

Infrastructure Summary of Climate Change Vulnerability Issues

| Sector | Issue | Monitoring Data | Vulnerability | Recommendations | Legislation, Governance | Education |
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| Municipal | | | | | | |
| Stormwater Systems | Unexpected Flash Floods, Heavy Rainstorms | 2-5, 10- year return; no longer viable; inadequate, non-existent trend data; scale needs variance (large, small urban, rural) | Water Capacity inadequate, aging systems | Larger Pipes, Ponds, worst case planning | OBC, NBC, ICLR, engineering sector (PIEVC) partnerships, collaboration, improved standards (LEED); development and implementation of master plans for the settlement areas in the Lake Simcoe | Consumer awareness re: conservation, re-use, insurance provisions, safety, home maintenance, system upgrades, climate change impacts |
| Drainage Systems | Unexpected Flash Floods, Heavy Rainstorms, permeability, new development | | Surface Permeability, System capacity, runoff pollution, aging systems | Permeable surfaces, larger ponds, improved systems (innovative technology) | | |
| | Flooding – insurance limits | | Uninsured events, property loss, safety | Partnerships, communications with insurance industry | | |
| Roads, Bridges | Unexpected Flash Floods, Heavy Rainstorms, roads, bridges impassable, | System failure - impermeability, wash-out, mobility, safety, property damage, pollution | Maintenance review, improved systems, permeable surfaces, RWIS and other monitoring systems | | | |
| | Icing | | Safety, property damage, | | | |

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| | | | chemical pollution | | | |
| Utilities | Development, growth pressure, icing, heavy storms, extreme heat, flooding | | System failure – wash-out, severe storms, line sag (heat induced), icing | Planning, coordination among sectors, improved, upgraded systems (LEED), higher standards and greater redundancies | | |
| Buildings | | | | | | |
| Building Code | Building Code does not have specific objectives re: climate change adaptation, structural integrity; environmental protection re: septic systems. | MMAH works with the federal agencies in updating the climatic tables that are in the Code to inform the design of structural and building envelope elements | Current model does not recognize observed trends over the interval period of the data or project future trends based upon climate change assumptions | MMAH has met with ICLR to discuss issues in regard to the protection of new and existing buildings in the face of extreme weather events resulting from climate change. | The next edition of the Building Code, expected at the end of 2011, is under development | Training for building officials, developers, trades |
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| Agriculture | | | | | | |
| Drainage | Unexpected Flash Floods, Heavy Rainstorms | | Drain, culvert capacity; flooding of fields, buildings, property damage | | | Public education for agricultural sector players, farmers, etc. |

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| Field run-off, erosion | Unexpected Flash Floods, Heavy Rainstorms | | Loss of arable land, animals, property damage, potable water pollution (streams, wells) | | | |
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