Co-Benefits & Tradeoffs Assessment Matrix

Multi criteria analysis (MCA) is a widely used approach to foster comprehensive conversations and structure decision-making in a consistent and transparent manner, which allows for the incorporation of diverse criteria together and consideration of trade-offs[1]. Our subcommittee can use this approach to consider qualitative factors alongside quantitative data, and effectively guide decisions in a transparent manner. This enables the public to engage at a more detailed and constructive way and will allow policy makers to see how our decisions and recommendations were informed. Also, our sub-committee will have a more structured and consistent way to evaluate options, especially as we divvy up strategy development by work plan task, making for a more cohesive review process at the full subcommittee level.

In summary, the multi-criteria assessment tool which we propose to use allows our decision-making process to:

- Incorporate diverse kinds of criteria together that should be considered in decision-making on behalf of the State of Vermont and Vermonters
- Consider intangible and hard to measure aspects alongside known and quantifiable impacts
- Support communication within our subcommittee conversations about how we are making decisions and
- Provide transparency to the public about our process and recommendations

The Co-benefits and Tradeoffs Assessment Matrix below is the tool we will use for this approach. The tool should be used first at the individual subcommittee member level, to be brought to the group for full discussion and consensus building. Decision-making criteria are listed in the rows. Columns 3 and 4 are designed to capture both our qualitative and quantitative assessments. This information will be used to inform an assignment of directionality for each criterion in Columns 5, in the form of a +1 for positive impact, 0 for neutral impact, and -1 for negative impact.

Each criterion will be assigned a weight, based on the result of a deliberative process with input from all of our committee members (and ideally, with support from CBI), and that will be entered into Column 6. An overall score will be given to each program, strategy or initiative we evaluate with this tool by multiplying the directionality (Column 5) by weighting (Column 6), and then taking a sum of all.

The weight assigned to each criterion is a very important part of this tool and will influence the overall scores and resulting recommendations. Our suggestion is that facilitated process draws input from every committee member on their perspectives, then some discussion may ensue, and finally a survey will draw votes from each members as to the weight that should be assigned to each criteria. The results of the survey would provide data to

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[1] Langemeyer, J., Gómez-Baggethun, E., Haase, D., Scheuer, S., & Elmqvist, T. (2016). Bridging the gap between ecosystem service assessments and land-use planning through Multi-Criteria Decision Analysis (MCDA). *Environmental Science & Policy*, *62*, 45-56.

Dendoncker, N., Keune, H., Jacobs, S., & Gómez-Baggethun, E. (2013). Inclusive ecosystem services valuation. In *Ecosystem Services* (pp. 3-12). Elsevier.

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determine the final weighting, which we can then use to prioritize our recommended strategies. The "total assessment score" will be added to the larger Strategy Prioritization Framework spreadsheet to be used by the full subcommittee for final prioritization and recommendation to the Climate Council.

Strategy:

Criteria	Sub-Criteria	Qualitative Impacts	Quantitative Measure	Directionality (-1, 0, +1)	Weighting (multiplier)	Direction x Weight
Climate Resilience						
	Warmer temperatures overall & summer heat stress					
	Increased temperature variability, phenological disruptions & frost damage					
	Precipitation increases overall					
	Increase in extreme precipitation events and associated flood damage					
	Severe wind and storm hazards					
	Increased incidence of drought					
	Increasing pest, disease and weed pressure					
Environment						
	Water Quality					
	Air Quality					
	Biodiversity					
	Soil Health					
Cultural capital/ Cultural ecosystem service						
	Identity					
	Sense of place					
	Spiritual					
	Aesthetic					
	Education & Knowledge Systems					
Equity						
	Uses community engagement					

Commented [LO1]: "Does the proposed strategy help build climate resilience to [sub-criteria]?"

Commented [LO2]: Need to better define storm to avoid potential double counting (e.g. storm hazard and flood damage above it).

Commented [LO3]: How do we define soil health to avoid double counting (e.g. healthy soils hold more carbon, but are we already accounting for the carbon in air quality or even more broadly in the carbon budgeting process?)?

Commented [LO4]: Recognition that these will likely differ at the individual scale and therefore should foster deep conversations and opportunities for shared learning during strategy development and passing them through this process. In the absence of consensus around directionality, recommend a neutral ranking, with the hopes that specific comments can be captured below for the record.

Commented [LO5]: Need to define aesthetic as this is incredibly subjective. What does this group consider a "desirable aesthetic"

Use the Act 250 definition?

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	Actively anti-racist					
	Serves/targets rural communities					
	Serves/targets disinvested communities					
	Serves/targets BIPOC communities					
	Cultural humility					
Community Cohesion						
Social Capital						
Human Capital						
Public Health						
Food Security						
Sustainable Outdoor Recreation Economy						
Sustainable Rural Working Land Economy						
Other economic benefits						
Built Infrastructure						
Questions on the strategy?						
Comments						
				Total Assessment Score		

Commented [LO6]: At the 4/26 full Council meeting, Sarika Tandon (RISE consulting) recommend we use the term "impacted". I wonder if this group can agree with that term here?

Commented [LO7]: Recognizing that there are racial and ethnic differences and how one handles them.

Commented [LO8]: Using networks to help solve problems, take on an issue, or recognize issues.

Commented [LO9]: During our subcommittee walk-through, a point was made that the MCA should include a section where questions on the proposed strategy during MCA discussion can be captured for consideration, so adding it here as a placeholder.

This will also be a good place to identify communities, agencies, individuals, organizations, etc. to whom these questions are directed.

Commented [LO10]: A catch-all place to drop comments shared during the MCA process. For example, disagreements over aesthetics or air quality or an indication that a net gain wetland policy should prioritize restoration efforts in those places with higher senses of place or that would yield greater soil health returns.

Comprehensive Equity Consideration:
Though there is an Equity criterion with several sub-criteria devoted to explicit equity concerns, subcommittee members will recognize and acknowledge equity throughout each sub-criteria during strategy review through the MCA. For example, when considering a net gain wetlands policy strategy and its potential impact on air quality, subcommittees members shall consider if wetlands have a positive, negative, or neutral directionality for all Vermonters (i.e. is air quality only improved in certain communities or areas in the state while other communities experience a negative air quality impact from the policy, or is the policy equitable in improving air quality for all?).

Common Definitions
- Resilience
- Storm

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- Disinvested
- Aesthetic
- Soil Health