



Strategic Framework for Recommendations

*Statewide Conservation And Preservation Plan
Final Plan • • June 30, 2008*

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STRATEGIC FRAMEWORK FOR RECOMMENDATIONS

This document presents an integrated strategic framework (Figure 5) for a Minnesota Statewide Conservation and Preservation Plan (SCPP), which consists of a series of recommendations for the state to consider in holistic fashion. The recommendations are designed to conserve and protect Minnesota's natural resources in a comprehensive approach, while being mindful of demographic change, public health, the state's economy, and climate change. The final plan was constructed by identifying **drivers of change** affecting natural resources, assessing the **impacts** of these drivers, and mapping the impacts to **key issues**. The seven key issues identified in the preliminary plan are those that, when addressed, would have the largest and most beneficial impacts on multiple resources. The preliminary plan contains the details of the drivers of change, the assessment of impacts, and the key issues. The **recommendations** in this final plan were developed to address a selection of these key issues, which were then further assessed for their **integrated impact** across all natural resource values. This allowed us to place the recommendations in a framework having **five main strategic areas**, with **recommendations for action or policy change** being placed within these areas. We also have identified recommendations for expanding our **knowledge infrastructure**. By this we mean actions or activities, including research, monitoring, data collection, and education, that will enhance our knowledge and support the recommendations for action or policy change.

Figure 6 shows the **action or policy change recommendations** for each of the final plan key issues, arranged according to the degree of integrated benefits across all the natural resource values. This gives an overall snapshot of how much integrated value a given recommendation provides. For example, the first recommendation under the key issue of Habitat

Loss has significant impact across the majority of the resource values, and has little impact on air quality and human health. This figure also identifies which recommendations benefit a given resource value the most. For example, the Habitat recommendations have the most impact on biodiversity.

The strategic framework is shown in Figure 5. The five strategic areas are identified at the top of the five boxes, and the recommendations are listed within the boxes. The action or policy change recommendations are at the top, with the recommendations having the broadest impact across multiple resources listed first, followed by those that are more targeted or specific in their scope. Recommendations for building the knowledge infrastructure for that strategic area are at the bottom of the box. These are ordered according to the key issue they address.

This framework is a comprehensive and integrated environmental strategic plan. The recommendations taken together provide a holistic look, and are not meant to be viewed in isolation or to be acted on in a piecemeal fashion. Each of the strategic areas is discussed below.

Integrated Planning

Natural resource management is interwoven within a larger fabric of economic health, complex regulatory frameworks, human health, and changing demographics and climate. No one agency can address this comprehensively, nor can it be done in individual agency stovepipes. In addition, there are multijurisdictional responsibilities on the geographic scale, from communities, to small units of government, to soil and watershed districts, to statewide agencies.

Planning, whether for transportation, energy, community development, water resources, agriculture, or forestry, should be integrated across all agencies and across the multijurisdictional scale. Doing so can make planning more efficient by removing redundancies. Our strongest, most effective federal environmental laws require cross-agency review or partnership, and this approach should be embraced on the state level for holistic natural resource protection.

Critical Land Protection

Be it farmland, wetlands, greenways in urban areas, or forestland, a clear and comprehensive strategy must be developed that establishes long-term and short-term acquisition priorities. An array of perspectives should inform this strategy, integrating needs for biodiversity protection, critical agricultural land protection, ecological services, recreational opportunities, and opportunities for climate change adaptation and/or mitigation.

This strategy should build on the excellent work already accomplished by state agencies, local governments, and the work of nonprofit land conservation organizations, among others.

Land and Water Restoration and Protection

This strategic area addresses both the restoration of critical land and water habitat and the protection of strategic land and water habitat that has not yet been degraded. It not only addresses the inherent and intrinsic direct benefits of habitat restoration and protection, but also emphasizes the benefits of such strategy for strengthening biodiversity and enhancing resilience to climate change. The recommendations in this area reinforce and strengthen Minnesota's cultural values, ethics, appreciation of outdoor recreation, and economic health.

Sustainable Practices

A healthy environment requires a healthy economy, and a sustainable economy requires a sustainable environment. To reach both goals, we must promote, facilitate, encourage, and regulate appropriate practices that will lead to a sustainable environment and economy. These sustainable practices must cross multiple fronts—sustainable agriculture, sustainable land use planning, sustainable forestry, sustainable water resources, and sustainable economy and standard of living—all in the context of energy production, shifting demographics, and climate change.

Economic Incentives for Sustainability

Moving toward sustainable practice requires specific incentives to move the state and its citizens and stakeholders in a transformative direction. Broad-scale ideas exist for achieving a sustainable economy through natural resource policy: Specific natural resource policy, energy policy, agricultural policy, forestry policy, and transportation policy can be used to grow and nurture Minnesota's economic future.

Section 4 contains detailed descriptions of the recommendations assessed and placed in the strategic framework.

Knowledge Infrastructure

Additional research, monitoring, data collection, and education will be necessary to support the action and policy recommendations for integrated planning, critical land protection, land and water restoration and protection, sustainable practices and economic incentives for sustainability. With continual improvement in our knowledge infrastructure, action and policy will become more effective and precise over time.

Strategic Framework For Integrated Resource

| INTEGRATED PLANNING IP | | CRITICAL LAND PROTECTION LP | | LAND AND WATER RESTORATION AND PROTECTION RP | |
|--|---|---|--|--|--|
| Rec. No. | Broad Policy and Action Recommendations | Rec. No. | Broad Policy and Action Recommendations | Rec. No. | Broad Policy and Action Recommendations |
| E1 | Develop coordinated laws, policies and procedures across state agencies | H2 | Protect critical shorelands of streams and lakes | H4 | Restore and protect shallow lakes |
| LU1 | Fund and implement a state Land Use Development and Investment Guide | H1 | Protect priority land habitats | H5 | Restore land, wetlands, and wetland-associated watersheds |
| LU2 | Support local and regional conservation-based community planning | LU8 | Protect large blocks of forest land | H6 | Protect and restore critical in-water habitat of lakes and streams |
| T1 | Align transportation planning across all agencies; streamline and integrate environmental transportation project review | | | | |
| E23 | Develop mercury reduction strategies for out-of-state sources | | | | |
| Rec. No. | Targeted Policy and Action Recommendations | Rec. No. | Targeted Policy and Action Recommendations | Rec. No. | Targeted Policy and Action Recommendations |
| LU3 | Ensure protection of water resources in urban areas | E2 | Invest in farm and forest preservation to prevent fragmentation due to development | LU5 | Reduce streambank erosion through reduction in peak flows |
| T3 | Develop and implement transportation polices that minimize impacts on natural resources | H3 | Improve connectivity and access to recreation | LU6 | Reduce upland and gully erosion through soil conservation practices |
| | | | | | |
| | | | | | |
| Rec. No. | Knowledge Infrastructure Recommendations | Rec. No. | Knowledge Infrastructure Recommendations | Rec. No. | Knowledge Infrastructure Recommendations |
| LU2C | Provide communities with the tools and technical assistance for conservation-based planning | H9 | Invest in overall research on land and aquatic habitats | H10 | Invest in research on near-shore aquatic habitat vulnerability |
| E24 | Continue state enforcement programs to reduce mercury contamination of the environment | T3A | Develop research programs in habitat fragmentation | H11 | Improve understanding of groundwater resources |
| LU3B | Simplify modeling for TMDLs | LU9 | Assess tools for forest land protection | LU5A | Invest in research that quantifies the relationship between artificial drainage and stream flows |
| LU3C | Monitor TMDL BMP implementation | | | H12 | Improve understanding of watershed responses to multiple drivers of change |
| LU2D | Invest in databases and tools needed to support land use and conservation decisions | | | E11 | Invest in research and enact policies to protect existing prairies from genetic contamination |
| LU2A | Fund demonstration projects for conservation-based community planning | | | LU10E | Develop and test new management policies to test ecosystem resilience |
| | | | | H13 | Encourage conservation education and training programs for all MN citizens |
| | | | | E12 | Invest in efforts to develop sufficient seed stocks for large scale plantings of perennial crops |
| | | | | LU3D | Expand water quality media campaign |

Figure 5. Strategic framework for integrated resource conservation and preservation

Conservation And Preservation

| SUSTAINABLE PRACTICES  | | ECONOMIC INCENTIVES FOR SUSTAINABILITY  | | | |
|---|--|--|---|----------|--|
| Rec. No. | Broad Policy and Action Recommendations | | | | |
| LU10 | Support and expand sustainable practices on working forested lands | | | | |
| H7 | Keep water on the landscape | | | | |
| H8 | Review and analyze drainage policy (ditch laws) | | | | |
| T2 | Reduce per capita vehicle miles of travel | | | | |
| | | | | | |
| Rec. No. | Targeted Policy and Action Recommendations | Rec. No. | Targeted Policy and Action Recommendations | Rec. No. | Targeted Policy and Action Recommendations |
| E13 | Invest in research and policies for "green payment" program | E19 | Promote policies and strategies to implement smart meter and smart grid technologies | E16 | Provide incentives to transition a portion of Minnesota's vehicle fleet to electrical power and renewable electricity production |
| E17 | Promote policies and incentives that encourage C-neutral businesses, homes, communities, and other institutions | E20 | Develop incentives to encourage widespread adoption of passive solar and shallow geothermal heat pumps in new construction | E21 | Develop standards and incentives for energy capture from municipal sanitary and solid waste, and minimize landfill options |
| LU4/E4 | Transition renewable fuel feedstocks to perennial crops | E15 | Invest in efforts to develop community-based energy platforms | E14 | Investigate opportunities to provide tax incentives for individual renewable energy investors |
| E18 | Implement policies and incentives to lower energy use of housing stock | | | | |
| Rec. No. | Knowledge Infrastructure Recommendations | Rec. No. | Knowledge Infrastructure Recommendations | Rec. No. | Knowledge Infrastructure Recommendations |
| E3 | Invest in perennial biofuel crop research and demonstration projects on a landscape scale | E22 | Invest in public education focusing on benefits and strategies for energy conservation | | |
| E6 | Invest in research to determine removal rates of corn stover and to establish incentives and BMPs | E25 | Develop public education on actions that individuals and communities can take to reduce mercury contamination of the environment | | |
| E7 | Invest in research to review thermal flow maps | LU7 | Invest in statewide high resolution digital elevation data, watershed delineation, maps of artificial drainage network, and other data to support decision making | | |
| E8 | Invest in applied research to reduce energy and water consumption and emissions in ethanol plants | LU10B | Educate landowners and forest managers on BMPs to protect working forests | | |
| E9 | Invest in research to determine the life cycle impacts of renewable energy production systems | | | | |
| E10 | Invest in research and demonstration projects to develop, and incentives to promote, combination electricity production projects | | | | |
| T3B | Reduce non-point source pollution to surface and ground waters from transportation infrastructure | | | | |
| LU4A | Invest in research on parameters that control successful perennial feedstocks | | | | |
| E5 | Invest in data collection to support energy production assessment | | | | |

Note: Recommendations having the broadest impact across multiple resources are listed first in each column followed by those having more targeted impact, and supported by knowledge infrastructure recommendations.

Figure 6. Natural resource values assessment of recommendations

Natural Resource Values Assessment of Recommendations

| | | Air Quality | Water Quality/Quantity | Habitat Quality | Terrestrial Land Quality | Soil/Land Quality | Human Health | Biodiversity | Community Health | Aquatic Health | Economic Health | Spiritual/Cultural/Aesthetic Value | Recreational/Cultural | Climate Change Mitigation/Adaptation |
|-----------------------|--------|-------------|------------------------|-----------------|--------------------------|-------------------|--------------|--------------|------------------|----------------|-----------------|------------------------------------|-----------------------|--------------------------------------|
| HABITAT | H2 | ○ | ○ | ● | ● | ● | ● | ○ | ● | ● | ● | ● | ● | ● |
| | H1 | ○ | ○ | ● | ● | ● | ● | ○ | ● | ● | ● | ● | ● | ● |
| | H4 | ○ | ○ | ● | ● | ● | ● | ○ | ● | ● | ● | ● | ● | ● |
| | H5 | ○ | ○ | ● | ● | ● | ● | ○ | ● | ● | ● | ● | ● | ● |
| | H6 | ○ | ○ | ● | ● | ● | ● | ○ | ● | ● | ● | ● | ● | ● |
| | H7 | ○ | ○ | ● | ● | ● | ● | ○ | ● | ● | ● | ● | ● | ● |
| | H8 | ○ | ○ | ● | ● | ● | ● | ○ | ● | ● | ● | ● | ● | ● |
| | H3 | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| LAND USE | LU1 | ○ | ○ | ● | ● | ● | ● | ○ | ● | ● | ● | ● | ● | ● |
| | LU2 | ○ | ○ | ● | ● | ● | ● | ○ | ● | ● | ● | ● | ● | ● |
| | LU3 | ○ | ○ | ● | ● | ● | ● | ○ | ● | ● | ● | ● | ● | ● |
| | LU4/E4 | ○ | ○ | ● | ● | ● | ● | ○ | ● | ● | ● | ● | ● | ● |
| | LU5 | ○ | ○ | ● | ● | ● | ● | ○ | ● | ● | ● | ● | ● | ● |
| | LU6 | ○ | ○ | ● | ● | ● | ● | ○ | ● | ● | ● | ● | ● | ● |
| | LU8 | ○ | ○ | ● | ● | ● | ● | ○ | ● | ● | ● | ● | ● | ● |
| | LU10 | ○ | ○ | ● | ● | ● | ● | ○ | ● | ● | ● | ● | ● | ● |
| | T1 | ● | ● | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| | T2 | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| TRANSPORTATION | T3 | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| | E1 | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| | E13 | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| | E17 | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| | E2 | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| | E18 | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| ENERGY | E16 | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| | E21 | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| | E19 | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| | E14 | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| | E20 | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| | E15 | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| | E15 | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |

Note: Policy and action recommendations are grouped by topic (Habitat, Land Use, etc.) and then ordered starting with those recommendation having the broadest impact across multiple resource values followed by those having more targeted impact.