



## **Economic Activities Technical Working Group of the Alaska Climate Change Adaptation Advisory Group**

**Meeting #1: June 16, 2008, 12-2PM**

Governor's Climate Change Sub-Cabinet  
Center for Climate Strategies

### **Call Agenda**

- Welcome and introductions
- Part 1: Structure/roles/processes
- Part 2: Climate change  
impact/vulnerability/ opportunity review
- Part 3: Catalog of state adaptation  
actions/policies
- Public input
- Next steps for TWG

## **Welcome and Introductions**

- Alaska Climate Change Adaptation Advisory Group members
- Economic Activities (EA) Technical Working Group (TWG) members
- Center for Climate Strategies EA TWG Facilitation Team
- Members of the Public

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## **Part 1: Structure, Roles, and Processes**

## Overview of Alaska Climate Change Efforts Under Admin Order #238

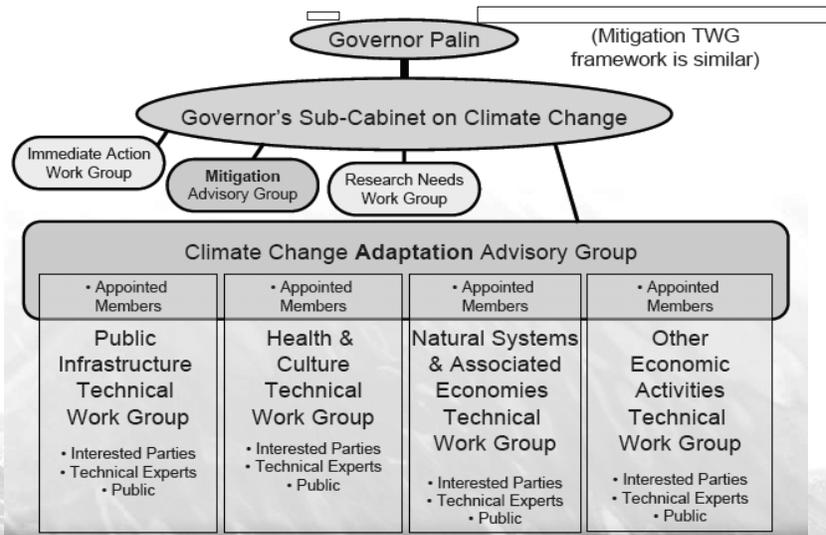
- A Climate Change Sub-Cabinet (CCSC) was convened by Governor Palin to provide advice to the Office of the Governor
- The CCSC oversees and coordinates the process of responding to Administrative Order No. 238
- The CCSC established a Mitigation Advisory Group (MAG) and an Adaptation Advisory Group (AAG)
- The AGs make recommendations on policy options and activities for mitigation and adaptation to the CCSC
- The AGs provides guidance to and receive input from the Technical Working Groups (TWG)

### Members of the AAG

\* = member of the EA TWG

Name	Title, Affiliation (Location)
<b>Elaine Abraham</b>	Alaska Native Elder, RN, BA/Human Development, & M.A.T in Bilingual Multi-Cultural Education (Yakutat)
* <b>John Binkley</b>	President, Alaska Cruise Association; and Chair, AK Railroad Corporation (Fairbanks)
<b>Taunnie Boothby</b>	Planner & State Coordinator, Floodplain Mgmt Programs, DCRA, DCCED (Anchorage)
<b>Bruce Botelho</b>	Mayor (Juneau)
<b>Michael Cerne</b>	Chief, Planning and Force Readiness, USCG (Anchorage)
<b>Terry Chapin</b>	Professor, Ecology, UAF (Fairbanks)
<b>Patricia Cochran</b>	Chair, Inuit Circumpolar Council (Anchorage)
<b>Billy Connor</b>	Director, AK University Transport Center, UAF (Fairbanks)
<b>Jeffrey Demain</b>	Medical Dr. & Founder, Allergy, Asthma, and Immunology Center of AK (Anchorage)
<b>Bryce Edgmon</b>	State Legislator, Western Alaska House District 37 (Dillingham)
* <b>Laura Furgione</b>	Director, NWS Alaska Region, NOAA (Anchorage)
* <b>Stan Foo</b>	Manager, Barrick Gold Corp (Donlin Creek)
* <b>Richard Glenn</b>	V.P., ASRC; and whaling captain (Barrow)
<b>Larry Hinzman</b>	Director, International Arctic Research Center, UAF (Fairbanks)
<b>Steve Ivanoff</b>	Planner, Transportation, Kawerak (Unalakleet)
* <b>Peter Larsen</b>	Sr. Policy Advisor, Climate Change, The Nature Conservancy (Anchorage)
<b>Stephanie Madsen</b>	Director, At-Sea Processors (Juneau)
<b>Denise Michels</b>	Mayor (Nome)
<b>Tony Nakazawa</b>	Professor, Economics, Natural Resources and Agricultural Sciences, UAF (Fairbanks)
<b>Bob Pawlowski</b>	Dir, Alaska Fisheries Development Foundation; member Alaska Climate Impact Assessment Commission, Immediate Action Workgroup (Juneau)
<b>Buck Sharpton</b>	Vice Chancellor Research, UAF (Fairbanks)
<b>Jeff Short</b>	Research Chemist, NMFS, NOAA (Juneau)
* <b>Orson Smith</b>	Chair, Civil Engineering, UAA (Anchorage)
<b>Bill Streever</b>	Mgr, Marine Mammal Program, British Petroleum AK (Anchorage)
* <b>Dale Summerlin</b>	V.P., Health, Safety, Environment, ConocoPhillips (Anchorage)
<b>Mead Treadwell</b>	Chair, Arctic Research Commission (Anchorage)
<b>Fran Ulmer</b>	Chancellor, UAA (Anchorage)
<b>Steve Weaver</b>	Chief Engineer, Alaska Native Tribal Health Consortium (Anchorage)
<b>Thomas Weise</b>	Rector, Catholic Cathedral (Juneau)

## Technical Work Groups for Adaptation Advisory Group



## AAG and TWGs

- Adaptation Advisory Group (AAG)
  - Review existing and planned state actions
  - Identify 30-40 potential options for design and priorities for analysis
  - Recommend actions to achieve the Administrative Order goals
- Technical Working Groups (TWGs)
  - Review vulnerabilities, impacts, and opportunities,
  - Analysis, review and early ranking of options
  - Develop initial straw proposals for activities and policies
  - Input to and review of AAG recommendations and reports
- TWG process is fully integrated with the AAG
  - TWGs serve in an advisory role to AAG
  - AAG members serve on the TWGs

## AAG TWG Focus Areas

- Public Infrastructure
  - the physical impacts of climate change on the built environment and transportation options
- Health and Culture
  - Human health, cultural, recreational and quality of life impacts of climate change
- Natural Systems
  - Impacts of climate change on biodiversity, ecosystem health and associated human economic activities
- **Other Economic Activities**
  - **Impacts of climate change on aspects of the economy that are not directly dependent on living ecosystems**

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## EA TWG Focus Areas

- Oil & Gas
- Mining
- Tourism/Recreation
- Ocean Transportation
- Rural Non-Road Ground Transportation
- Boundaries and Ownership
- Energy Demand – Costs to Businesses
- Other Business Impacts (e.g., insurance)

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## AAG Technical Working Group Roles

- Review and improve the vulnerability and impact assessment
- Identify potential state actions for a catalog
- Identify potential priorities for analysis
- Develop straw proposals for adaptation actions (costs, timing, geographic area, etc.)
- Assist with analysis and review of options and development of alternatives
- Provide recommendations to the AAG
- Assist with review of AAG final report to the CCSC
- Solicit and respond to public input

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## Timing

- AAG meetings (every two months approximately).
  - Meeting 1 - May 16 in Anchorage
  - Meeting 2 - July 16 in Fairbanks
  - Meeting 3 - September 23 TBD
  - Meeting 4 - November 7 TBD
  - Meeting 5 - February 6 in Anchorage (may be a weeklong Forum)
  - Meeting 6 - March 20 (tentative) TBD
  - Meeting 7 - April 30 (tentative, if needed) TBD
- TWG calls
  - Regularly scheduled
  - Two 2 hour calls between AAG meetings
- Final Product of AAG –
  - Report to Sub-Cabinet in April 2009
- See Orientation Document for process and timing on:  
[http://www.akclimatechange.us/Economic\\_Activities.cfm](http://www.akclimatechange.us/Economic_Activities.cfm)

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## Final Report from AAG to CCSC

- Executive Summary
- Background, Purpose, & Goals
- Alaska Vulnerability Assessment (NCEP)
- AAG Recommendations and Results
  - Public Infrastructure
  - Health & Culture
  - Natural Systems & Associated Economies
  - Other Economic Activities
- Appendices

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## Stepwise Planning Process for Adaptation

- **Develop/revise baseline vulnerability assessment and impact focus areas**
- **Identify a full range of possible actions ("catalog") and programs already in place**
- Identify initial priorities for analysis & development
- Develop straw proposals
- Evaluate (and quantify to the extent possible) costs and benefits
- Evaluate feasibility issues; associated issues; linkages
- Develop alternatives if needed to enhance consensus
- Iterate to final agreement
- Finalize and report recommendations

Red font indicates work to be done by July 16<sup>th</sup> for AAG Meeting

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## Key Components of the Process

- Comprehensive
- Stepwise
- Fact based
- Transparent
- Inclusive
- Collaborative
- Consensus driven



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## Coverage Of Issues



- All impacts related to human health, culture, recreation, and quality of life
- All conceivable adaptation policy responses
- All potential implementation mechanisms
- Short and long term actions

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## **Ground Rules**

- Supportive of the process
- Attendance at meetings
- Equal footing
- Maintain currency with the information
- No backsliding
- Do not represent the AAG or TWG
- Make objective contributions

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## **Part 2: Climate Change Effects, Vulnerabilities, Impacts, and Opportunities in Alaska**

## Effects of Climate Change in Alaska

- Shorter winters
- Longer and warmer Arctic summers
- Sea level rise
- Coastal erosion
- Thawing permafrost
- Retreating sea ice/glaciers
- Increased forest fires

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## Examples of Vulnerabilities, Impacts, and Opportunities

- Reduced operation windows for gas and oil exploration during winter (permafrost thaw)
- Pipeline damage (permafrost thaw)
- Economic activities curtailed due to polar bear denning on land (less ice)
- Waste pits breached (sea level rise)
- Stability and seepage issues for tailings dams (permafrost thaw)
- New shipping lanes (less ice)
- Navigation issues (melting glaciers)
- New tourism possibilities (less ice, higher temperatures)

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## Example: Oil and Gas Impacts, Vulnerabilities, Opportunities

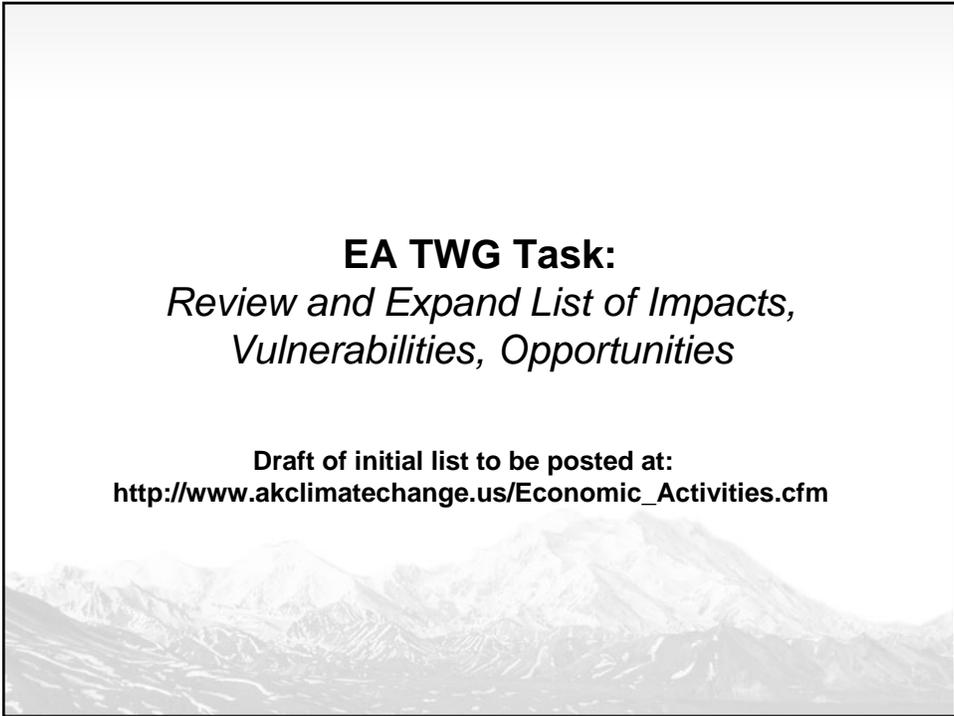
- **Current Onshore Operations:**
  - reduced operation windows for exploration and development during winter (e.g., between 1970 and 2002, the number of days tundra travel was allowed declined by 50% -- the number increased subsequently due to new standards but is still lower than in the 1970s);
  - reduced efficiency of gas compression and reinjection during warmer months, resulting in reduced production;
  - impacts on seismic and other activities because of animal behavior and distribution changes (e.g., more polar bears denning on land).
- **Potential Future Onshore Operations:**
  - more reduced ice road, tundra ice travel, and ice platform opportunities;
  - reduced efficiency of gas compression (this issue could be reduced or eliminated once a gas pipeline is constructed);
  - increased rate and amount of animal behavior changes impacting oil and gas activities (e.g., more walruses and polar bears on land);
  - changes in permafrost could result in flooding of gravel pads and the migration of contaminants into the environment.

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## Example Ocean Transportation Vulnerabilities, Impacts, and Opportunities

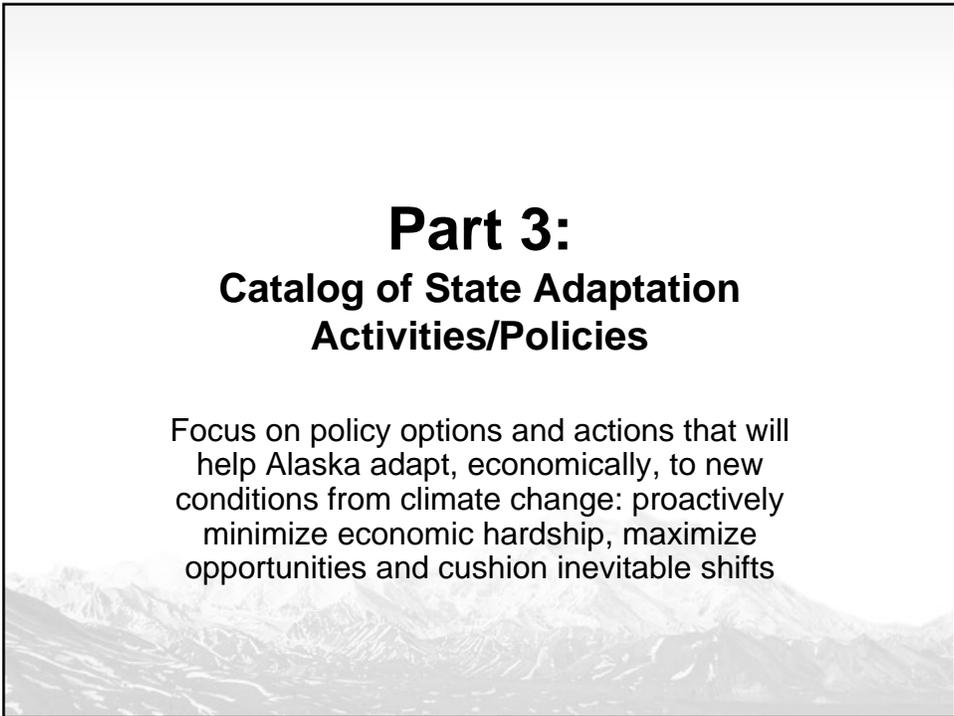
- **Current ocean transportation:**
  - Opening up summer shipping lanes and opportunities (a 10% decline in sea ice per decade since the 1970s); some increase in traffic already observed, including cruise and recreational traffic;
  - Offshore oil and gas exploratory traffic may increase in previously ice-covered ocean areas;
  - Rapidly melting glaciers causing navigation problems (such as Columbia Glacier during the first part of its retreat);
  - More activities resulting in higher risk of marine accidents and oil/fuel spills in Bering Sea, Chukchi Sea, and Arctic Ocean.
- **Potential Future ocean transportation:**
  - Even greater opening of Arctic Ocean and Bering Sea for longer periods for shipping and marine activities;
  - increased navigation and safety issues and concerns.

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**EA TWG Task:**  
*Review and Expand List of Impacts,  
Vulnerabilities, Opportunities*

Draft of initial list to be posted at:  
[http://www.akclimatechange.us/Economic\\_Activities.cfm](http://www.akclimatechange.us/Economic_Activities.cfm)



**Part 3:**  
**Catalog of State Adaptation  
Activities/Policies**

Focus on policy options and actions that will help Alaska adapt, economically, to new conditions from climate change: proactively minimize economic hardship, maximize opportunities and cushion inevitable shifts

## **Catalog of State Adaptation Actions/Policies**

- Adaptation actions are local, while mitigation actions are global
- Actions considered by a wide variety of US states provide a starting means to consider Alaska actions
- Preliminary Alaska analyses and needs for adaptation have also been conducted and assessed
- Many actions provide GHG reductions coincidentally or as a co-benefit
- Adaptation activities cover all economic sectors and a wide variety of implementation mechanisms

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**See Draft Initial Catalog in Separate  
File on the Website**

[http://www.akclimatechange.us/Economic\\_Activities.cfm](http://www.akclimatechange.us/Economic_Activities.cfm)

## **Catalog of Alaska Adaptation Actions/Policies**

- Initial list developed by National Commission on Energy Policy, other states, and Center for Climate Strategies
- Existing, planned and proposed state level actions
- Wide variety of impacts and implementation mechanisms
- AAG and TWG's will add new potential actions
- Starting place for identification of AAG priorities

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### ***EA TWG Task:***

Review, expand and present to the  
AAG a Catalog of Alaska Adaptation  
Actions/ Policies

## Future Discussion: Select Adaptation Actions/Policies Based on the Following Criteria

- Benefits and Effectiveness
- Costs
- Feasibility
- System Vulnerability – timing, certainty, capacity, economic and social significance

*(Exactly how these will be used is still being discussed)*

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## Future Discussion: Develop Action/Policy Options in Detail



Policy Description: \_\_\_\_\_

Policy Design: \_\_\_\_\_

- Goals:
- Timing:
- Coverage of Parties:

Implementation Methods: \_\_\_\_\_

Related Policies/Programs in Place: \_\_\_\_\_

Estimated GHG Savings and Costs per tCO<sub>2</sub>e: \_\_\_\_\_

- Data Sources:
- Quantification Methods:
- Key Assumptions:

Key Uncertainties: \_\_\_\_\_

Additional Benefits and Costs: \_\_\_\_\_

Feasibility Issues: \_\_\_\_\_

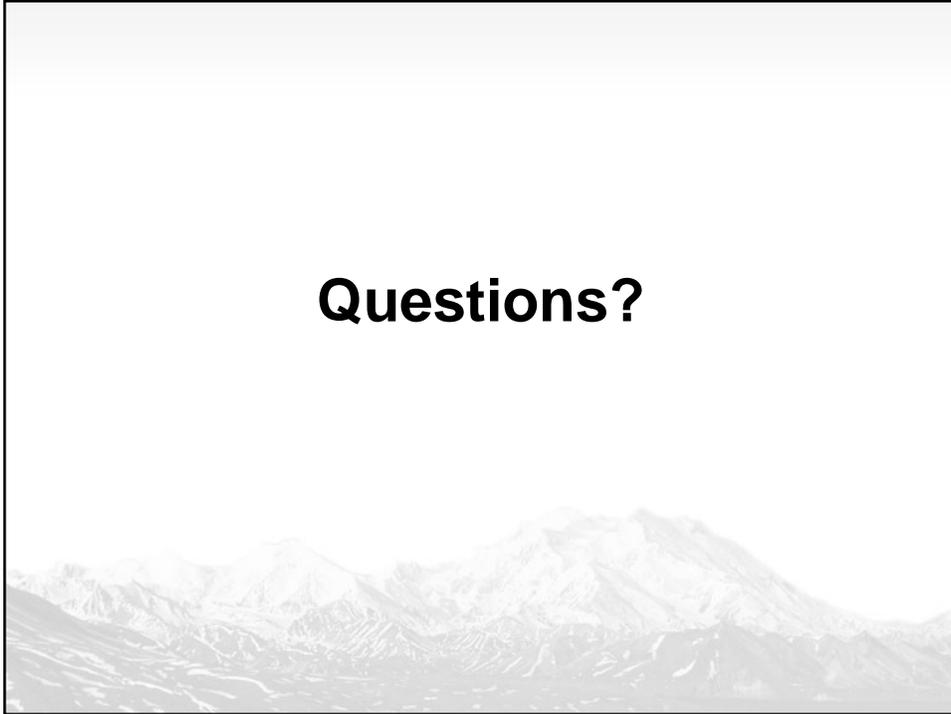
Status of Group Approval: \_\_\_\_\_

Level of Group Support: \_\_\_\_\_

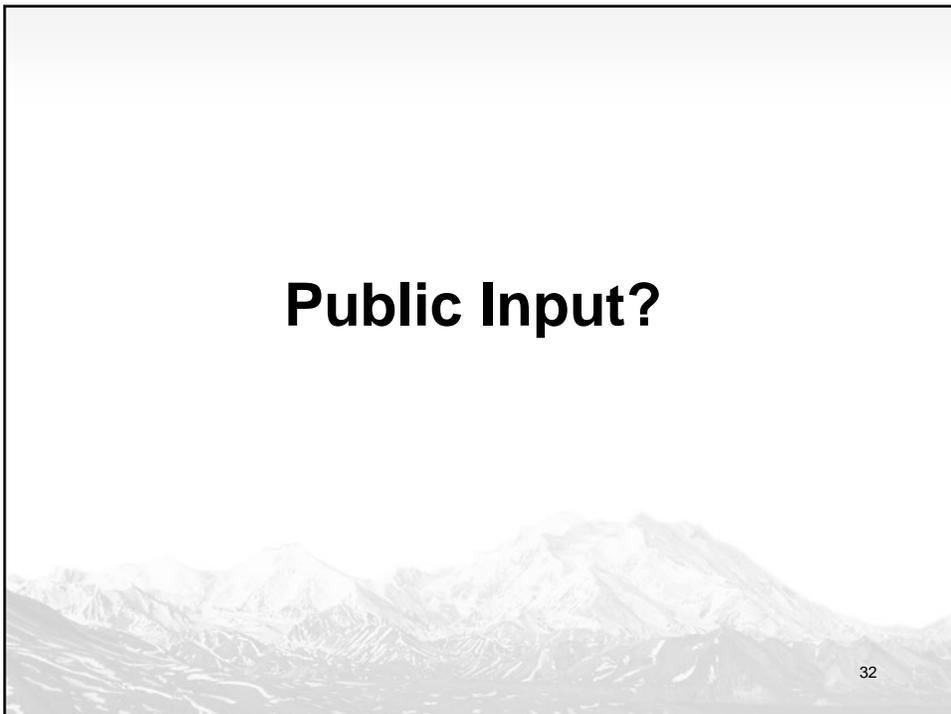
Barriers to Consensus: \_\_\_\_\_

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**Questions?**



**Public Input?**



## **EA TWG Next Steps**

- Between now and next call (July 27, 8-10AM)
  - Review and revise climate change impact and vulnerability assessment
  - Review the catalog of adaptation actions and policies – modify, add, delete
- Present above at July 16th AAG meeting

