

MN AFW TWG Policy Option Balloting Results

AFW Policy Option #	Suggested Policy Option Name	AFW Catalog Option No.	AFW Catalog GHG Reduction Policy Option	Number of Ballots Identifying Option as Priority	Additional Notes for Balloting
AFW-1	Agricultural Crop Management	3.1 3.2 5.2	Soil Carbon Management Nutrient Management Promotion of Farming Practices that Achieve GHG Benefits	14 4 3	<p>Notes on 3.1:</p> <p>4 - A catch-all in some ways, this is THE critical aspect for crop farming and GHG and I see many of the other sub-categories (5.2; 2.3; 3.4; etc.) that fall under this category. Most importantly, I see “perennial herbaceous cover” (4.1) as the primary way to move this forward, and as this is a new approach to agricultural land planning, it should remain separate, if linked, to 3.1.</p> <p>5 - Especially use of perennials and cover crops, and restoration of peaty soils</p> <p>8 - Emphasize increasing use of cover crops and replacement of annuals with perennials.</p> <p>9 - Management outcomes should be used with indices rather than practice-based approaches. Energy consumption indices, nutrient indices – all related to carbon can be created.</p> <p>10 - This should be a flexible outcome based measure to give farmers the ability to use various management methods and practices.</p>

AFW Policy Option #	Suggested Policy Option Name	AFW Catalog Option No.	AFW Catalog GHG Reduction Policy Option	Number of Ballots Identifying Option as Priority	Additional Notes for Balloting
					<p>15 - Combine with 4.1</p> <p>16 - Could be coupled with 3.2</p> <p>Notes on 3.2: 5 - IPCC prioritizes N2O management, important WQ benefits.</p> <p>16 - Could be coupled with 3.1.</p> <p>Notes on 2.1.1: 4 - Obviously important, especially in assuring our current manure is used in the most appropriate, nutrient-based sectors and is treated as a resource, not a waste product.</p> <p>14 - combine with 1.3 & 2.1.2 change name to Manure management and energy utilization. (In 2005 this area accounts for over 3.41 MMtCO2e).</p> <p>15 - Combine with 3.2.</p> <p>Notes on 5.3: 4 - I'm supporting this broad category as it is the other main area – after soil carbon management – that agriculture can do to reduce ghg emissions. I'm particularly supportive of the organic practices, as studies are showing that it builds more soil</p>

AFW Policy Option #	Suggested Policy Option Name	AFW Catalog Option No.	AFW Catalog GHG Reduction Policy Option	Number of Ballots Identifying Option as Priority	Additional Notes for Balloting
					<p>organic matter than conventional and no-till practices.</p> <p>5 - Overarching sectoral concept that could incorporate different options as they are proved out. Here, as elsewhere, need to recommend strong R&D component.</p> <p>9 - Important effort, but only if 'practices' is changed to 'systems'. Using 'practices' subsequently creates a process that is rather inflexible and extremely cumbersome for all participants – farmers to traders to end users.</p>
AFW-2	Forestry Management Programs to Enhance GHG Benefits	<p>7.3</p> <p>7.2</p> <p>7.4</p> <p>7.5</p> <p>7.6</p>	<p>Afforestation and/or Restoration of Nonforested Lands</p> <p>Urban Forestry</p> <p>Forest Management for Carbon Sequestration</p> <p>Mitigation of Forest Carbon Sequestration Loss and Emissions Due to Wildfire</p> <p>Mitigation of Forest Loss Due</p>	<p>14</p> <p>5</p> <p>4</p> <p>4</p> <p>3</p>	<p>Notes on 7.3:</p> <p>4 - Reforestation should be the priority, not afforestation, which is more difficult to introduce in an agricultural state and can lead to conflicts with agricultural and wildlife interests.</p> <p>8 - Change title to "Reforestation of Nonforested Lands." Reforestation of some of the 15 million acres of formerly forested lands (pre-mid- to late 1800s) should be the priority, not afforestation, which often leads to conflicts with agricultural and wildlife interests. Many co-benefits in terms of continued timber production, public recreational access, water quality, wildlife habitat, biodiversity. Many other funding</p>

AFW Policy Option #	Suggested Policy Option Name	AFW Catalog Option No.	AFW Catalog GHG Reduction Policy Option	Number of Ballots Identifying Option as Priority	Additional Notes for Balloting
			to Insects/Disease		<p>sources to lower costs per ton sequestered.</p> <p>9 - Reforestation in proper ecosystems rather than ie-prairie.</p> <p>10 - This should be re-titled to Restoration of Formerly Forested lands. We should not plant trees on what was prairie (plant prairie on what was prairie). This is the “make more” term in the forest equation.</p> <p>14 - Combine with 7.4 & 7.5 & 7.6 all similar under on area.</p> <p>16 - Change heading to "Reforestation of Formerly Forested Lands". This should not include planting trees on prairie land. Couple with 7.2 to expand urban forest for sequestration but also impact on avoided energy use by buildings.</p> <p>Notes on 7.2:</p> <p>4 - Very important and should be merged with 7.1, as “urban” is an unnecessary distinction – we want ALL FORESTS to be protected, urban and rural.</p> <p>5 - Reforestation of former forested land.</p> <p>8 - It is not clear why the Potential GHG Emissions Reduction is listed as L-M for</p>

AFW Policy Option #	Suggested Policy Option Name	AFW Catalog Option No.	AFW Catalog GHG Reduction Policy Option	Number of Ballots Identifying Option as Priority	Additional Notes for Balloting
					<p>Urban Forestry but H for other forestland (options 7.3 and 7.4), especially given the urban heat island effect. The State of Minnesota has spent many millions of dollars since 1990 on a nationally recognized program called Minnesota ReLeaf, a cost-share program designed to plant trees in urban and rural areas (but especially in urban areas) to sequester carbon, promote energy conservation, and provide an array of other co-benefits. The MN DNR Division of Forestry may have cost per ton figures available, which may not be M-H. I have tried contacting Division of Forestry Assistant Director Bob Tomlinson (651/259-5290) and Urban and Community Forestry Coordinator Ken Holman (651/259-5269) about this, but they have not been available.</p> <p>9 - Reduction of heat island and increase in energy absorption.</p> <p>16 - Couple with 7.1 as well as 7.3. urban forestry has large potential beyond sequestration to decrease urban heat island effect and avoid energy use in buildings.</p> <p>Notes on 7.4: 10 - This actually includes 7.5 and 7.6. It is the “correctly manage what you have”</p>

AFW Policy Option #	Suggested Policy Option Name	AFW Catalog Option No.	AFW Catalog GHG Reduction Policy Option	Number of Ballots Identifying Option as Priority	Additional Notes for Balloting
					<p>portion of the equation. It is likely that management for carbon sequestration will also benefit production of high quality wood products for the construction industry. This keeps the carbon out of the cycle for a greatly increased time.</p> <p>Notes on 7.5: 8 - Wildfires result in large carbon emissions (e.g., a mean of 18% of all CO2 emissions in Canada). MN has had two 35,000+ acre wildfires in the past two years, the largest in 90+ years.</p> <p>13 - Combine with 7.4 and 7.6.</p> <p>Notes on 7.6: 8 - As trees age they become more susceptible to insect and disease infestations, which result in large carbon emissions. Since 1977, tree mortality has doubled, from 123 to 250 million cubic feet per year.</p>
AFW-3	Integrated Waste Management	9.1 9.6 9.3	Advanced Recycling Enhanced Management of Organic Waste Source Reduction Programs	13 5 3	<p>Notes on 9.1: 4 - Very important in reducing our overall emissions from fossil-fuel materials/packaging production.</p> <p>5 - Complements source reduction.</p> <p>7 - Could include composting 9.3, 9.6 & 9.7</p>

AFW Policy Option #	Suggested Policy Option Name	AFW Catalog Option No.	AFW Catalog GHG Reduction Policy Option	Number of Ballots Identifying Option as Priority	Additional Notes for Balloting
					<p>as part of an integrated waste management program.</p> <p>9 - Create outcome-based indices focusing on energy reduction and carbon sequestration.</p> <p>10 - This should include re-use. What does not go into a landfill and is reused or recycled will not generate methane.</p> <p>Notes on 9.6: 4 - Composting is MUCH BETTER than landfilling for reducing GHG emissions from organic materials; and, done right, composting creates a valuable soil additive that can help build soil organic matter, thus composting not only reduces emissions, but can help to sequester carbon as well.</p> <p>10 - There are multiple benefits from this action. It diverts material from landfills and produces useful products that can further enhance sequestration (compost in soil).</p> <p>Notes on 9.7: 7 - Good way to avoid landfill methane production and offset fossil fuel use.</p> <p>Notes on 9.3: 4 - To “eliminate” emissions from the beginning, we need to really focus on</p>

AFW Policy Option #	Suggested Policy Option Name	AFW Catalog Option No.	AFW Catalog GHG Reduction Policy Option	Number of Ballots Identifying Option as Priority	Additional Notes for Balloting
					<p>reducing overall waste streams, so this is a critical initial step.</p> <p>5 - Crucial to promoting shared responsibility for climate protection.</p> <p>9 - Difficult to measure, but most efficient.</p> <p>10 - Again, if waste is not landfilled we do not have to deal with the attendant methane issue. This could possibly be re-titled Waste Stream Diversion, which would then subsume recycling and enhanced management of organic waste. The intent would be to create a waste stream management system that emphasized alternatives to landfilling that can either eliminate or mitigate GHG production or allow capture during processing.</p>
AFW-4	Expanded Use of Biomass Feedstocks for Electricity, Heat, or Steam Production	1.1 6.1 6.4	Expanded Use of Biomass Feedstocks for Electricity, Heat, or Steam Production Expanded Use of Forest Biomass Feedstocks for Electricity, Heat and Steam Production Improved Commercialization of	13 5 3	<p>Notes on 1.1:</p> <p>4 - Should be combined with 6.1.</p> <p>5 - Should be combined with 6.1 (forestry biomass).</p> <p>9 - Consider combining with 6.1.</p> <p>10 - Includes 6.1, this is specific to neither forestry nor agriculture but both sectors can contribute. They should be combined.</p>

AFW Policy Option #	Suggested Policy Option Name	AFW Catalog Option No.	AFW Catalog GHG Reduction Policy Option	Number of Ballots Identifying Option as Priority	Additional Notes for Balloting
			Biomass Gasification and Combined Cycle		<p>13 - Combine with 6.1.</p> <p>14 - Combine with 6.1.</p> <p>16 - Environmental impact of feedstock growth should be part of this if picked as a priority. Could be coupled with 6.1.</p> <p>Notes on 6.1: 4 - I didn't vote for this one, as it is so similar to 1.1 and I think they should be combined.</p> <p>5 - This is included in 1.1, so not being separately prioritized.</p> <p>8 - I am not voting for this option. If it is voted in, only H potential, L cost projects that do not adversely affect existing forest and agricultural industries should be pursued.</p> <p>10 - See 1.1, 1.1 and 6.1 should be combined.</p> <p>11 - Combine with 1.1.</p> <p>16 - Environmental impact of feedstock growth should be part of this if picked as a priority. Could be coupled with 1.1.</p>

AFW Policy Option #	Suggested Policy Option Name	AFW Catalog Option No.	AFW Catalog GHG Reduction Policy Option	Number of Ballots Identifying Option as Priority	Additional Notes for Balloting
					<p>Alaska. This item may be more important than many of the other items combined.</p> <p>14 - These lands hold high amounts of soil carbon.</p> <p>16 - Combine with 12.2 if wetlands shown to be net carbon sinks.</p> <p>Notes on 12.2: 4 - This can be combined in many cases with 12.2, as wetlands and peatlands are directly related.</p> <p>10 - Re-title to include peatlands “Conservation and/or Expansion of Wetlands and Peatlands. Peatlands are a type of wetland, albeit a type that is critically important in the carbon sequestration venue. This should include some emphasis on increasing the upland buffer area in restored or created wetlands (amend the WCA). The upland areas are typically grasslands with more or less woody vegetation that sequester significant carbon. Any net reduction in GHG related to created or restored wetlands will likely be related to the type of wetland.</p> <p>16 - Combine with 12.1 if wetlands shown to be net carbon sinks.</p>

AFW Policy Option #	Suggested Policy Option Name	AFW Catalog Option No.	AFW Catalog GHG Reduction Policy Option	Number of Ballots Identifying Option as Priority	Additional Notes for Balloting
AFW-6	Forest Protection – Reduced Clearing and Conversion to Nonforest Cover	7.1	Forest Protection – Reduced Clearing and Conversion to Nonforest Cover	11	<p>Notes on 7.1:</p> <p>5 - Protection of all forests, including those affected by urban development. Analysis should include sequestration and energy efficiency objectives.</p> <p>8 - Many co-benefits in terms of continued timber production, public recreational access, water quality, wildlife habitat, biodiversity. Many other funding sources to lower costs per ton sequestered.</p> <p>9 - Couple with 7.2.</p> <p>10 - This is the “keep what we have” term in the forest equation.</p> <p>16 - Couple with 7.2 - Urban Forestry should be framed beyond its carbon sequestration potential as it has a large potential to decrease urban heat island effect and energy use of buildings.</p>
AFW-7	In-State Liquid Biofuels Production	1.2	In-State Liquid Biofuels Production	8	<p>Notes on 1.2:</p> <p>1 - Same as 6.2?</p>
		6.2	In-State Liquid Biofuels Production (Forestry)	2	<p>4 - This could be a good approach, but ONLY if it is focused on feedstocks that provide significant GHG sequestration potential, such as perennials.</p> <p>10 - Includes 6.2, this is specific to neither</p>

AFW Policy Option #	Suggested Policy Option Name	AFW Catalog Option No.	AFW Catalog GHG Reduction Policy Option	Number of Ballots Identifying Option as Priority	Additional Notes for Balloting
					<p>forestry nor agriculture but both sectors can contribute. They should be combined.</p> <p>13 - Combine with 6.2.</p> <p>14 - Combine with 6.2.</p> <p>15 - Combine with 6.2.</p> <p>16 - If this is prioritized, a low-carbon index for biofuels production should be incorporated, along with feedstock sustainability standards.</p> <p>Notes on 6.2:</p> <p>4 - This should be combined with 1.2.</p> <p>8 - I am not voting for this option. If it is voted in, only H potential, L cost projects that do not adversely affect existing forest and agricultural industries should be pursued.</p> <p>10 - See 1.2, 1.2 and 6.2 should be combined.</p> <p>15 - Combine with 1.2.</p> <p>16 - If this is prioritized, a low-carbon index for biofuels production should be incorporated, along with feedstock</p>

AFW Policy Option #	Suggested Policy Option Name	AFW Catalog Option No.	AFW Catalog GHG Reduction Policy Option	Number of Ballots Identifying Option as Priority	Additional Notes for Balloting
					sustainability standards.
AFW-8	End of Use Waste Management Practices	10.3	Landfill Methane Energy Programs	7	Notes on 10.3: 4 - While important for existing landfills, 10.2 and 10.3 should not be prioritized higher than source separation/waste diversion, as these are much more important for reducing GHGs from the outset, rather than focusing on methane production after the fact. 7 - Combine with 10.1 and 10.2 - all integral components of methane management.
		10.2	Methane and Biogas Energy Programs	1	
		9.2	Promotion of Bioreactor Technology (or other Advanced MSW Management Practices)	3	
		9.7	Promotion of New or Existing Technologies for Waste Energy Conversion	1	
Medium Priority		5.1	Reductions in On-Farm Energy Use	5	Notes on 5.1: 4 - I see this as very important, but could see folding it under 5.2, as on-farm energy use is often a function of agricultural systems and practices. 16 - Could be coupled with 3.3 and 5.2. Notes on 3.3: 14 - Combine with 5.1 & 5.2 change name to Technology and On farm use energy efficiency. (In 2005 Technology could of reduced the over 5.88 MMtCO ₂ e produced by Mineral fertilization, Manure Soil Application, Leaching and run off, Urea
		3.3	Technology Improvements to Increase Efficiency	1	

AFW Policy Option #	Suggested Policy Option Name	AFW Catalog Option No.	AFW Catalog GHG Reduction Policy Option	Number of Ballots Identifying Option as Priority	Additional Notes for Balloting
					Application, and Liming of Fields, by 10-15% or more). 16 – Could be coupled with 5.1 and 4.2. How is this one being addressed in the RCI TWG?
Medium Priority		2.1.1	Manure Management: Manure Utilization	3	
Medium Priority		5.3	Programs to Support Local Farming/Buy Local *(S)	3	Notes on 5.3: 4 - A potentially important area, but we need more research to prioritize on a GHG basis.
Low Priority		8.3	Expanded Use of Wood Products for Building Materials	2	
Low Priority		11.1	Energy Efficiency Improvements	2	
Low Priority		13.1	Facilitate the Development of Terrestrial Sequestration Offsets Markets	2	Notes on 13.1: 4 - I strongly feel that this category shouldn't be included – at least at this point – as offset markets are likely to be a mechanism to get the reductions we seek in MN, but not an actual area of reductions (unless this is focused on out-of-state purchases, which I would strongly oppose). This belongs in the “cross cutting initiatives” section or as a means to getting the reductions in the sectors we prioritize, not as a primary area for reductions.

AFW Policy Option #	Suggested Policy Option Name	AFW Catalog Option No.	AFW Catalog GHG Reduction Policy Option	Number of Ballots Identifying Option as Priority	Additional Notes for Balloting
					<p>5 - The TWG rejected including this option for a variety of reasons. I think that it is very important and think that other opportunities should be devised to cover it.</p> <p>16 - This should not be just in the AFW list. Offsets are multi-sector, and include renewables, energy-efficiency, etc projects. Also, in themselves, they will not result in an "actual" reduction in GHGs. This option should either be pitched to the cross cutting issues TWG or come back to us at a later date once we have identified priorities for achieving reductions.</p>
Low Priority		2.1.2	Manure Management: Manure/Methane Capture	1	
Low Priority		8.1	Improved Mill Waste Recovery; Utilization of Mill Residues and Emissions	1	
Low Priority		12.2	Conservation and/or Expansion of Wetlands	1	
Low Priority		2.2	Changes in Animal Feed	0	
Low Priority		2.3	Rotational Grazing (Improve Grazing Crops and/or Management)	0	Notes on 2.3: 4 - Fits as a potential "market" for 4.1 and can be tied to 2.5.
Low Priority		2.4	Utilize Biofilters to Control	0	Notes on 2.4: 15 - Broaden to "manage emissions."

AFW Policy Option #	Suggested Policy Option Name	AFW Catalog Option No.	AFW Catalog GHG Reduction Policy Option	Number of Ballots Identifying Option as Priority	Additional Notes for Balloting
			CAFO Emissions		
Low Priority		2.5	Increase Pasturing & Lower Densities	0	Notes on 2.5: 4 - A corollary to 4.1, as pastures are, when managed well, perennial herbaceous cover.
Low Priority		3.4	Water Management	0	
Low Priority		3.5	Drainage Management	0	
Low Priority		4.2	Preserve Open Space/Agricultural Land	0	Notes on 4.2: 9 - Use audits and outcomes.
Low Priority		6.3	Improved Energy Capture from Wood Waste Combustion	0	
Low Priority		8.2	Improved Logging Residue Recovery	0	
Low Priority		9.4	Resource Management Contracting	0	Notes on 9.4: 4 - I see 9.4 as directly linked to 9.3 and would recommend combining them.
Low Priority		9.5	Incentives for Municipalities to Manage Waste Collection	0	
Low Priority		10.1	Flare Landfill Methane at non-NSPS (smaller) Sites	0	
Low Priority		11.2	Lower Waste Processing Needs (lower water consumption, waste production)	0	
Low Priority		11.3	Install Digesters and Turbines or Engines	0	
Low Priority		11.4	Restoration of Soil Organic Carbon from Application of	0	CCS Note: potential to capture this under the soil carbon management option above.

AFW Policy Option #	Suggested Policy Option Name	AFW Catalog Option No.	AFW Catalog GHG Reduction Policy Option	Number of Ballots Identifying Option as Priority	Additional Notes for Balloting
			WWTP Biosolids		
Low Priority		11.5	Heat Recovery	0	
Low Priority		11.6	Algae and Bio-Oils	0	CCS Note: could show up under the Biofuels Production Options above.