Washington County
Natural Resources Protection and Management System Framework
Technical Advisory Committee
Wednesday, November 7, 2018
Washington County Gov’t Center, Room 5599
14949 62nd St. N., Stillwater, MN
9 a.m. to 12 noon

Agenda

1) Vision, Mission, Values and Principles, Dan MacSwain and June Mathiowetz
   (Attachments A, B, C)

2) New maps review and clarifications, Aaron DeRusha and Jay Riggs
   (Attachment D)

3) Report structure, Jay Riggs and June Mathiowetz (Attachment A)
   BREAK – 5 minutes

4) Small Groups: Review of What’s working/Not working/What’s next feedback
   (Attachment E), Tara Kelly
   • What stood out to you?
   • Was there anything that surprised you?
   • Is there anything missing?
   • Which items seemed to be what you expected?
   • What themes emerged?
   • What do the responses tell us about future actions of our group?

Large Group:
• What are the most urgent and pressing natural resource needs facing the County?
• How do we want this plan to address the natural resource issues facing the County?

5) Benchmarking for management, protection and private lands, Dan MacSwain, June
   Mathiowetz, Jay Riggs (Attachment F)

6) Next Steps
Washington County

Natural Resource Protection and Management System Framework

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    A. Washington County Vision, Mission, Values, Goals and Strategies
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    B. Links to Relevant and Related Plans
ACKNOWLEDGEMENTS

This Natural Resource Management System Plan for Washington County is the result of stakeholder engagement process. A special thanks to all of the following contributors:

**Washington County Board**
- District 1 - Fran Miron
- District 2 - Stan Karwoski
- District 3 - Gary Kriesel, Chair
- District 4 - Jack Lavold
- District 5 - Lisa Weik

**Washington Conservation District Board**
- District 1 – Bob Rosenquist
- District 2 – Jim Levitt
- District 3 – John Rheinberger, Chair
- District 4 – Louise Smallidge
- District 5 – Diane Blake

**Stakeholder Committee - Washington County Parks and Open Space Commission**
- District 1 - Ben Meyer
- District 1 - Jyneen Thatcher
- District 2 - Glen Bearth
- District 2 - Michael Kraemer
- District 3 - Tori Dupre
- District 3 - James Kelly
- District 4 - Meghan Bernard, Chair
- District 4 - Michael Kramer
- District 5 - Andy Joyce
- District 5 - Corcoran Wicker
- At Large - David Ratte
- At Large - Vacant

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- Andy Schilling
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- Tara Kelly
- Jay Riggs, District Manager

**Washington County Staff**
- Dan MacSwain, Parks
- June Mathiowetz, Administration
- Ann Pung-Terwedo, Public Works
- Stephanie Souter, Public Health and Environment

**Washington County Planning Advisory Commission** (recheck 2 vacancies later)
- Mark Doneux
- Julia Miller
- Charles Newman
- Francis Rheinberger
- Andrew Tjernlund
- Robert Viking
- Terry Zoller
This section presents principles, vision, goals and approaches for successfully managing natural resources. It also includes important considerations for implications of managing natural resources. Based on the current conditions of the resources and principles, the plan goals and approaches set a path for reaching the vision.

The principles, vision, goals, and approaches were presented to and reviewed by the following groups: the public, the Technical Advisory Committee, the County Planning Commission, and the County Board of Commissioners.

10.1. PRINCIPLES

A principle, according to the Webster Dictionary, is "a fundamental truth or proposition that serves as the foundation for a system of belief or behavior or for a chain of reasoning." Principles form the foundation for managing the natural resources in Dakota County parks, easements, and greenways.

It is important to consider that one of the primary reasons to manage natural resources is to preserve biological diversity—biodiversity—the variety of life, including all species, species interactions, and the underlying genetic diversity. For several decades, the scientific community has considered the loss of species and genetic diversity as one of the great challenges of our time. The main contributors to biodiversity loss are habitat loss and fragmentation, forest and other habitat deterioration; invasion by non-local species, and climate change. Addressing biodiversity loss in Dakota County, where considerable loss has already occurred, is helped by using the precautionary principle. In the absence of information about the damaging effects of development and management on natural resources, developers and managers should exercise caution when implementing development and management plans. An assumption of no harm in the absence of data does not mean no harm will result. A thoughtful approach to development and management
requires that unforeseen and unintended consequences be identified and considered when executing plans.

The principles for natural resource management, listed below were influenced and modified by the public. For instance, since the public places such a high value on the County’s natural resources, this was reflected in the principles. At a high level, these principles reflect what is considered to be the well-established and accepted foundation for natural resource management by the profession.

10.1.1. Foundational Principles of Natural Resources Management

Foundational natural resource management principles include:

- Natural resources and natural communities exist as interrelated, dynamic systems that have developed over thousands of years.
- Natural resources have value apart from public benefits.
- Natural areas and habitat have been significantly lost, fragmented and degraded.
- Natural processes have been disrupted, resulting in degradation (diminished function and reduced benefits).
- Natural resource management is necessary to halt and reverse the trends of degradation.
- Biodiversity is an important measure of site quality, community resilience and biotic potential.
- Larger, contiguous habitat areas provide more ecological success than many smaller or linear areas, and connectivity between habitat areas is important.
- Restoration is a process, not a point in time and often there is no clear endpoint.
- Natural resources, natural communities and ecosystems are not confined to jurisdictional or property boundaries.
- Natural resources provide multiple public benefits.

10.1.2. Shared Principles between NRMSM and Visitor Services Strategic Operations Plan

At the same time the County was developing the NRMSM, the County was also developing the Visitor Services Strategic Operations Plan (VSSOP). The purpose of the VSSOP is to improve and deliver public services that enrich the overall County park and greenway experience, including recreation amenities (like food), events, outdoor education, volunteerism, rentals, customer service, and marketing. Since both plans have overlapping goals and outcomes that affect in the visitor’s experience, the NRMSM and the VSSOP were developed in conjunction with each other.

The following are the shared NRMSM and the VSSOP principles:

- **Balance**: Nature-based parks should protect natural resources while encouraging recreational use, to gain the benefits of people experiencing the natural world.
- **Build Appreciation**: Nature-based parks and visitor services build appreciation of the natural world through discovery, learning, and recreation in natural settings.
- **Stewardship Benefits**: Natural resource management provides cleaner air and water, biological diversity, native species habitat, improved visitor experience, community attractiveness, and public appreciation for natural resources.
- **Synergy**: Nature-based parks should build synergy between visitor services and resource management through events, education, volunteerism, marketing and thoughtful design.
- **Community Engagement**: Natural resource management on County land should recognize public values and preferences, and provide opportunities for public engagement, education and volunteerism.

10.1.3. Working Principles of NRMSM

The following principles will guide the short- and long-term implementation of this NRMSM:

- Natural resource management is necessary to halt and reverse degradation to natural systems, and requires long-term commitment.
- Natural resource management should improve and sustain interrelated natural resource systems (especially for rare and declining native species).
- Natural resource management should address historic, current and adjacent land uses.
- Natural resource management on protected private lands (easements) improves resource quality and provides public benefits.

10.2. VISION

A vision, according to the Webster Dictionary, is “an aspirational description of what an organization would like to achieve or accomplish in the mid-term or long-term future. It is intended to serve as a clear guide for choosing current and future courses of action.”
It is important to have an inspiring, but pragmatic vision for natural resource management on appropriate public and private lands based on a number of integrated social, ecological and economic principles and other considerations. After understanding the quality of the County’s natural resources through inventory and assessment, and then applying planning principles, what emerged was as a realistic and compelling vision to take Dakota County’s natural resources from their current baseline conditions. Through internal County/consultant discussions and consideration of public input, the following vision statement was developed for this NRMSP:

The water, vegetation, and wildlife of Dakota County parks, greenways, and easements will be managed to conserve biodiversity, restore native habitats, improve public benefits, and achieve resilience and regionally outstanding quality, now and for future generations.

10.3. GOALS
A goal, according to the Webster Dictionary, is “the object of a person's ambition or effort; an aim or desired result. What you want to accomplish.” A “SMART” goal is Specific, Measurable, Assignable, Realistic, and Time-based. The following goals, organized by topic, emerged from the principles and vision:

10.3.1. Vegetation Management Goals in Parks
- Focus initial invasive species control on the most invasive species in the highest quality areas
- Sufficiently install native seed/plants to limit response of invasive plants
- Follow best management practices and latest scientific methods to achieve success
- Monitor to track progress and facilitate adaptive management
- Maintain vegetation perpetually in restored areas
- Designate higher quality natural areas, unique habitat value, or already restored areas (within the park system where the priority use and management will be to improve and maintain natural resource integrity
- Refine natural resource management priorities and activities through park-specific Natural Resource Management Plans (NRMPs) and Master Plans and updates

10.3.2. Water Resources Management Goals in Parks
- Focus efforts to address listed surface water impairments based on lakes study and collected data
- Focus on the most significant aquatic invasive species (AIS) (Eurasian watermilfoil and curly leaf pondweed) and the most significant wetland invasive species
- Employ an early detection- rapid response approach to preventing new AIS invasion
- Work with partners outside park boundaries, in park watersheds to install stormwater best practices at priority locations to address listed impairments
- Monitor (by County and others) to track progress and facilitate adaptive management
- Refine management priorities and activities through park-specific NRMPs and Master Plans
- Water leaving parks should be as clean or cleaner than water entering the parks

10.3.3. Wildlife Management Goals in Parks
- Surveys will be conducted for wildlife indicator species associated with major plant communities
- Monitoring (both short- and long-term, by County and by others) will track progress and be used to guide adaptive management activities and priorities for selected resident and migratory species
- Ongoing development of park-specific NRMPs and Master Plans will refine management activities and priorities
- Include wildlife management in the development and updates of NRMPs; include wildlife as potential priority feature of each park’s NRMP

10.3.4 Greenway Goals
- The most highly invasive species should be controlled since greenways can contribute to the spread of invasive species.
- Restoration and enhancement of high quality areas within County-owned lands and easements will improve visitor experience and can reduce long-term maintenance costs.
- It will be important to work with a range of partners to restore and enhance non-County-owned lands and easements within regional greenway corridors and to identify opportunities for collaboration and increased efficiencies
- Wildlife surveys should be conducted for key indicator species
  - Monitoring will track progress and facilitate adaptive management
- NRMPs should be developed for each regional greenway
- Greenway-specific NRMPs, Master Plans and updates will refine management activities and priorities

10.3.5 Conservation Easement Goals
- Public investments should be based on a public-private cost-share formula that will be differentiated based on potential impacts to impaired waters and high quality natural areas.
- Annual monitoring will ensure easement compliance and track progress and facilitate adaptive management
- NRMPs should be developed for important natural areas within agricultural easements and updated every five years for all easements
- Landowners are responsible for maintenance for three years beyond restoration project completion

10.4. APPROACHES
An approach, according to the Webster Dictionary, is "a way of dealing with something." It answers how something will be done. The approaches for the NRMP were rooted in the principles, guided by the vision and informed by the goals. These approaches were developed by County staff and consultants, and modified and refined by the TAC, the Public, the Planning Commission, and ultimately, the County Board. What emerged was a two-tiered approach, described in Section 11 below.

This two-tiered approach attempted to balance a number of considerations, primarily:
  - Tier 1 and Tier 2 restoration/improvement initiatives and outcomes for the five primary components (below)
  - Estimated Tier 1 restoration/improvement expenses and estimated revenue sources, including anticipated County costs
  - Estimated Tier 1 maintenance expenses and estimated revenue sources, including anticipated County costs
  - Estimated Tier 1 staffing requirements and costs
  - Estimated Tier 1 component and cumulative costs

Tier 1 and Tier 2 activities were each divided into the five plan components: vegetation, water, and wildlife in parks; greenways; and easements. Implementation of the Tier 1 and Tier 2 approaches is discussed in detail starting in Section 11.2.
<table>
<thead>
<tr>
<th>Washington Conservation District</th>
<th>Washington County Overall Goals</th>
<th>Washington County Groundwater Plan</th>
<th>Washington County Public Works</th>
<th>Washington County Comp Plan - Parks, Trails and Open Space</th>
<th>WC Public Health and Environment</th>
<th>One Watershed One Plan</th>
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<tbody>
<tr>
<td><strong>STATE LAW:</strong> The WCD is a special purpose local unit of government created under state statute (103C) dedicated to the conservation of soil and water resources in Washington County; Created in 1942</td>
<td><strong>VISION:</strong> A great place to live, work, and play... today and tomorrow.</td>
<td><strong>MISSION:</strong> To plan, build, and maintain a better Washington County.</td>
<td><strong>MISSION:</strong> To enhance, protect, and preserve the natural resources of Washington County through conservation projects, technical guidance, and educational services to citizens and local government.</td>
<td><strong>VALUES:</strong> • Ethical: to ensure public trust through fairness, consistency, and transparency. • Stewardship: to demonstrate tangible, cost-effective results and protect public resources. • Quality: to ensure that services delivered to the public are up to the organization’s highest standards. • Responsive: to deliver services that are accessible, timely, respectful, and efficient. • Respectful: to believe in and support the dignity and value of members of this community. • Leadership: to actively advocate for and guide the County toward a higher quality of life.</td>
<td><strong>VALUES:</strong> • Ethical: to ensure public trust through fairness, consistency, and transparency. • Stewardship: to demonstrate tangible, cost-effective results and protect public resources. • Responsive: to deliver services that are accessible, timely, respectful, and efficient. • Respectful: to believe in and support the dignity and value of members of this community. • Leadership: to actively advocate for and guide the County toward a higher quality of life.</td>
<td><strong>VALUES:</strong> • Collaboration: Engaging in partnerships that build a stronger community • Prevention: Addressing the underlying causes of community and environmental health threats • Equity: Striving toward fairness, equity, and better outcomes for all • Innovation: Embracing new ideas and methods to improve our services • Integrity: Guided by our values and our professional code of ethics</td>
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<td><strong>MISSION:</strong> To promote the health, safety, and quality of life of citizens. • To provide accessible, high-quality services in a timely and respectful manner • To address today’s needs while proactively planning for the future. • To maintain public trust through responsible use of public resources, accountability, and openness of government.</td>
<td><strong>GOALS:</strong> • To promote the health, safety, and quality of life of citizens. • To provide accessible, high-quality services in a timely and respectful manner • To address today’s needs while proactively planning for the future. • To maintain public trust through responsible use of public resources, accountability, and openness of government.</td>
<td><strong>OVERALL GOAL:</strong> Manage the quality and quantity of groundwater in Washington County to protect health and ensure sufficient supplies of clean water to support human uses and natural ecosystems.</td>
<td><strong>GOALS:</strong> • To promote the health, safety, and quality of life of citizens. • To provide accessible, high-quality services in a timely and respectful manner • To address today’s needs while proactively planning for the future. • To maintain public trust through responsible use of public resources, accountability, and openness of government.</td>
<td><strong>COMP PLAN GOALS:</strong> GOAL 1: Plan, build and maintain a growing network of parks and trails that serve our communities and the greater region. GOAL 2: Protect, enhance and provide access to precious public resources - our land, water, and open space through conservation and stewardship. GOAL 3: Provide opportunities for all people to connect to the outdoors by cultivating a welcoming environment, providing robust programming and building partnerships.</td>
<td><strong>PRINCIPLES:</strong></td>
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<tr>
<td>STRATEGY A: Preserve, conserve, and restore natural resources by implementing sustainable practices that promote biodiversity and healthy ecosystems.</td>
<td>STRATEGY B: Support the preservation of natural and open landscapes of rural areas, and use this land for sustainable agriculture and economic activity.</td>
<td>STRATEGY C: Help maintain financially healthy governments through the provision of public facilities and services.</td>
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<tr>
<td>• Support the preservation of natural and open landscapes of rural areas.</td>
<td>• Use Land and Water Legacy Program Conservation Priorities document to guide investment for the conservation of open space.</td>
<td>Will strive for a systematic, watershed-wide, science-based approach to watershed management, driven by the participating local governments.</td>
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<td>• Conserve long-term land use options.</td>
<td>• Pursue land and right-of-way acquisition within and adjacent to regional parks and trails master plan boundaries.</td>
<td>Will use the state’s delineated major watersheds (8-digit hydrologic unit codes or HUC8) as the starting point for defining the preferred scale for local watershed management planning.</td>
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<td>• Encourage sustainable agriculture as a land use and viable economic activity.</td>
<td>• Continue partnering to expand open space acquisition and stewardship capacity.</td>
<td>Must involve a broad range of stakeholders to ensure an integrated approach to watershed management.</td>
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<td>• Help maintain financially healthy governments through wise planning of land and public facilities such as roads, parks, trails and buildings.</td>
<td>• Develop and implement a plan to manage proper maintenance of conservation easements.</td>
<td>Plans developed should embrace the concept of multiple benefits in the development and prioritization of implementation strategies and actions.</td>
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**GOAL 2: Support the growth of attractive urban communities while preserving rural functions and appearances.**

<table>
<thead>
<tr>
<th>STRATEGY A: Preserve, conserve, and restore natural resources by implementing sustainable practices that promote biodiversity and healthy ecosystems.</th>
<th>STRATEGY B: Support the preservation of natural and open landscapes of rural areas, and use this land for sustainable agriculture and economic activity.</th>
<th>STRATEGY C: Help maintain financially healthy governments through the provision of public facilities and services.</th>
</tr>
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<tr>
<td>• Assess county policy on public access to protected open space.</td>
<td>• Foster a low-density, truly rural land use pattern in areas without public sewer and water.</td>
<td>• Evaluate strategies to protect agricultural resources and rural character within the open space system.</td>
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<td>• Encourage transit-oriented development (TOD), pedestrian-oriented, neotraditional, suburban-style growth that uses land in an efficient manner in locations that connect to transportation and transit systems.</td>
<td>• Consider development of county conservation areas and greenways.</td>
<td>Planning and implementation efforts will recognize local commitment and contribution.</td>
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<td>• Recognize and plan for the county’s share of metropolitan growth.</td>
<td>• Locate commercial and industrial growth where urban services are available; continue to prohibit commercial and industrial land use in unsewered areas.</td>
<td>• Enhance natural areas through active restoration.</td>
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<tr>
<td>• Support the preservation of natural and open landscapes of the county’s rural areas.</td>
<td>• Develop land management practices that include effective and innovative methods, such as conservation-based grazing.</td>
<td>• Promote commercial and industrial development in planned clusters such as business parks and mixed use developments.</td>
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<tr>
<td>• Conserve long-term land use options.</td>
<td>• Develop and implement sustainable forest management plans that address wildlife habitat, forest health, and future forest adaptation.</td>
<td>• Use integrated pest management practices in invasive species management efforts.</td>
</tr>
<tr>
<td>• Encourage sustainable agriculture as a land use and a viable economic activity.</td>
<td>• Develop a comprehensive, strategic park natural resource management approach.</td>
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<tr>
<td>Goal</td>
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<td>Provide for the removal and processing of sand, gravel, rock, soil, and other aggregate materials vital to the economic well being of the region, while protecting adjacent land uses from adverse impacts.</td>
<td>Mitigate impacts to high-value trees, wetlands, and other natural resources in all projects.</td>
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<td>Support land-use patterns that efficiently connect housing, jobs, transportation, transit and retail and commercial centers.</td>
<td>Collaborate with governmental units and non-governmental organizations on land and water stewardship efforts.</td>
</tr>
</tbody>
</table>

**GOAL 4: Work to retain important historic contexts and features, including structures, landscapes, archaeological sites, and pedestrian-oriented village development patterns.**

| | Coordinate partnerships to involve the community in the maintenance of parks and open space. |
| | Continue to acknowledge the county’s history when planning, preserving, and developing its infrastructure. |
| | Continue to preserve natural, scenic, open and agricultural landscapes and encourage preservation of historic sites through land planning activities. |
Maps Description and Discussion

**Map 1: Working Lands- Groundwater Context**

This map displays two selections from the updated MLCSS data overlaying sensitive groundwater areas. Row crops were extracted from the MLCCS data, displayed in yellow, and planted perennial vegetation is displayed in green. The land covers making up both layers are described below:

**Row Cropland**

Upland soils – cropland, Corn, Soybeans, Upland soils - close grown cropland, Cultivated herbaceous vegetation, Row cropland, Wheat, Oats, Barley, Pumpkins, Close grown or solid seeded cropland, All other close grown cropland on upland soils, Other vegetable and truck crops, Corn on hydric soils, Hydric soils - close grown cropland, Planted or Cultivated Vegetation (greater than 96% vegetation cover), Hydric soils - row cropland, Soybeans on hydric soils

**Planted Perennial Vegetation**


Below these layers, in shades of gray, are Karst and High sensitivity groundwater areas identified in the Minnesota Hydrogeologic Atlas. The county’s comprehensive plan has identified preserving the rural character of the county as a high priority; the Metropolitan Urban Service Area 2030 boundary has also been included to show working lands that may be developed within that area.

The goal of this map is to identify the working lands of the county to preserve rural character, and areas that would benefit from BMPs such as conservation grazing. Converting row crop to conservation grazing would preserve rural character and protect soil, surface waters, and groundwater.

**Map 2: Working Lands- Surface Water Context**

This map displays two selections from the updated MLCSS data in the context of surface waters. Row crops were extracted from the MLCCS data, displayed in yellow, and planted perennial vegetation is displayed in green. The land covers making up both layers are described below:

**Row Cropland**

Upland soils – cropland, Corn, Soybeans, Upland soils - close grown cropland, Cultivated herbaceous vegetation, Row cropland, Wheat, Oats, Barley, Pumpkins, Close grown or solid seeded cropland, All other close grown cropland on upland soils, Other vegetable and truck crops, Corn on hydric soils, Hydric soils - close grown cropland, Planted or Cultivated Vegetation (greater than 96% vegetation cover), Hydric soils - row cropland, Soybeans on hydric soils

**Planted Perennial Vegetation**

soils', 'Short grasses and forbs on hydric soils', 'Short grasses and forbs on upland soils', 'Upland soils with planted or maintained grasses and forbs'

On the east side of the county, catchments which directly drain to the St. Croix are shown in peach. These areas represent catchments which directly border the river or a perennial stream which discharges to the river that does not have a waterbody to provide a depositional area, such as a large lake or wetland. In red are waterbodies that have been proposed to be listed as impaired in 2018 by the MPCA.

The goal of this map is to identify the working lands of the county in the context of protecting surface waters and prioritizing efforts in areas that directly discharge to the St. Croix, or are near an impaired water.

**Map 3: Existing High Quality Areas for Protection**

This map displays the results of the Land and Water Legacy Program priority ranking model overlaying Native Habitats and habitats with a Native Plant Community ranking of A, AB, or B. The LWLP model results are the weighted sums of overlays of four modules; surface water, ecological patches, connectivity, and drinking water. The native habitats are a selection from the updated MLCCS data including the following:


The NPC Ranks A-B layer is a selection from the native habitats described above narrowed down to areas which had been field verified in the 2005 and/or 2016 MLCCS updates as having an NPC rank of A, AB, or B, to make the highest quality areas stand out.
Below these layers, in shades of gray, are Karst and High sensitivity groundwater areas identified in the Minnesota Hydrogeologic Atlas. Any high quality areas over sensitive groundwater areas would be a priority for protection. Metropolitan Urban Service Area 2030 boundary has also been included to show high quality lands within the urban growth boundary that should be protected.

The goal of this map is to identify new areas outside of the prior LWLP analysis that should be protected, and provide groundwater context to the LWLP analysis that was not available to be incorporated in that model.

**Map 4: Potential Restoration Areas**

This map overlays two land cover selections from MLCCS, areas for pollinator habitat restoration, groundwater sensitivity, and the MUSA 2030 boundary.

Turf grass is displayed in green, and contains the following land covers:

- 4% to 10% impervious cover with perennial grasses and sparse trees
- 4% to 10% impervious cover with perennial grasses
- Hydric soils with planted or maintained grasses
- Hydric soils with planted or maintained grasses and sparse tree cover
- Planted or maintained grasses with sparse tree cover
- Short grasses and forbs on hydric soils
- Short grasses and forbs on upland soils
- Short grasses and mixed trees with 4-10% impervious cover
- Short grasses on hydric soils
- Short grasses on upland soils
- Short grasses with 4-10% impervious cover
- Short grasses with planted coniferous and/or deciduous shrubs, 4-10% impervious cover
- Short grasses with sparse tree cover on hydric soils
- Short grasses with sparse tree cover on upland soils
- Upland soils with planted or maintained grasses
- Upland soils with planted or maintained grasses and sparse tree cover

Non-native dominated grasslands are displayed in brown, and contains the following land covers:

- Altered/non-native grassland with sparse deciduous trees - saturated soils
- Altered/non-native grassland with sparse deciduous trees - seasonally flooded
- Altered/non-native grassland with sparse deciduous trees - temporarily flooded
- Grassland with sparse conifer or mixed deciduous/coniferous trees - altered/non-native dominated
- Grassland with sparse deciduous trees - altered/non-native dominated vegetation
- Medium-tall grass altered/non-native dominated grassland
- Tall grass altered/non-native dominated grassland

Pollinator “sweet spots” were identified by a model created by Jun Tang working with BWSR. The sweet spots are areas that would benefit from enhancement or restoration of pollinator habitat and connect larger existing high quality habitats. The term “sweet spot” comes from the concept that prime areas are not extremely close to existing habitat, but not too far away; they are somewhere in between to better link habitats to one another. This is based on flight distance of various pollinator species. The layer is semi-transparent on the map to allow overlaps between the sweet spots, turf, and non-native grasslands to be seen by a darker shading of their respective colors.

Underneath these layers are the Karst and High sensitivity groundwater areas identified by the Minnesota Geologic Atlas, and the 2030 Metropolitan Urban Service Area boundary.

The goal of this map is to identify areas that have the potential to be restored, and areas that could be prioritized for restoration. For example, a grassland that is a pollinator sweet spot that happens to be within the 2030 MUSA and over karst geology would be a priority area to restore. This map could also be expanded to show restorable forests with low quality plant community rankings of CD, D, F, Natives Present, and Non Native Dominated.
It is envisioned that layers in each of these maps could be weighted, overlayed, and summed to create “heat maps” showing where areas of interest intersect most often. Even a simple weight of “1” for each layer and a total sum of all layers (Cropland + Planted Perennial Vegetation + Sensitive Groundwater + LWLP Rank + Native Habitats + NPC Ranks A-B + Turf Grass + Non-native Grassland + Pollinator Sweet Spots + MUSA 2030 + Direct Drainage to St. Croix) may be sufficient to prioritize areas to implement protection, enhancement, or restoration.

**Questions for the TAC to consider while reviewing maps:**

- What data is missing?
- Should any data used be excluded?
- Are the maps too “busy” to be useful?
- Should the Potential Restoration Map be divided into two maps, one showing turf grass, non native grasslands, and disturbed forests (plant community ranks CD, D, F, Natives Present, and Non Native Dominated), groundwater sensitivity, and MUSA 2030, and the second showing large core habitat areas such as parks and easements, Pollinator “Sweet Spots”, and Metro Conservation Corridors for prioritizing restoration?
- Do the layers created address the focus areas of the NRPMSF listed below?
  1) Protection of high quality areas;
  2) Restoration and enhancement of native plant communities;
  3) Protection of groundwater and surface water;
  4) Land use management around lakes, streams and the river;
  5) Creation, enhancement, and management of wildlife habitat;
  6) Development of Best Management Practices (BMPs) for working lands including agroforestry, perennial crops, continuous living cover, and conservation grazing; and
  7) Long-term management of County and Washington Conservation District project areas.

- Should the layers be segregated as they are in the three maps and overlayed to create “heat maps,” or combined into a single overlay to incorporate all layers? Or both? (Modules vs. Total Sum approach)

- Do the areas where these layers intersect reflect what you know from professional experience? In other words, do they make sense?
Priority ranked areas were identified using a GIS model developed under the Land and Water Legacy Program in 2010. The model incorporates four modules: surface water, ecological patches, connectivity, and drinking water. The modules give points to high quality surface waters, regionally significant ecological areas and native habitats, corridors between important ecological patches, and critical groundwater protection areas, respectively. Each module is weighted and final scores are assigned to areas where modules intersect, effectively identifying important areas for the county to focus protection resources.
This map features the output of a pollinator habitat restoration model developed in 2017 at RPRI using Washington County as a test area. The model utilizes updated NCCS land cover to identify high quality pollinator habitat and analyzes proximity to other habitats based on assumed flight distances of various pollinators. The "sweet spots" identify areas which would be most cost-effective to implement habitat restorations to connect high quality habitats to one another, rather than restoring marginal isolated habitats or habitats very close to existing high quality areas.

SOURCE DATA:
Washington County Pollinator Seed
Spot Analysis, Jun Tang, Metro Blooms
Minnesota Land Cover Classification System, MNDCP
Minnesota Hydrogeology Atlas, MNDCP
Metropolitan Urban Service Area Composite, Metropolitan Council
24K Lakes, MNDCP
24K Streams, MINDBN
Road Centers, Washington County

PRINT DATE: OCTOBER 2018
Map Prepared By:
Washington Conservation District
<table>
<thead>
<tr>
<th>Working</th>
<th>Not Working</th>
<th>Next</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Stormwater management:</strong></td>
<td><strong>Stormwater management:</strong></td>
<td><strong>Tax code:</strong> Use as incentive</td>
</tr>
<tr>
<td>Private incentives for permeable pavers; easements, rainwater capture</td>
<td>Water conservation, not being embraced publically</td>
<td>Management: more natural resources staff</td>
</tr>
<tr>
<td>Outstanding water quality protection for surface water</td>
<td>Lake water quality (eutrophication)</td>
<td>Use new/improved data for prioritizing (Groundwater, wildlife, rural corridors/character, equity/access)</td>
</tr>
<tr>
<td>Oakdale around Imation site</td>
<td></td>
<td>Working on all the not working</td>
</tr>
<tr>
<td><strong>Collaboration:</strong></td>
<td><strong>Collaboration:</strong></td>
<td><strong>$$$$</strong> Build off of values, civic engagement, social benefits, transition farm tax breaks</td>
</tr>
<tr>
<td>Landowners want to do the right thing</td>
<td>Change specific roles, connectivity needed</td>
<td>Planning and zoning for development</td>
</tr>
<tr>
<td><strong>Communication:</strong></td>
<td><strong>Communication:</strong></td>
<td><strong>Urban vs Rural - need county wide strategy</strong></td>
</tr>
<tr>
<td>Momentum, value, civic engagement around existing protected areas, Awareness of invasive species, Awareness of farming practices and willingness</td>
<td>Messaging about the value of natural resources, people aren't making the connection</td>
<td>Build off of values, civic engagement, social benefits, transition farm tax breaks</td>
</tr>
<tr>
<td><strong>Land Protection:</strong></td>
<td><strong>Land protection:</strong></td>
<td><strong>Communication with public about LWLP acquisition</strong></td>
</tr>
<tr>
<td>Funding mechanisms (county, shoreland grants)</td>
<td>Bolster county capacity and MLT partnerships</td>
<td>Need better individual community engagement, stewardship of natural resources (system design error)</td>
</tr>
<tr>
<td>LWLP identified areas, Good data gathering and prioritization</td>
<td>Urban development pressures, changing &quot;normal&quot;</td>
<td><strong>Inconsistencies along the riverway (south of 94 to Afton)</strong></td>
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<tr>
<td></td>
<td></td>
<td>Not leveraging LWLP money enough; Not getting money for private land acquisition or easement; County unwilling to hold easement on private</td>
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<td></td>
<td></td>
<td>Critical corridor protection based on future land use plans (not integrated with decision-making)</td>
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<td></td>
<td></td>
<td><strong>Protection of farmland (social benefits)</strong></td>
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<td></td>
<td></td>
<td>Corridors (not St. Croix)</td>
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<tr>
<td></td>
<td></td>
<td><strong>Multijurisdictional permitting; Short-sightedness; Better ordinances</strong></td>
</tr>
<tr>
<td><strong>Agricultural land</strong></td>
<td><strong>Agricultural land</strong></td>
<td><strong>More data re: ag land ownership - opportunities for conservation practices and targeted engagement - mailings, 7RFP</strong></td>
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<td></td>
<td></td>
<td><strong>No farmland protection programs in WC - economic and rural benefits</strong></td>
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<td></td>
<td></td>
<td><strong>Awareness of support and management plans for farmers</strong></td>
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<tr>
<td><strong>Management/Restoration:</strong></td>
<td><strong>Management/Restoration:</strong></td>
<td><strong>Funding opportunities</strong></td>
</tr>
<tr>
<td>Habitat creation</td>
<td></td>
<td></td>
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<tr>
<td>Riverway management of protected lands</td>
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<tr>
<td>Natural resources staff: one is better than none</td>
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<td></td>
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<tr>
<td>AIS efforts - county, WCD, watersheds, 85% compliance rates with inspections</td>
<td></td>
<td></td>
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<tr>
<td>Hired Dan; money for AIS</td>
<td></td>
<td></td>
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<tr>
<td>Funding opportunities</td>
<td></td>
<td></td>
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<tr>
<td>Research on BMPs</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Facilities:</strong></td>
<td><strong>Facilities:</strong></td>
<td><strong>Lack of natural processes that would maintain natural areas (fires, etc.)</strong></td>
</tr>
<tr>
<td>Management of these is evolving; Capital improvement plan: natural resources is embedded</td>
<td></td>
<td>Grant money is short-term; need longer-term commitments</td>
</tr>
<tr>
<td><strong>Urban Areas:</strong></td>
<td><strong>Urban Areas:</strong></td>
<td>Invasive species management</td>
</tr>
<tr>
<td>Woodbury, Cottage Grove doing a good job of walkability, livability, around natural areas</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Woodbury is directly managing vegetation in outlots for new development (good model)</td>
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Dakota County’s 2012 Benchmarking Study defined benchmarking as “the process of improving products, services, and practices by measuring them against those organizations with similar characteristics (e.g., socio-demographic factors). Benchmarking provides a tool for public sector staff and administrators to address the changing needs of their constituencies.”

Benchmarking in this NRMSP compares the County’s current natural resource management practices and level of effort with comparable agencies. Comparable agencies were selected because they:

- Were used in previous County benchmarking studies
- Were of similar size and demographics
- Represented a cross-section of agencies engaged in natural resource management
- Managed a large, diverse land base
- Had an established program and good reputation

Of the agencies considered, six were chosen for comparison with Dakota County:

- Anoka County, MN
- Three Rivers Park District, MN
- Washington County, MN
- Dane County (Madison), WI
- DuPage County (Chicago metro), IL
- Polk County (Des Moines), IA

The County and consulting team developed a list of questions to confirm similarities, identify differences, and evaluate natural resources and management practices and outcomes among the entities. The County completed the same survey. Answers to questions were summarized and results tabulated. Since some responses were inconsistent, the results are best used to assess at a high level what success in natural resource management might look like, and what resources would be needed to achieve that success. For instance, comparisons with Anoka County need to consider the fact that since Anoka County consists of almost 50 percent wetlands, Dakota County is actually managing much more land. Comparisons with Washington County need to consider that Washington has a very limited natural resource management program compared to the current program at Dakota County, and accomplishments will reflect that reality. A copy of the benchmarking survey is provided in Appendix M.

An important finding was that, while Dakota County is not yet managing as large a percent of its lands as Three Rivers, DuPage County, Polk County, and Anoka County, it is well positioned to move into that league in the future. This is due to recent County Board com-
mitments to increased County natural resource staff, to significant state grants from the Outdoor Heritage Fund and Environment and Natural Resource Trust Fund, and to available County Environmental Legacy funds (Figure 55). This funding structure is similar to the successful Polk County program. Polk County reported that most of its "other" funds are grants.

Figure 55. Sources of natural resource management budgets for the County and similar agencies.

Lessons learned from the benchmarking study are:
- Well-established natural resource management systems have invested significant resources at an initial high cost per acre over decades to restore degraded areas. Success comes from continuing to invest significant funds to maintain these areas.
- The significant increase in Dakota County’s natural resource budget since 2013 allowed the County to match programs in most benchmark counties and move towards the higher achievements of the larger agencies.
- Recent and expected grant funds (currently $2.5 million) significantly increased available County resources and accelerated natural resource management. Adequate County resources are necessary to secure and administer grants and to direct the restoration and maintenance of areas recently brought under management.
- Volunteers can benefit the program, but their involvement should be strategic and will require County investment and County staff involvement.
- The County’s regional greenway system is the most extensive among the benchmarked agencies.
- The County’s conservation easements on private land is unique in scope and diversity among all of the benchmark agencies.

Results of the benchmarking study characterize the County’s natural lands and management practices as comparable to earlier stages of development for the most mature programs, but at a good stage considering its relatively recent start and the financial disruption of the 2008 Great Recession. As in other programs, higher initial per acre costs for restoration will be needed, but after a few to several years the per-acre maintenance costs will be significantly less.
Appendix M. Benchmarking Study Survey

Dakota County NRMSMP Benchmarking – Survey Questions

1. What are the total acres of parks and protected lands in your agency?

2. What are the numbers of parks (and protected lands)?

3. What are the acres of undeveloped and natural land? (Percentage/estimate is okay. Alternatively, provide the acres of campgrounds and developed facilities so we can extract the number.)

4. How many acres of undeveloped/natural acres are managed for natural resource quality (e.g., monitoring, controlling invasives, prescribed burns)? (Percentage/estimate is okay).

5. How many acres of the following land cover types are natural/undeveloped?
   (If other land cover classifications are available, please provide these with the acres so AES can convert to the classifications below.)
   a. Wooded Lands:
   b. Non-native Grassland:
   c. Native or Planted Prairie:
   d. Lakes and Ponds:
   e. Non-forested Wetlands:

6. What was the agency’s total budget for natural resources management efforts (including restoration)?
   a. 2015:
   b. 2014:
   c. 2013:

7. What are the percentages within natural resources management budget for the following categories? (If this takes time to extract, AES can extract number if link/file to a publicly available natural resource budget is provided.)
   a. FTE staff %:
   b. Contracts %:
   c. Temporary staff %:
   d. Equipment %:
   e. Other %:

8. What are the resource management budget sources 2014?
   a. Levy %:
   b. Grants %:
   c. Earned revenues %:
   d. Other %:

9. Staffing: How many Fulltime Equivalent Staff is employed in resource management efforts? (This includes all staff permanently hired by the agency to work with natural resources in the office and field.)
10. Volunteers (fill in table below):
   a. Does the agency have an active volunteer program? (Y/N):
   b. How many volunteer hours and volunteers has the agency used in the three most recent years?
   c. How many staff hours were used to coordinate volunteers (2013, 2014, 2015)?

<table>
<thead>
<tr>
<th></th>
<th>2013</th>
<th>2014</th>
<th>2015</th>
</tr>
</thead>
<tbody>
<tr>
<td>Volunteer hours</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Number of volunteers</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Staff hours</td>
<td></td>
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<td></td>
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</tbody>
</table>

11. Does your agency have natural resources management plans (Y/N)?
   a. If yes, please attach the file or provide link to this report (if available for the public).

12. Does your agency use partnerships to manage natural resources (Y/N)? (If this is project specific, please list the most common partnership)

| Partner: | Type of Partnership: |

13. Privately Owned Lands
   a. Does your agency have a conservation program to protect natural resources on privately owned lands? (Y/N):
   b. Does your agency provide technical assistance and/or financial support for natural resources management efforts? (Y/N):
   c. Please describe briefly:

Thank you!

If you have any questions about the survey, please call or email:

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Doug Mensing  
Project Manager, Senior Ecologist  
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