Rural Resilience and Adaptation Sub-Committee
VT Climate Council

Report on Objective 2 / Task 2 – Rural Transportation Resilience
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Chris Cochran, ACCD/DHCD
Bronwyn Cooke, ACCD/DHCD
Catherine Dimitruk, Northwest RPC
Ben Rose, VEM
Joe Segale, VTrans
Reframe the Question

<table>
<thead>
<tr>
<th>Original Question</th>
<th>Reframed</th>
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<tbody>
<tr>
<td>Develop recommendations for fortifying transportation infrastructure in rural communities.</td>
<td>Develop strategies to improve the resilience to climate change of the transportation system in rural communities.</td>
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<tr>
<td>How it Happens</td>
<td>Threat</td>
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| Discrete event, immediate impacts | Flooding - erosion and deposition | - Significant physical damage  
- Some to total loss of function/connectivity  
- Short to long-term duration  
- High cost to repair | x | x | | | | | |
| | Flooding – inundation | - Minor physical damage  
- Short-term loss of function/connectivity  
- Low cost to repair | | x | x | | | | | |
| | High winds | - Minimal physical damage  
- Short-term loss of function/connectivity  
- Low cost to repair | | | | | x | x | |
| | More frequent freeze/thaw cycles | - Minor functional impacts  
- Multiple mud seasons  
- Reduced safety  
- Reduced life span of roads, bridges, sidewalks, multi-use paths = increased capital costs  
- Increased annual maintenance costs | | | | | | x | x | |
| | More frequent and intense rain (not declared disaster) | - Degrades condition of gravel roads  
- Increased water quality impacts  
- More involved and costly stormwater practices  
- Increased annual maintenance cost | | | | x | x | x | |
| | Hotter summers, larger temperature ranges summer to winter | - Softer pavement/more rutting  
- Colder pavement/more cracking  
- Minor functional impacts  
- Some safety impacts  
- Increased annual maintenance costs  
- Reduced life span of roads, bridges, sidewalks, multi-use paths = increased capital costs | | | | x | x | |
| | Climate Change  
Migration/Increased Development | - Rural residential sprawl  
- More traffic and congestion  
- Safety impacts as traffic increases on local roads  
- More wear and tear on local roads  
- Increased demand for services  
- More households auto dependent results in less resilience system | | | | | | x | |

Others??
Transportation Resilience and Adaptation Pathways

- **Pathway 1:** Vermont’s (rural?) transportation system will be resilient to major disruptions and incremental impacts caused by climate change.

- **Pathway 2:** VT’s transportation system will transform to support the actions necessary to reduce greenhouse gases.
Pathway 1: Vermont’s (rural?) transportation system will be resilient to major disruptions and incremental impacts caused by climate change.

Existing strategies to continue and improve:

- Apply emergency management practices to reduce the response and recovery time resulting from major disruptions.
- Identify and proactively mitigate transportation infrastructure and services that are highly vulnerable to damage and are critical to providing mobility and access.
- Consider the strategic abandonment of vulnerable, non-critical infrastructure.
- Incorporate flood resilient design standards into the preservation, rehabilitation and reconstruction of existing transportation infrastructure (asset management).
- Design and locate new transportation infrastructure to be resilient to flooding and other impacts.
- Design infrastructure for an increasing range of high and low temperatures, freeze/thaw cycles, and mixed precipitation (maximize life span, reduce annual maintenance and operational costs).
- Provide sufficient funding for the cost of improving infrastructure resilience.
- Develop a multi-modal (transit, rail, bike/ped), smart transportation network to provide access and mobility following system disruption.

New strategies to develop:

- Support remote work and tele-services to reduce the impact of travel disruptions.
- Provide a transportation system to meet greater mobility and access needs if population growth accelerates due to climate change migration.
Pathway 2: VT’s transportation system must transform to support the actions necessary to reduce greenhouse gas emissions.

- Provide a transportation system that supports a land use pattern that requires fewer vehicles miles travelled.
- Incorporate GHG reduction goals and CAP strategies and actions in the transportation planning and project development process.
- Provide flexibility as transportation projects and services are designed and implemented to accommodate future transformations.