

Appendix II – e. Summary of interview responses to Charge #3

3) Assess the future need for and value of NARSTO and the kinds of perspective, products, and services it can provide.

Each row below corresponds to the comments of a particular interviewee whose names have been redacted

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| Perspective | Product | Service | Future need for | Value of |
| . | | Do any individual states use NARSTO? | Yes. | Pennsylvania, New York and Maryland to name three. |
| | <p>Organic carbon, Fine particles</p> <p>As SOx and NOx are reduced, Organic Carbon will become increasingly important.</p> <p>Agricultural sources are topics of current interest e.g. ammonia emissions.</p> <p>Need to look carefully at consequences of the CAIR program “vacation” and consider possible ways to improve the CAIR program, especially phase II where EPA might have discretion.</p> <p>Develop more useful model outputs. Further work on nitrogen chemistry in the atmosphere.</p> | | Yes | |
| I believe the most important decisions regarding air quality in North America will come from policy | A multi-pollutant, integrated approach will clearly be | Meeting regularly with | Yes | Very valuable |

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| decisions on climate change. A world-wide emissions cap and trade approach is likely to be needed for climate change management policy. There is also a need to better link air quality and climate models There are needs to more clearly identify and enhance the information management and decision-support systems for managing AQ and climate on the state/provincial, federal and international levels. We might consider controlling power plants for CO ₂ , but do we understand the greater consequences of such an approach? Tran boundary North American and intercontinental transport issues will become more important as US & Canadian & Mexican AQ standards have been going down, increasing the importance of transported “background” concentrations. | important for developing sound and effective climate policy, and NARSTO’s continuing work on the MPAQM Assessment will prove to be timely. What is the best approach for integrating AQ and GHG management, e.g., the role of black carbon? Do the work that will help us understand the consequences of controlling power plants for CO ₂ . Develop a better understanding of the influences of fires (emissions, chemistry, transport) on (and from) air quality and climate. | and coordinating with the climate change research community would be valuable for NARSTO, which could play an important role by focusing on the air quality/climate interface and helping support coordinated AQ/climate management strategies. NARSTO’s recent work on emissions inventory improvement | | |

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| | | and on multi-pollutant management strategies could be expanded in this area. NARSTO can provide important developmental and coordinating roles to better link air quality and climate models. | | |
| In North America, NARSTO has dealt with some episodic pollution issues, but issues like fires offer opportunities where air quality managers still don't have the right tools. NARSTO can be a vehicle – have a role – in bridging gaps between departments and agencies? Now may be important for NARSTO to look at non-mandatory programs, not on the OAR budget - such as the air quality monitoring and public | With respect to climate, there is a lot to be done. In regards to bio-fuels, there is value in looking at the science behind bio-fuels – effects in the atmosphere, macroeconomic analysis, life cycle of sources. Questions like; will bio-fuels | Public private partnerships allow for this kind of question to be addressed. NARSTO should engage NASA for | | |

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| communication program AIRNOW for instance and the hemispheric transport issue | change atmospheric composition, fertilizer application, and land – agriculture issues could be addressed. | satellite monitoring using existing on-the-ground monitoring as a “minimal” ground truth network. | | |
| One aspect that is key to increasing value is refining the questions being asked in NARSTO efforts – i.e., in two past Board evaluations of NARSTO assessments, at least one Board member was critical of the questions hitting the key issues, saying that the process of eliciting questions could be improved using a “sociologic” approach. In other words, the questions need to reflect policymaker needs. Need a healthy balance of effort toward immediate air quality needs and greenhouse gas/climate issues (risk of climate change dominating vs. not focus on climate change due to so much focus already?). | Identify key interactions between the two and aspects central to both. From sources to receptors and including societal needs. | Look at investments through the air quality lens – choices we should consider in response to jointly considering transportation, energy, fiscal and health policy. | In the future, NARSTO should increase focus on issues related to program implementation and meeting targets for states and sources, i.e., how to solve problems. | |

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| | | | Background ozone level challenge vs. lower standards, whether there is no threshold for adverse effects/ margin of safety. How to make choices and implement ? | |
| Climate change has so much research money going to it, NARSTO would likely not be an effective institution for addressing the broader aspects of Climate Change per se. Health effects are an important driver of air quality | As the US NAAQS are revised toward lower and lower levels, developing a better understanding of natural, trans-boundary North American, and intercontinental transported policy-relevant background (PRB) levels will become increasingly important | A future focus on the Climate/Air Quality interface could be a useful service. | Yes | High |

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| management decisions. | for setting NAAQS and developing efficient future AQ management strategies. NARSTO could play a useful future role in developing improved AQ health assessments. | | | |
| In the next year or so the broader policy formulation community will realize that Air Quality and climate change are inextricably linked. NARSTO is well staffed and structured to play a pivotal role here if properly supported. | | | | |
| PM (emissions, chemistry, transport and effects) continues to be a priority research area. Interactions between climate and air quality will soon become a major issue in the next Administration. Issues like reformulated fuels and greenhouse gases will become increasingly important – with AQ feedback to and from climate. Reactive Nitrogen is an important emerging issue and nitrogen deposition is receiving increased attention from the EPA Water Office. This issue is also being emphasized by the SAB Integrated Nitrogen Committee and by the CASAC Secondary SO _x /NO _x NAAQS Review Committee. Environmental effects of criteria pollutants | | | | |

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| (secondary NAAQS) have been relatively neglected in recent years, and that this might be another productive area for future NARSTO research focus. Climate is likely to be the driver for many future AQ management decisions and benefits. NARSTO focus should be limited to the AQ/Climate interface, where it could play a very useful role. It would be important to get advance buy-in from the Program Office that this should be a NARSTO activity. | | | | |
| | <p>In Mexico, there are three main needs.</p> <p>Improve emissions inventory – more local information – improved emissions factors.</p> <p>Improve resolution of data: spatially and temporally. One inventory so far for the states and the nation. Need many more years of data</p> <p>How to use the emissions inventory for modeling. Need to improve the models performance. Then Mexico will have a valuable tool for both air quality and climate change. The current</p> | | | |

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| | <p>Model has limitations.</p> <p>Need more in-depth analysis. Integrate black carbon issue into the co-benefit analysis. Like to have more robust tools to look at the regional/national improvements.</p> | | | |
| <p>The vehicle traffic signal is starting to emerge from PM analyses from the health perspective. More and more focus is being placed on the near road paradigm. Therefore, now as much as in the past, NARSTO work is very valuable to him. He does not have the resources to do it all in house.</p> | <p>What is air quality and how is it changing?</p> <p>What are the health and ecosystem impacts?</p> <p>.</p> | <p>The multi-pollutant initiative is a very important air quality story. It will involve bio-fuels, nitrification of streams, ground and surface water changes, ammonia and agricultural impacts as well as near road issues and all aspects of energy</p> | | |

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| Air Quality and Climate Change; Bio-fuels and Climate Change Commercial chemicals consumed by people - linked to toxics. | | | | |
| <ul style="list-style-type: none"> With HEI and NRC, the questions to be answered are agreed to before work begins. This is the key to getting high level support. Individuals, not institutions are driving the boat in NARSTO. To survive NARSTO will need stronger institutional buy-in, support and review. The history of how NARSTO was formed and how it has been managed shows where the problem lies: NARSTO was a commitment of individuals, not institutions. This was true for DOE, EPA and Industry. As these individuals have retired or moved on, continued commitment is a problem. Now, when discussions on research priorities with senior management occur, NARSTO is not the organization that is thought of. It is very important to have the right people and the right institutional level to ensure a more consistent product with institutional support of the final product. This will diminish the impact of individuals with agendas and strong personalities. | | | | |

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| <p>NARSTO has been of hit and miss ad hoc quality. To garner and keep respect, NARSTO must ensure a consistently high quality product with the right amount of the correct level of institutional involvement.</p> <ul style="list-style-type: none"> • NARSTO was formed in response to criticism of the government that there was no coordination. Better coordination mechanisms in the US government now exist. Currently, DOE is less of a player in AQ. Investment from industry has declined. The real value that has been added by NARSTO is the tri-lateral aspect. Monthly coordination meetings of the Air Quality Research Subcommittee are very useful. • NARSTO could be the forum for better networking and better communication. However, if the objective is to bring researchers together then does NARSTO need to do an assessment to do this? NO. • In 2008, new structure and ways to relate among researchers exist. Perhaps NARSTO could take on a new coordination function, by arranging and supporting a meeting twice a year for information sharing among the three countries, which would not lead to a document. | | | | |

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| <ul style="list-style-type: none"> • The change has not been gradual. The multi-pollutant assessment has been a problem. There is lots of science in the assessment but the policy focus includes subjective statements, with some bias, not based on consensus, and is therefore not a good thing from EPA’s point of view. • The fact that government scientists can participate in NARSTO is a good thing compared to the Academy work. Participants from EPA are widespread, the science is fine but the steering committee reflects no consensus, mostly individual opinions. Go back to the Ozone and PM assessments and check the authors. They were done very much like an Academy report, not a lot of participants from government regulatory side but lots of academia. • Three main needs: <ul style="list-style-type: none"> ○ Support for the Multi-pollutant approach, particularly the science behind it. ○ The interaction of Air Quality and Climate Change. Using the same framework as for AQ, add in the effects of adaptation and mitigation of climate change. ○ Pursue the development of ecologically relevant secondary | | | | |

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| <p>standards for 1 or more pollutants and specifically consider the importance of multiple pollutant air mixtures.</p> <ul style="list-style-type: none"> NARSTO could be involved in bringing together the transboundary and multilateral aspects of both the ecological work and the interaction between AQ and CC. Rather than preparing science assessments, NARSTO would promote and support meetings on specific topics. NARSTO could have a continental perspective in the intercontinental issue. NARSTO could engage regional air quality experts and could be a North American focal point. But NARSTO should not be involved in preparing any assessment. This is playing out elsewhere. Canada and the U.S. are already involved and Mexico is being invited. As this issue goes global, it would be good to have a NA group as a forum. There would be no need of going back to the NARSTO Executive with anything. Look at ACENT, which is the European focal point for scientists to bring the science community together to address policy relevant science questions. This could be part of the new vision for NARSTO. I do not know of any organization doing this now? Certainly no other NA organization is doing that now and the report should point out a definite need. | | | | |

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| <p>Climate change is becoming a bigger issue in the overall scheme of things and so it will drive everything else.</p> <p>Air Quality issues that we deal with to-day are going to stay. More and more we will have to figure out what kind of policies will address both issues. We will have to figure out how to combine the two in policy decisions. In the past we did not link them but in the future we will have to link them all. Both research and planning will have to be linked.</p> | | | | |