Helps determine land protection and restoration goals</td>
<td>Y</td>
</tr>
<tr>
<td>A number of species-based plans prepared by organizations and agencies address habitat protection and management for the Upland Sandpiper, Grasshopper Sparrow, Loggerhead Shrike, Red-Headed Woodpecker, Cerulean Warbler, and Henslow’s Sparrow.</td>
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</tbody>
</table>

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*Draft for Board Consideration for Release*
Summary
- Plans identify many overlapping areas of interest and need
- Current focus areas include Species in Greatest Conservation Need and pollinators
- Climate uncertainty is recognized in some of the more recent plans, although the best way to address this uncertainty is still evolving
- Most plans speak to partnership opportunities and needs

C. WATER PLANS IN DAKOTA COUNTY

The purpose of the inventory and assessment was to research existing comprehensive planning documents as it relates to developing long term land protection goals for water or wildlife management purposes. The following plans were reviewed:

**Dakota County Soil and Water Conservation District (SWCD)**
The SWCD Comprehensive Plan (2016-2025) identifies a number of objectives and strategies county-wide to protect and restore surface water quality, groundwater quality and supply, restore wildlife habitat and improve soil health. Specifically, the Plan indicates it will work with Dakota County to:

- Develop a conservation easement program for wetland restorations to reduce flood impacts
- Develop a conservation easement program for riparian areas to reduce flood impacts
• Establish conservation easements over designated floodplain areas currently in either agricultural production or urban use to reduce flood impacts
• Collaborate on easement programs to install pollinator plant communities to restore habitats.

The SWCD is responsible for assisting the Minnesota Board of Water and Soil Resources to implement State easement programs such as the Reinvest in Minnesota, Conservation Reserve Enhancement Program and Wetland Banking easements under the Minnesota Wetland Conservation Act.

The SWCD Plan identified the need to develop individual sub-watershed analysis (SWA) whereas water quality improvement projects are identified at a smaller watershed scale to prioritize projects with the highest estimated cost/benefit. Four SWAs will be completed by the end of 2019. The SWAs primarily look at soil loss and phosphorus loading since current modeling tools are most appropriate for those pollutant indicators.

**Black Dog Watershed Management Organization (BDWMO)**
The BDWMO Comprehensive Water Management Plan (2012-2022) has multiple water quality initiatives, identifies priority resources and seeks to protect and enhance fish and wildlife habitat. However, it does not specifically identify locations or land areas to pursue long-term protection options. Rather it includes more general statements such as it will preserve and enhance the quality of open space, protect and enhance fish and wildlife habitat and protect and increase recreational opportunities.

**North Cannon River Watershed Management Organization (NCRWMO)**
The NCRWMO Comprehensive Water Management Plan (2013-2023) has multiple water quality initiatives, identifies priority resource areas and seeks to protect and enhance fish and wildlife habitat. It identifies the goal of wetland restoration projects within the Chub Creek Watershed but does not specify a method of protection such as easements, acquisition or cost share contracts. The NCRWMO Plan also identifies working with the DNR to develop a management plan for the Chub Lake Wildlife Management Area and to advocate with Dakota County the preservation and protection of critical natural areas, farmland and wetlands in the watershed for wildlife, habitat and recreation.

**Eagan-Inver Grove Heights Watershed Management Organization (E-IGHWMO)**
The E-IGHWMO Comprehensive Water Management Plan (2016-2025) has multiple water quality initiatives, identifies priority resources and seeks to protect and enhance fish and wildlife habitat. However, it does not specifically identify locations or land areas to pursue long-term protection options. Rather it has more general statements such as it will protect and enhance fish and wildlife habitat and water recreational facilities.
Lower Minnesota River Watershed District (LMRWD)
The LMRWD Comprehensive Water Management Plan (2018-2027) has a number of water quality initiatives. Namely, it has listed strategies to develop a mechanism for identifying and acquiring high value natural area conservation easements and encouraging wildlife connectivity projects that achieve multiple goals such as water quality improvements, fen and steep slope protection. Of note, it also includes a strategy to develop vegetation management standards. Since the LMRWD Plan also includes significant portions of Hennepin, Scott and Carver counties, it is unknown what opportunities exist within the Dakota County portion of the watershed.

Lower Mississippi River Watershed Management Organization (LMRWMO)
The LMRWMO Comprehensive Water Management Plan (2011-2021) has multiple water quality initiatives, identifies priority resources and seeks to protect and enhance fish and wildlife habitat. However, it does not specifically identify locations or land areas to pursue long-term protection options. Rather it has more general statements such as it will evaluate and pursue locations to conduct wetland restoration projects or reduce future flood potential. The LMRWMO does not identify a specific method of protection.

Vermillion River Watershed Management Organization (VRWJPO)
The VRWJPO Comprehensive Water Management Plan (2016-2026) has multiple water quality initiatives, identifies priority resource areas and seeks to protect and enhance fish and wildlife habitat. It identifies the goal of establishing wetland banks in the watershed which is a State sponsored easement program. The VRWJPO Plan does not identify specific locations or methods for the long-term protection of water and wildlife management purposes but does identify collaboration with others including Dakota County to evaluate long-term land and water protection opportunities. It was noted that the VRWJPO Plan also includes the development of SWAs mentioned above and has collaborated with the SWCD under this initiative.

Key Findings for Water Plans
• The general plan focus is on water quality and quantity, although some of the newer plans also discuss wildlife habitat
• The plans make limited reference to land protection and easement acquisition, but the need exists and most watershed management organizations do not acquire land
• Sub-watershed analyses will help identify specific areas for enhanced conservation practices specific to sediment and phosphorus loading within sub-watersheds

D. CITY AND TOWNSHIP PLANS IN DAKOTA COUNTY
Staff reviewed current 2018-2019 comprehensive plans prepared by the eleven large cities, several small cities, and twelve rural townships in Dakota County for land protection and natural resource goals.

City Plans
Most of the larger cities in Dakota County have some staff dedicated to land protection and natural resources management, most typically in park departments.

Land Protection: the following themes were noted related to permanent land protection:
• More than half of the city plans identified needs for open space/natural area protection not related to parks acquisition, and some referenced working with Dakota County on land protection.
• Roughly half of the large city plans called for connecting habitat corridors linking natural areas, not necessarily greenways as defined by County plans.
• Fewer city plans identified protection needs for wetlands and floodplain. At least one city seeks permanent protection of floodplain.

• Six cities are with the Mississippi River Corridor Critical Area (MRCCA) and their Comprehensive Plans included a MRCCA component. Several city plans considered protection of bluffs, steep slopes, and floodplain within their MRCCA section.

• Relatively fewer cities in Dakota County have farmland or are adjacent to farmland, and a few of the cities include a goal of protecting prime farmland or farming in their comprehensive plans.

• Most city plans referenced land protection as part of their parks system chapter, either acquiring land for existing parks or adding new parks in response to population growth and development.

• Most city plans also referenced working with the County Greenway Collaborative on protecting land for greenways in their cities.

**Natural Resources Management:** Greater variability was seen among city plans related to natural resources management, in part related to the community’s vision, location, natural resource base, age and degree of development. Relatively few cities appear to have a stand-alone natural resources management plan for either their park systems or at a community wide level. Burnsville is an exception, with a citywide Natural Resources Management Plan and a citywide Wetland Management Plan. Several city comprehensive plans called for future development of either a park system natural resource management plan or a citywide environmental plan.

Common natural resource management goal areas presented in city comprehensive plans include:

- Invasive species management
- Native species enhancement (more commonly in parks)
- Surface water quality
- Sustainability (e.g., waste reduction, energy conservation)
- Education to residents on range of environmental topics

**Rural Collaborative Plan**
Most townships in Dakota County (with the exception of Eureka and Sciota townships) participated in the Rural Collaborative Comprehensive Planning process. The Collaborative Plan’s land protection and natural resource management policies are highly consistent with County’s, as the following excerpt shows:

**Environmental Resources Policies:**

- Work cooperatively with Dakota County and other organizations that support the goals of protecting natural areas and corridors in southern Dakota.

- Develop and implement a protection and management plan for natural areas that includes:
  - A cohesive system of natural areas connected by natural corridors
  - Areas identified and prioritized for preservation, protection, or restoration
  - A functional classification of natural areas based upon appropriate use, including recreation, preservation, hunting, agricultural, private
  - Land protection strategies for targeted areas, including voluntary conservation plans, donation or purchase of conservation easements, transfer of development rights, purchase of development rights, acquisition
  - Strategies and standards for the long-term management of natural areas
  - A description of partnerships with other units of government to protect shared natural areas
  - Innovative and appropriate natural area agricultural practices
Funding and funding sources

- Work with Dakota County and Dakota SWCD to identify, evaluate, and map locally important natural areas.
- Enforce provisions in local ordinances that provide for and promote the protection of regionally and locally-important natural areas, including:
  - Protection of undisturbed natural areas in southern Dakota County
  - Protection of natural areas with scientific, cultural, or local significance
  - Protection and enhancement of the ecological diversity of southern Dakota County
- Involve citizens and stakeholders in the planning process and in programs for managing and restoring natural areas
- Use park dedications or cash-in-lieu donations in new cluster developments to acquire high quality natural areas
- Encourage permanent set-aside programs to create and protect open space, create wildlife habitat, protect surface and ground water quality, and reduce erosion and sedimentation in streams
- Encourage the use of native species in plantings where soil disturbance requires long-term erosion control, through local ordinance regulation and WMO standards, on public lands, reclamation projects on private land, natural areas, and similar projects
- Actively seek funding to acquire priority areas
- Support education of residents to increase the knowledge, skills, motivation, and commitment to work individually and collectively toward protecting natural resources

3. Program Opportunities

Program refinements to assist participating landowners were explored. Known gaps to address include:

- Adequately addressing the long-term natural resources management needs on private easements. Most funding sources currently used by the Program do not cover long-term management costs.
- Seeking greater tax equity for easement lands that no longer generates income. Land enrolled in the program continues to be taxed at its pre-enrollment rate, typically the tax rate for agricultural land. At the same time, local governments depend on existing tax base.

E. POTENTIAL LANDOWNER INCENTIVES

As noted in discussing program gaps, landowners are ultimately responsible for long-term natural resource management on their land protected by easements, and funding to assist them is often limited to initial restoration. The gap occurs when ongoing maintenance of restored areas continues beyond a required three-year period, after which funding assistance may no longer be available to landowners. In addition, landowners often continue to pay the same level of property tax on land in easements, whether or not the land is in agricultural production and generating income. Staff from Dakota County’s Office of Performance Analysis explored two potential means of reducing tax burden to encourage residents to participate in conservation easement or transfer of fee title for conservation easements:

A. Targeted reduction in property taxes for those with conservation easements
B. County tax credits for residents participating in the conservation easement program, similar to federal income tax deductions for charitable contributions

Reduction in Taxes: Minnesota Statutes 2018, section 273.117, Conservation Property Tax Valuation, rules out property tax reduction for conservation easement purposes, but subsection (b)(2) provides Dakota County a unique exception as the county adopted the Farmland and Natural Area Program (FNAP) via...
referendum. As a result, Dakota County has the option and authority to reduce valuations of property subject to a conservation restriction or easement. Dakota County makes some use of this, re-classifying the property tax of parts of some private lands with conservation easements in order to reduce the fee title owner’s associated property taxes and provide a financial incentive to landowners to participate in the conservation easement program.

Property taxes assessments are based on the “highest and best use” of a parcel, and the restrictions placed on parts of a property by a conservation easement reduce the potential “highest and best use” of that given parcel. Assessing staff noted that property tax reductions that are granted result in a de minimis shift of the tax burden to the rest of Dakota County taxpayers. In other words, the difference between the assessed highest and best use property tax valuation prior to the conservation easement and following a conservation easement will be shared and paid by the other county taxpayers.

**Potential Tax Credits:** Like other charitable contributions, the donation of a conservation easement may allow the landowner to claim a federal income tax deduction for the value of the easement.21 Perpetual conservation easements can be used to gain up to a 50% federal income tax deduction off of adjusted gross income in a given year, with a carry-forward of an additional 15 years, and up to a 100% federal tax deduction for the 16 years in the case of agricultural lands. 22

Minnesota is not one of the 15 or so states that provide landowners with state income tax credits for gifts of land or easements.21,23 Attempting to change Minnesota state law is not likely to be successful at this time, but is an area to keep an eye on for the future as a number of other states do have relevant state statutes in place.

There is precedent for offering tax credits at a county-level, but no examples were found of counties that offer such credits that were not located in states with state-level income tax credits for such a purpose. For example, of the 24 counties in Maryland, 10 counties offer county property tax credits for perpetual conservation easements.24 These vary in their terms, with lengths ranging from 1 to 5 years and amounts of the credit ranging from a set percent of associated county property tax obligations (e.g. 75%-100%) to a set dollar amount cap (e.g. up to $500). As a result, it appears there is no precedent for a county offering tax credits for easements when there is not a related state income tax credit in place.

**Summary**
- Tax credits may be the most feasible option that would not impact tax base for LGUs or shift taxes to other payers.

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23 The history of Colorado’s state income tax credit, as well as unintended consequences such as the fragmentation of property by landowners to maximize eligibility for the tax credit and the creation of pass through LLCs by non-Colorado residents for the sole purpose of qualifying for the credit, is described in: Jay, J. Changes to Colorado’s Conservation Income Tax Credit Law. *Real Estate Law Newsletter.* 2003. 32(2).
Pine Bend Bluffs State Scientific and Natural Area, protected with assistance from Dakota County