

1 **Statewide Conservation and Preservation Plan Recommendations**
2 **LCCMR Discussion of Ideas to Consider for 2009 RFP-Phase 2**

3
4 **Habitat 1 - Protect Priority Land Habitats (pg. 57)**

- 5 • Phase 1 of the RFP includes a lot of acquisition potential
6 • Prioritize land habitat protection in regions of the state: Analyze for prioritizing investment tiers of
7 protection tools.
8 - Tier 1 - Acquisition, permanent easements;
9 - Tier 2 - Conservation incentives, e.g. CRP, CREP, RIM,
10 - Tier 3 - BMPS , landowner agreements for large ecosystem habitats
11 - Tier 4 - Targeted Education program.
12 • Mapping analysis – link corridor mapping and other mapping initiatives with the Statewide Plan to
13 prioritize protection efforts and refine protection corridors
14 • Look at various regions of the state and the potential differences of impacts of climate changes.
15 Research, develop and implement strategies to preserve specific resource areas, e.g. peatlands,
16 white pines, etc.

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18 **Habitat 2 - Protect Critical Shorelands of Streams and Lakes (pg. 63)**

- 19 • Focus on high quality habitats, especially shoreland
20 • Look to SPCP mapping to help identify lands to acquire and preserve
21 • Analyze/pilot property tax classification for conservation
22 • Promote riparian buffers
23 • Provide funding to local communities for planning and implementing habitat projects
24 • Research and pilot efforts to adjust tax policy to benefit natural resources and the environment

25
26 **Habitat 3 - Improve Connectivity and Access to Outdoor Recreation (pg. 70)**

- 27 • Local community planning to identify connectivity and access to outdoor recreation in greater
28 Minnesota for land protection connections, recreational access and wildlife benefits. (State
29 parks/trails, metro regional parks, non-metro regional parks and SNA's were requested to submit
30 proposals for Phase 1 of RFP.

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32 **Habitat 4 - Restore and Protect Shallow Lakes (pg. 72)**

- 33 • Shallow lakes: Phase I: shallow lake work to do more upstream protection and evaluation and
34 monitoring to help maintain and improve water quality. Continue with HCP corridor work. Do not
35 seek individual shallow lake proposals. (The HCP project was requested to submit a proposal in
36 Phase 1 of RFP – previous phase of HCP included some shallow lake restoration by DNR and Ducks
37 Unlimited – instruction to be given to include more in their Phase 1 proposal)
38 • Pilot an effort to pretreat runoff to shallow lakes
39 • How is climate change going to affect shallow lakes?

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41 **Habitat 5 - Restore Land, Wetlands, and Wetland-Associated Watersheds (pg. 74)**

- 42 • Lots of current funding, \$25 million state bonding plus federal match
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44 **Habitat 6 - Protect and Restore Critical In-Water Habitat of Lakes and Streams (pg. 76)**

- 45 • Restore and monitor warm water streams and rivers
46 • Research impacts of built structures (including docks) on lakes and streams and impacts on habitat
47 • Manage uplands land use practices to better protect deep lakes (deep lakes are lakes that can
48 maintain cold enough water to support cold water aquatic communities)

- 49 • Evaluate the multiple drivers of change on watersheds through monitoring, research and evaluation of
50 land use, climate, invasive species impacts.
51 • Lakescaping funding (note in HCP Corridors Phase 1 RFP)
52

53 **Habitat 7 - Keep Water on the Landscape (pg. 79)**

- 54 • Sink holes features; continue to update databases and maps on sink holes; look at having buffers
55 around sink holes to prevent pollution from entering them and the associated ground water
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57 **Habitat 8 - Review and Analyze Drainage Policy (pg. 81)**

- 58 • Review after Waseca: talk to BWSR about drainage research and other states drainage laws
59 • Review and Analyze drainage policy: Seek proposal from legal experts to evaluate drainage laws
60 and their economics for potential updating
61 • Check with NCSL to see how drainage laws work in other states
62

63 **Habitat 9 - Overall Research on Land and Aquatic Habitats (pg. 82)**

- 64 • Evaluate how much aquatic habitat we want and/or need. Some habitats are very limited e.g. white
65 pine, prairie, wetlands
66 • Get a better understanding of how much we have and the threats - a comparable effort to upland
67 habitat inventory and assessment (like the SGCN Species of Greatest Conservation Need report)
68 • Landscape analysis coupled with appropriate modeling efforts are needed to identify what critical land
69 and wetland resources need to be maintained or restored to adequately protect water quality and
70 aquatic biota
71 • Research on trade-offs in the use of land and water for agriculture, energy, forestry, housing, industry
72 and transportation need to be studied critically and equally with societal benefits for carbon
73 sequestration, protection of biological diversity and outdoor recreation - e.g. intensive use of "working
74 lands" utilization for human purposes before there is a significant loss of benefits to wildlife, water
75 quality and/or recreational opportunities?
76

77 **Habitat 10 - Research on Near-Shore Habitat Vulnerability (pg. 84)**

- 78 • Map aquatic species richness similar to the mapping of terrestrial species in the DNR "Species of
79 Greatest Conservation Need" showing level of species richness with GAP analysis (an assessment of
80 the status of native wildlife based on natural land cover types).
81 • The transition zone between land and water is important - some mapping efforts might be helpful
82

83 **Habitat 11 - Improve Understanding of Ground Water Resources (pg. 85)**

- 84 • The Phase 1 of RFP included requests from ground water related proposals (Geologic Atlases,
85 groundwater monitoring, Water Resource Sustainability, and Future of Energy and Minnesota's Water
86 Resources)
87 • Interaction of ground and surface waters: Investigate seasonally variable streams flows needed by
88 aquatic communities and assess ground water contributions.
89

90 **Habitat 12 - Improve Understanding of Watersheds to Multiple Drivers of Change (pg. 87)**

- 91 • Knowledge in decision making and management: Research and evaluate the cumulative impacts of
92 chemical applications on aquatic communities due to land and water treatments.
93

94 **Habitat 13 - Habitat and Landscape Conservation Education and Training Programs for All Citizens**
95 **(pg. 89)**

- 96 • Expand Minnesota Master Naturalist Program or create similar program to address other natural
97 resource issues
98 • More train the trainers programs (e.g. U of MN extension)
99 • Develop curriculum for teachers on shoreland management and water quality

- 100
101 **Land Use - Community 1 - Fund and Implement a State Land Use, Development and Investment Guide**
102 **(pg. 97)**
103 No comments
104
- 105 **Land Use - Community 2 - Support local and regional conservation based community planning (pg.**
106 **101)**
- 107 • Local community planning to identify connectivity and access to outdoor recreation in greater
 - 108 Minnesota for land protection connections, recreational access and wildlife benefits.
 - 109 • Redevelopment: Technical Assistance for Conservation based Community Redevelopment
 - 110 • Enhance or expand current grant programs to incorporate conservation based planning, design, and
 - 111 implementation
 - 112 • Redevelopment should take energy conservation and renewables into consideration.
 - 113
- 114 **Land Use - Community 3 - Ensure protection of water resources in urban areas by evaluating and**
115 **improving current programs (pg. 106)**
116 No comments
117
- 118 **Land Use – Agriculture 1 - As much as possible, transition renewable fuel feedstocks to perennial**
119 **crops (pg. 119)**
120 No comments
121
- 122 **Land Use – Agriculture 2 - Reduce streambank erosion through reductions in peak flows (pg. 121)**
- 123 • Reduce Streambank Erosion through reductions in peak flows
 - 124 • Research to determine the quantitative relationship among trends in precipitation, artificial drainage
 - 125 systems, and stream hydrology
 - 126 • Research for peak flow reduction goals
 - 127 • Implement programs for peak flow reductions
 - 128 • Investigate, analyze and adopt science-based policy that strengthen mitigation of peak flows from
 - 129 artificial drainage systems
 - 130 • Revisit above after the Waseca site visit
 - 131
- 132 **Land Use – Agriculture 3 - Reduce upland and gully erosion through soil conservation practices (pg.**
133 **124)**
134 No comments
135
- 136 **Land Use – Agriculture 4 - Enable improved design and targeting of conservation through improved**
137 **and timely data collection and distribution (pg. 126)**
- 138 • Data Collection and Distribution to improve planning, design and implementation of conservation
 - 139 priorities
 - 140 • Update Statewide Land Cover Database and Remote sensing capabilities
 - 141 • LIDAR
 - 142 • Loss of CRP lands - BWSR with partners to identify CRP lands most important for wetlands and
 - 143 habitat. A model to target the acres?
 - 144 Buffer areas: Riparian, sinkholes and uplands
 - 145 Land use and climate change - ?EQB discussion
 - 146
- 147 **Land Use – Forest 1 - Protect large blocks of forested land (pg. 130)**
148 • Already in Phase I: Forest Conservation Easements

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150 **Land Use – Forest 2 - Assess tools for forest land protection (pg. 131)**
151 No comments
152
153 **Land Use – Forest 3 - Support and expand sustainable practices on working forested lands (pg. 132)**
154 No comments
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156 **Transportation 1 - Align transportation planning across state agencies and integrate transportation**
157 **project development and review across state, regional, metropolitan and county/local transportation,**
158 **land use and conservation programs (pg. 142)**
159 No comments
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161 **Transportation 2 - Reduce per capita vehicle miles of travel (VMT) , through compact mixed-use**
162 **development and multi- and intermodal transportation systems (pg. 152)**
163 No comments
164
165 **Transportation 3 - Develop and implement sustainable transportation research, design, planning,**
166 **construction practices, regulations, and competitive incentive funding that minimize impacts on**
167 **natural resources, especially habitat fragmentation and nonpoint source water pollution (pg. 154)**
168 No comments
169
170 *****Energy 1: Develop coordinated laws, policies, and procedures for governmental entities to assess**
171 **renewable energy production impacts on the environment.**
172 • Plan for how to go to more renewable energy sources; 100% renewable energy for electricity in 10
173 years in MN
174
175 **Energy 2: Invest in farm and forest preservation efforts to prevent fragmentation due to development**
176 **guided by productivity and environmental vulnerability research.**
177 No comments
178
179 *****Energy 3: Invest in perennial biofuel and energy crop research and demonstration projects on a**
180 **landscape scale.**
181 • Do this as a subset of Energy 9
182 • Research and demonstration projects that evaluate multiple benefits and impacts of increased yields,
183 including understanding; develop BMPs; determine growing conditions best suited; study costs,
184 benefits, and barriers and develop relevant strategies as result; evaluate biomass resource
185 availability and sustainable production rates
186 • Projects relating to working lands initiatives
187
188 *****Energy 4: Develop policies and incentives to encourage perennial crop production for biofuels in**
189 **critical environmental areas.**
190 • Additional mapping of CRP lands to target most important vulnerable lands for keeping in CRP;
191 prioritize what is best return on investment
192
193 *****Energy 5: Invest in data collection to support the assessment process**
194 • Comparison of renewable energies (e.g. solar) to determine what is most cost effective mix for
195 transportation fuels and electricity generation
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197 **Energy 6: Invest in research to determine sustainable removal rates of corn stover and to establish**
198 **incentives and Best Management Practices (BMPs)**
199 No comments

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*****Energy 7: Invest in research to review thermal flow maps for Minnesota**

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- Need maps of geothermal potential for MN that show thermal calculations and measurements; Map for both shallow (*low grade*) and deep (*high grade*) well potentials
- Perhaps add to geologic atlases and soil surveys as additional layer
- Measure and evaluate pilot projects for geothermal; for example, in NE Minnesota where some possible candidate sites already identified or where existing mining/drilling already occurring

Energy 8: Invest in applied research to reduce energy and water consumption and greenhouse gas emissions in present and future ethanol plants, and enact policies to encourage implementation of these conservation technologies.

MEETING NOTES/DISCUSSION

- Using wastewater after treatment in ethanol production
- Look at both corn and various biomass alternatives to corn
- Gasification may be promising alternative to follow, particularly if helps reduce water use
- Different ethanol plants need to share more info between themselves; may need policy and regulation to help sharing process
- What are other state's doing (e.g. ethanol studies at Iowa)?

*****Energy 9: Invest in research to determine the life cycle impacts of renewable energy production systems.**

- Energy 3 should be seen as a subset of Energy 9
- Research on over-arching climate change and life-cycle costs, including impacts on economy, GHG emissions, water consumption, water quality, carbon sequestration, gene flow risks, wildlife populations, native pollinators, and transportation sector.
- Need to evaluate both individual crops and systems in terms of multiple benefits (e.g. yield, carbon reduction)

Energy 10: Invest in research and demonstration projects to develop, and incentives to promote, combined with wind power/biomass, wind power/natural gas, and biomass/coal co-firing electricity projects.

MEETING NOTES/DISCUSSION

- Evaluate potential for electricity through pump-stored hydro-power in mines
- Re-visit at a later date once there is more information
- Next Gen Board – staff needs to get updates on the status of their process and suggest they review the SPCP recommendations

Energy 11: Invest in research and enact policies to protect existing native prairies from genetic contamination by buffering them with neighboring plantings of perennial energy crops

MEETING NOTES/DISCUSSION

- Legislation and LCCMR funding this past session started down this path.

Energy 12: Invest in efforts to develop sufficient seed or seedling stocks for large-scale plantings of native prairie grasses and other perennial crops.

MEETING NOTES/DISCUSSION

- Legislation and LCCMR funding this past session started down this path.

Energy 13: Invest in research and policies regarding "green payments"

No comments

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251 **Energy 14: Investigate opportunities to provide tax incentives for individual investors in renewable**

252 **energy (e.g. individuals who wish to install solar panels)**

253 No comments

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255 **Energy 15: Invest in efforts to develop, and research to support, community-based energy platforms**

256 **for producing electricity, transportation fuels, fertilizer, and other products that are**

257 **locally/cooperatively owned**

258 No comments

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260 **Energy 16: Provide incentives to transition a portion of Minnesota's vehicle fleet to electrical power,**

261 **while simultaneously increasing renewable electricity production for transportation**

262 No comments

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264 **Energy 17: Promote policies and incentives that encourage carbon-neutral businesses, homes,**

265 **communities, and other institutions**

266 No comments

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268 *****Energy 18: Implement policies and incentives to lower energy use of housing stock while**

269 **monitoring the performance of improvements and calling on the utility industry to join in the effort**

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- 271 • Request proposals on innovative ways to help homeowners with residential energy conservation. For
- 272 example, a program through public or private utilities offering no interest loans with easy payback via
- 273 energy savings paid over time in utility billing.
- 274 • Important to include redevelopment – energy reduction in existing housing – not just new stock. For
- 275 example, when upgrading, there could be energy upgrade requirements, such as with septic tank
- 276 upgrades and with meeting requirements for FHA loans.

277 **MEETING NOTES/DISCUSSION**

- 278 ○ May need legislation
- 279 ○ Some utilities and states are already doing this.
- 280 ○ Target homeowners because potential gains; i.e., the largest potential gainers through
- 281 efficiency improvements are thought to be heavy industry in China (#1) and American homes
- 282 (#2).

283 *****Energy 19: Promote policies and strategies to implement smart meter and smart grid technologies**

- 284 • Develop strategies to implement smart grid/smart meter technologies

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286 **Energy 20: Develop incentives to encourage the widespread adoption of passive solar and shallow**

287 **geothermal heat pump systems in new residential and commercial building construction. Invest in**

288 **research to develop improved technology for storing renewable energy.**

289 No comments

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291 **Energy 21: Develop standards and incentives for energy capture from municipal sanitary and solid**

292 **waste, and minimize landfill options for MSW**

293 No comments

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295 **Energy 22: Invest in public education focusing on benefits and strategies for energy conservation**

296 **targeted toward individual Minnesota residents and businesses**

297 No comments

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299 **OTHER**

300 **Invasive Species: [M.L. 2008, Chp. 367, Sec. 2, Subd. 16 – “2009 Recommendations”]** In 2008, the
301 **Legislative-Citizen Commission on Minnesota Resources shall consider requesting proposals for**
302 **biological control or other innovative control methods of aquatic and terrestrial invasive species.**

- 303 • Evaluate new and existing technologies to prevent introductions of invasive species new to the State,
304 e.g. innovative ballast water management technology, technology for barriers in waterways, or
305 alternatives to linking watersheds for invasive fish, invertebrates and q aquatic plants. [prevention
306 technologies]
- 307 • Develop technological standards for evaluating prevention technologies. [prevention technologies]
- 308 • Enhance detection technologies for potentially invasive species not yet in Minnesota. [prevention
309 technologies]
- 310 • Evaluate and improve spread models for high risk invasive species to improve predictions of when
311 the species will arrive in Minnesota. [prevention technologies]
- 312 • Improve, validate, and evaluate models that identify the locations in MN at the highest risk of
313 colonization and establishment of high risk invasive species. [prevention technologies]
- 314 • Develop system scale approaches that enable management beyond focusing on the individual
315 species, e.g. develop indicators of landscape of habitat resilience to suites of invasive species.
316 [prevention technologies]
- 317 • Develop new technologies for cost effective integrated management of invasive species.
- 318 • Assess invasive species management program across species to assess and improve the restoration
319 potential. [prevention technologies]
- 320 • Assessment of Lakes & Treatments – assess how various aquatic invasive treatments impact the
321 varying lake types. [prevention technologies]
- 322 • Presence of various invasive species: What is a systemic way for management of these multiple
323 invasives? [Terrestrial]

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