



Risks

Stormwater flooding

Projected change:

Increase in the number of extreme precipitation events

**Impact:**

Stormwater flooding (recurring)

**Consequences:**Health and lifestyle

- Inconvenience (transport disruption)

Economy:

- Disruption to economic activities, loss of output
- Transport delays (supplies, products)

Environment

- Decrease water quality
- Bank erosion, channel morphology, habitat

Property, infrastructure and services

- Damage to property and infrastructure
- Interruption to lifelines (water, sewer)
- Cost to town

Avalanche

Projected change:

Less precipitation falling as snow; warmer winter temperatures; increased temperature variability

**Impact:**

Avalanche (recurring)

**Consequences:**Health and lifestyle

- Inconvenience (road closures)

Economy:

- Decline in economic output

Environment

- Impact (creation) to wildlife habitat, forest

Property, infrastructure and services

- Reputation (outside stakeholders, perceived risk)

Hail

Projected change:

Increase in intensity of summer storms

**Impact:**

Hail (recurring)

**Consequences:**Health and lifestyle

- Public safety, potential injuries
- High stress levels and reduced quality of life

Economy:

- Damage to crops
- Higher insurance costs
- Potential benefit for restoration and repair businesses

Property, infrastructure and services

- Damage to property (buildings, gardens, vehicles, etc.) and infrastructure
- Interruption to lifelines (power, communications)

Lightning

Projected change:

Increase in intensity of summer storms

**Impact:**

Lightning (recurring)

**Consequences:**Health and lifestyle

- Public safety

Economy:

- Disruption to economic activity (power outages)

Environment

- Damage trees

Property, infrastructure and services

- Interruption to lifelines (power)

Wildfire

Projected change:

Warmer summer temperatures, more periods of extreme heat, less summer precipitation, increase in intensity of summer storms (lightning strikes)

**Impact:**

Wildfire (recurring)

**Consequences:**Health and lifestyle

- Public safety
- Smoke inhalation, poor air quality related illnesses
- Loss of visual amenity
- Mushroom picking opportunities

Economy:

- Decline in economic output (reduction in tourists, impact on agriculture)

Environment

- Impact to, loss of, trees and other wildlife habitat and ecosystems

Property, infrastructure and services

- Damage to property and infrastructure
- Interruption to lifelines (power, communications)
- Demands on emergency services (evacuations), firefighting costs

River/creek flooding

Projected change:

Increase in the number of extreme precipitation events, earlier peak stream flow, more spring precipitation as rain

**Impact:**

River/Creek flooding (recurring)

**Consequences:**Health and lifestyle

- Public health and safety, including stress and anxiety
- Contamination of water supply

Economy:

- Impact on reputation – loss of tourism
- Disruption to economic activities, loss of output

Environment

- Damage to habitat, bank erosion

Property, infrastructure and services

- Damage to, loss of, property and infrastructure (roads, buildings, etc.)
- Interruption to lifelines (power, water, sewer)
- Demands on emergency services, cost to town
- Evacuations

Wind storm / tornado

Projected change:

Increase in intensity of summer storms

**Impact:**

Wind storm / tornado (recurring)

**Consequences:**Health and lifestyle

- Public safety
- Increased stress and quality of life impact

Economy:

- Disruption to economic activities, loss of output (fallen trees, power lines, loss of lifelines)
- Damage to agriculture crops
- Increased insurance costs

Environment

- Damage to, loss of, trees

Property, infrastructure and services

- Damage to property and infrastructure
- Interruption to lifelines (power, communications)
- Demands on emergency services, costs to town

Water supply shortage

Projected change:

Warmer summer temperatures, less summer precipitation, reduced extent of glaciers

**Impact:**

Water supply shortage (recurring)

**Consequences:**Health and lifestyle

- Inconvenience for residents (water bans)
- Deterioration in water-based recreation
- Competition between residents, industry and other consumers

Economy:

- Decline in economic output for water reliant businesses

Environment

- Deterioration in natural water sources, water quality and wetlands
- Warmer water temperatures and impact on fish habitat

Property, infrastructure and services

- Interruption to lifelines (water supply)
- Costs to town (water treatment)
- Increased landscaping costs (more watering)

Water quality

Projected change:

Increase in number of extreme precipitation events

**Impact:**

Water quality (sediment loading – turbidity) (recurring)

**Consequences:**Environment

- Deterioration in water quality, aquatic ecosystem

Property, infrastructure and services

- Costs to town (water treatment)

Frozen – damaged water lines

Projected change:

Less precipitation falling as snow; reduced winter snowpack

**Impact:**

Frozen - damaged water lines (recurring)

**Consequences:**Health and lifestyle

- Inconvenience

Economy:

- Disruption to businesses
- Construction delays

Property, infrastructure and services

- Interruption to lifelines (water supply, sewer)
- Costs to town (repairs, replacement)

Heat stress

Projected change:

More periods of extreme heat

**Impact:**

Heat stress on vulnerable populations (recurring)

**Consequences:**Health and lifestyle

- Public health (heat stress, sleep disturbance), including stress and anxiety

Property, infrastructure and services

- Demands on emergency services

Increased water demand

Projected change:

Warmer temperatures, more periods of extreme heat

**Impact:**

Increase water demand (households, businesses, municipalities) (trending)

**Consequences:**

Property, infrastructure and services

- Demands on services
- Increased costs (abstraction, water treatment, supply)

Decline in winter recreation opportunities

Projected change:

Less precipitation falling as snow; warmer winter temperatures; reduced winter snowpack

**Impact:**

Decline in winter recreation opportunities (trending)

**Consequences:**Health and lifestyle

- Stress and anxiety, decline in quality of life
- Public health – loss of exercise opportunities

Economy:

- Decline in economic output, selected businesses
- Job losses, selected sectors
- Potential reduction in property values (out migration)
- Impact on reputation – loss of tourism visits

Heavy snowfall / blizzard

Projected change:

Increased in extreme precipitation events in winter

**Impact:**

Heavy snowfall / blizzard (recurring)

**Consequences:**Health and lifestyle

- Public health (snow loading and accidents)

Economy:

- Disruption to economic activities / transport disruption

Environment

- Stress on wildlife

Property, infrastructure and services

- Interruption to lifelines (power, water)
- Costs to town (clearing, clean up)
- Property damage (snow loading and collapse)
- Demand on emergency services

Freeze-thaw cycles

Projected change:

Increased variability of temperatures

**Impact:**

Freeze – thaw cycles (recurring)

**Consequences:**Health and lifestyle

- Public health (injuries)
- Reduced recreational opportunities

Economy:

- Disruption to economic activities (transportation disruption)

Property, infrastructure and services

- Increased road maintenance costs (sanding)

Human contact with wildlife

Projected change:

Shifting ecosystems, upland, reduced alpine tundra

**Impact:**

Human contact with wildlife (recurring)

**Consequences:**Health and lifestyle

- Public health (potential for fatalities, injuries)
- Viewing opportunities

Environment

- Destroy and remove wildlife from town

Economy

- Impact on reputation – loss of tourism visits

Property, infrastructure and services

- Costs to town

Increase in vector-borne diseases

Projected change:

Less periods of extreme cold spells, warmer temperatures

**Impact:**

Increase in vector-borne diseases (trending)

**Consequences:**Health and lifestyle

- Public health, illnesses and diseases

Economy:

- Loss of economic activity, tourists staying away
- Forgone productivity

Environment

- Loss, stress, wildlife

Infestation of pests / invasive species

Projected change:

Less periods of extreme cold spells, warmer temperatures

**Impact:**

Infestation of pests / invasive species (recurring)

**Consequences:**Health and lifestyle

- Visual quality impact on forests
- Injuries or fatalities from new dangerous animals (e.g. killer bees)

Economy:

- Loss of tourism
- Impact on forestry sector
- Crop destruction

Environment

- Forest loss, habitat loss
- Native species displacement

Freezing rain / ice storm

Projected change:

Warmer winter temperatures and increased proportion of winter precipitation falling as rain

**Impact:**

Freezing rain / ice storm (recurring)

**Consequences:**Health and lifestyle

- Injuries (slips and falls)
- Dangerous roads (accidents and fatalities)

Economy:

- Disruption to economic activities / transport disruption
- Repair and restoration costs

Property, infrastructure and services

- Stress on emergency service personnel
- Interruption to lifelines (power, water)
- Property damage (ice loading and collapse)

Dry soil subsidence

Projected change:

Warmer summer temperatures and reduced soil moisture

**Impact:**

Dry soil subsidence (recurring)

**Consequences:**

Property, infrastructure and services

- Building and infrastructure (including roads) failure / collapse
- Damage / disruption to underground utilities

Loss of wetlands

Projected change:

Shifting ecosystems, warmer summer temperatures, or reduced soil moisture

**Impact:**

Loss of wetlands (trending)

**Consequences:**Health and lifestyle

- Loss of aesthetic quality of landscape

Economy

- Increased cost of irrigation
- New opportunities for land use

Environment

- Loss of natural water sources
- Ecological impacts

Property, infrastructure and services

- Increased water supply / infrastructure costs
- Potential loss of

Deforestation

Projected change:

Shifting ecosystems (toward grassland-dominated)

**Impact:**

Deforestation (trending)

**Consequences:**Health and lifestyle

- Reduction in air quality
- Change in landscape appearance

Environment

- Less water production and carbon dioxide uptake

Increased cooling costs

Projected change:

Shifting ecosystems (toward grassland-dominated)



Impact:

Increased cooling costs (trending)



Consequences:

Economy

- Financial costs to municipality, residents and businesses

Reduced quality and supply of local timber

Projected change:

Shifting ecosystems (toward deciduous forest and Parkland)

**Impact:**

Reduced quality and supply of local timber (trending)

**Consequences:**Economy

- Increased haul distances and operation costs for forestry
- Increased opportunities for biofuel

Transportation / access disruption

Projected change:

Warmer winters and shorter ice covered period on rivers

**Impact:**

Transportation / access disruption (recurring)

**Consequences:**Health and lifestyle

- Potential loss of access to/from communities and medical facilities – increased isolation

Economy

- Increased transportation time and cost for essential supplies such as bulk goods and fuel

Crop and forage loss

Projected change:

Warmer winter temperatures (loss of snow cover) and more extreme heat

**Impact:**

Crop and forage loss (recurring)

**Consequences:**Health and lifestyle

- Livelihood impacts

Economy

- Loss of economic activity, crop loss

Increased stress on wildlife

Projected change:	Warmer winter temperatures and lack of snow
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Impact:	Increased stress on wildlife (trending)
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Consequences:	<p><u>Health and lifestyle</u></p> <ul style="list-style-type: none">• Impact on hunting, wildlife viewing and tourism opportunities <p><u>Environment</u></p> <ul style="list-style-type: none">• Impact on ungulate winter survival
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Opportunities

Increase in summer recreation opportunities

Projected change:

Less precipitation falling as snow; warmer spring and fall temperatures; reduced winter snowpack

**Impact:**

Increase in summer season recreation opportunities (trending)

**Consequences:**Health and lifestyle

- Recreation / amenity benefits for residents – increased quality of life

Economy:

- Increase in economic output, selected businesses
- Jobs, selected businesses

Property, infrastructure and services

- Increased use of public services and facilities

Increase in food growing opportunities

Projected change:

Warmer temperatures, spring and summer

**Impact:**

Increase in food growing opportunities (trending)

**Consequences:**Health and lifestyle

- Amenity benefits
- Increased access to local produce
- Community growth and development

Economy:

- New crops / income sources for local farmers
- Increased economic growth, more jobs

Property, infrastructure and services

Reduction in winter snow and ice management

Projected change:

Less precipitation falling as snow

**Impact:**

Reduction in winter snow and ice management (trending)

**Consequences:**Health and lifestyle

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Economy:

- :

Environment

- :

Property, infrastructure and services

- Reduced demand on services (snow clearing and maintenance)
- Cost savings

Reduced energy and heat consumption

Projected change:

Warmer temperatures



Impact:

Reduced energy and heat consumption (trending)



Consequences:

Health and lifestyle

- :

Economy:

- Cost savings to residents, businesses

Environment

- Reduction in use of fossil fuels, associated emissions

Property, infrastructure and services

- Cost savings to town

Extended construction season

Projected change:

Warmer temperatures

**Impact:**

Extended construction season (trending)

**Consequences:**Economy:

- Less disruption to economic activity, less transport disruption
- Opportunities for new businesses and economic activities

Property, infrastructure and services

- Cost savings to town
- Lower procurement prices

Increase in winter tourism competitive advantage

Projected change:

Colder temperatures and more snow (relative to other winter tourism destinations)

**Impact:**

Increase in winter tourism competitive advantage (trending)

**Consequences:**Health and lifestyle

- Amenity benefits (spectating)

Economy:

- Increase in economic activity, output
- Jobs

Environment

- :

Property, infrastructure and services

- Reputation

Increased stock grazing opportunities

Projected change:

Shifting ecosystems (toward grassland-dominated)

**Impact:**

Increased stock grazing opportunities (trending)

**Consequences:**Economy:

- Increase in economic activity – increased beef and grain production

Increased crop growth

Projected change:	Warmer temperatures and longer growing season
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Impact:	Increased crop growth (trending)
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Consequences:	<p><u>Health and lifestyle</u></p> <ul style="list-style-type: none">• Livelihood benefits for local farmers <p><u>Economy:</u></p> <ul style="list-style-type: none">• Increase in economic activity – increased crop production
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Increased in crop types

Projected change:

Warmer temperatures and longer growing season

**Impact:**

Increase in crop types (trending)

**Consequences:**Health and lifestyle

- Livelihood benefits for local farmers

Economy:

- Increase in economic activity – new markets for local food
- Opportunity to finish livestock locally