

Evaluation Criteria

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NOTE: The following discussion draws heavily from a memorandum titled “Criteria for assessing adaptation policy options” that the State of Alaska commissioned from the National Commission on Energy Policy.

Context

This memo defines a set of criteria that could be used by the State of Alaska’s Adaptation Advisory Group (AAG) and/or its Technical Working Groups (TWGs) to facilitate discussion and evaluation of potential state adaptation actions. The goal of these criteria is to identify potential state actions that are most significant and merit potential policy action by the Governor. Using a common set of evaluation criteria will facilitate consistency across the TWGs in identifying adaptation options for further development. In addition, individual TWGs can choose additional criteria that increase insight into the potential state actions or if TWG members feel strongly about a particular criterion.

It is recommended that the criteria are scored qualitatively as ‘high,’ ‘medium,’ and ‘low.’ While some criteria such as ‘benefits and effectiveness’ and ‘costs’ sometimes can be expressed quantitatively or in a common metric such as dollars, other criteria, such as ‘feasibility’ cannot. Furthermore, the purpose of these criteria are not to exhaustively evaluate each potential state action, but rather to rapidly assess the potential state adaptation actions for the purpose of narrowing the range of actions that are considered more extensively.

Main criteria

- ▶ *Significance* – Significance describes the magnitude or extent of the anticipated impact. This criterion can be used to assess whether the impact that an option is designed to address is relatively more important than other impacts within the TWG catalog. It can be used to assess whether an impact or its response may lead to irreversibilities that will affect either future resilience or the ability of the state to implement future options. It also be used subjectively to capture intangible issues that may concern many citizens, such as social justice, the viability of small or rural communities, maintaining historical ways of life, biodiversity, etc. Value judgments may be necessary when determining the significance of various options to the viability and way of life in rural communities, or when assessing options that address cultural risks. It would be helpful to explicitly note when the ranking is based on a value judgment. Consequently, there is no right or wrong ranking for this criterion. Its value is best determined through discussion among the TWG members.

- ▶ *Benefits and effectiveness* – This criterion compares vulnerability without adaptation to vulnerability with adaptation. This difference in vulnerability can be thought of as the

primary benefit of the adaptation option. For example, armoring coastlines may reduce the likelihood of important coastal infrastructure becoming damaged during storm events. However, because armoring coastlines also could result in loss of wetlands, this criterion should consider the balance between positive and potential negative impacts associated with the option. In addition, ancillary- or co-benefits should explicitly be considered if the potential state action provides benefits to other sectors or for other policy objectives. This criterion also includes the concept of flexibility; will the proposed state action be adjusted in response to changing conditions or will it be effective (provide benefits) under different plausible climate scenarios.

- ▶ Costs – This criterion concerns whether an adaptation is relatively expensive or inexpensive. Typically, cost includes the initial costs of implementing a potential state action. However, costs over time, such as operation and maintenance, administration and staffing, expected frequency of reconstruction, and so forth, should also be considered. An accounting of costs should include non-economic and non-quantifiable costs as well as economic and/or quantifiable costs. For example, costs such as a reduction in viable habitat for significant species, loss of coastal wetlands because of armoring, or an increased impact on human health should be considered alongside more traditional costs.
- ▶ Feasibility – This criterion addresses whether the state can realistically implement the proposed action. Is the proposed action within state authority or is it more appropriately the role of the federal government, localities, individuals, etc? Do the necessary legal, administrative, financial, technical, and other resources exist, and are they available for use on this proposed state action? The TWG is not explicitly considering whether there is the political feasibility to implement the option.

Other potential criteria

- ▶ Timing – Some climate impacts are not expected to occur for decades while others are being observed or are likely to become apparent within a few decades. For example, increases in temperature that will take decades to realize may be needed for some invasive species to colonize Alaska, while melting sea ice and thawing permafrost are already affecting coastal villages and the Alaska interior. If an impact is already occurring or projected to occur in the near future, it may merit greater consideration than longer-term impacts.
- ▶ Adaptive capacity – Adaptive capacity describes the ability of a human or natural system to cope with the consequences of climate change. Some systems can accommodate changes in climate without significant intervention while other systems cannot. For example, most hard infrastructure, such as roads, bridges, coastal buildings, etc. cannot alter their alignment, elevation, or structural foundation to accommodate coastal erosion or increased flood risk. On the other hand, farmers have historically responded to natural climate change by changing farming practices, crops planted, etc. Consequently, adaptive capacity may be lower for hard infrastructure than for agriculture.