

ADDRESSING CLIMATE CHANGE

A LOCAL PUBLIC HEALTH APPROACH

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Disclosure Statement

- I have no affiliation (financial or otherwise) with a pharmaceutical, medical device or communications organization.

LOCAL CLIMATE IMPACTS?



The Town of Huntsville declared an emergency at 7 pm on Jan. 09, 2008.



On June 23rd, 2010, an F2 tornado touched down in Midland.



Flooding along the Big East River corridor from Lake Vernon to River Cove.



Tornado caused extensive property damage in a small geographic area...

VULNERABILITY ASSESSMENT

**Increase
Understanding**

**Support
Resilience**

Exposure

Sensitivity

Adaptive
Capacity



VULNERABILITY ASSESSMENT CONSIDERATIONS

Assessment Scope:

- Time span for projections (2020, 2050, 2080)
- Climate Sensitive Vulnerabilities
- Geographic Area



DATA IDENTIFICATION & COLLECTION

External Data

Climate Projections, Census, Literature, Local Survey Data

Internal Surveillance

ER visits, VBD, Water Testing, Foodborne Illness

Stakeholder Engagement

22 Focus Groups
15 Key Informant Interviews

IMPORTANT DEMOGRAPHICS

Age

Children (0-9 years) = 10% of the population
Seniors (65 years+) = 18% of the population

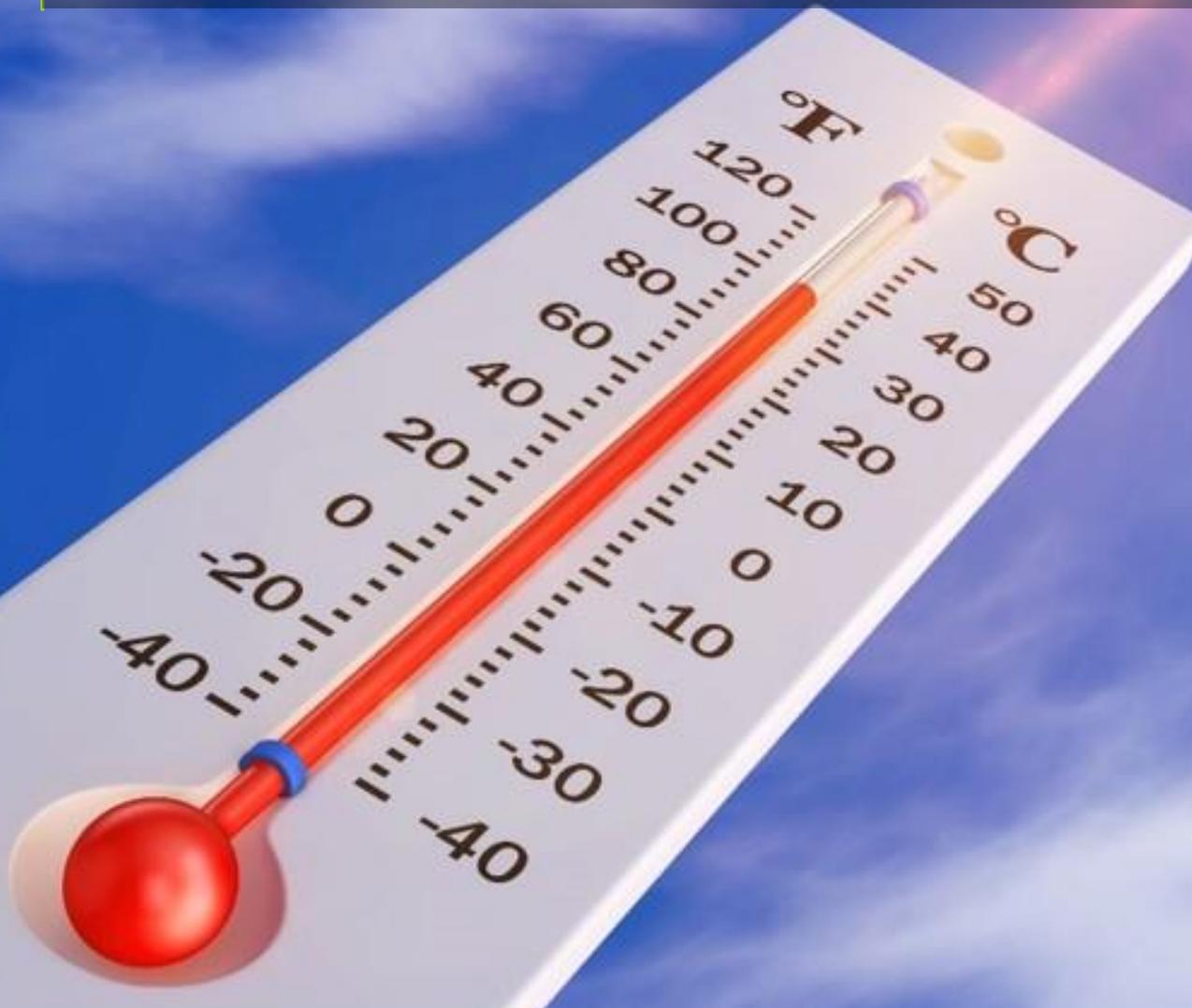
Low Income

12% (59,000) people live on low income

Chronic Conditions

An ageing population = more chronic illness

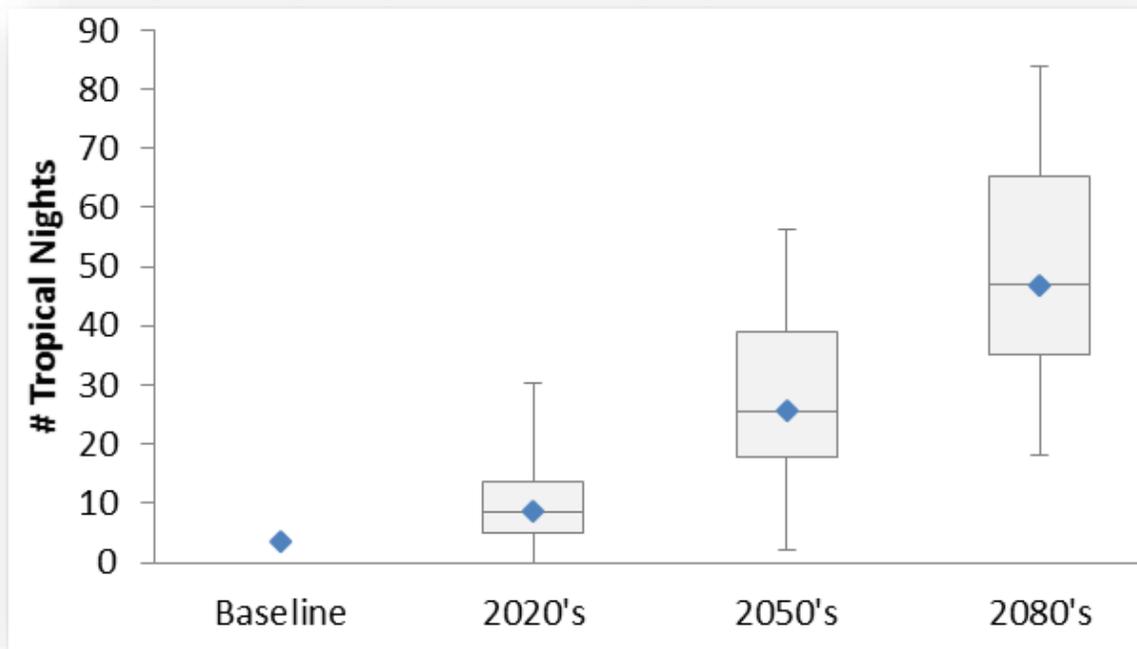
PROJECTED TEMPERATURES



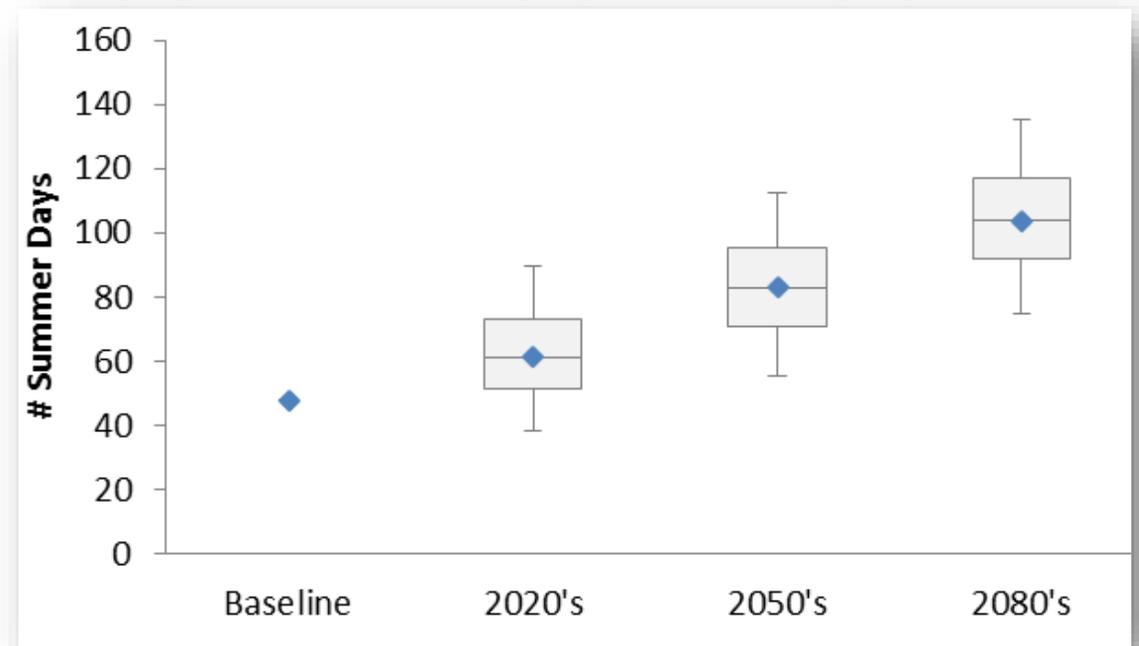
- 1°C (2020s)
- 3.5°C (2050s)
- 5.7°C (2080s)

CLIMATE PROJECTIONS — EXTREME HEAT

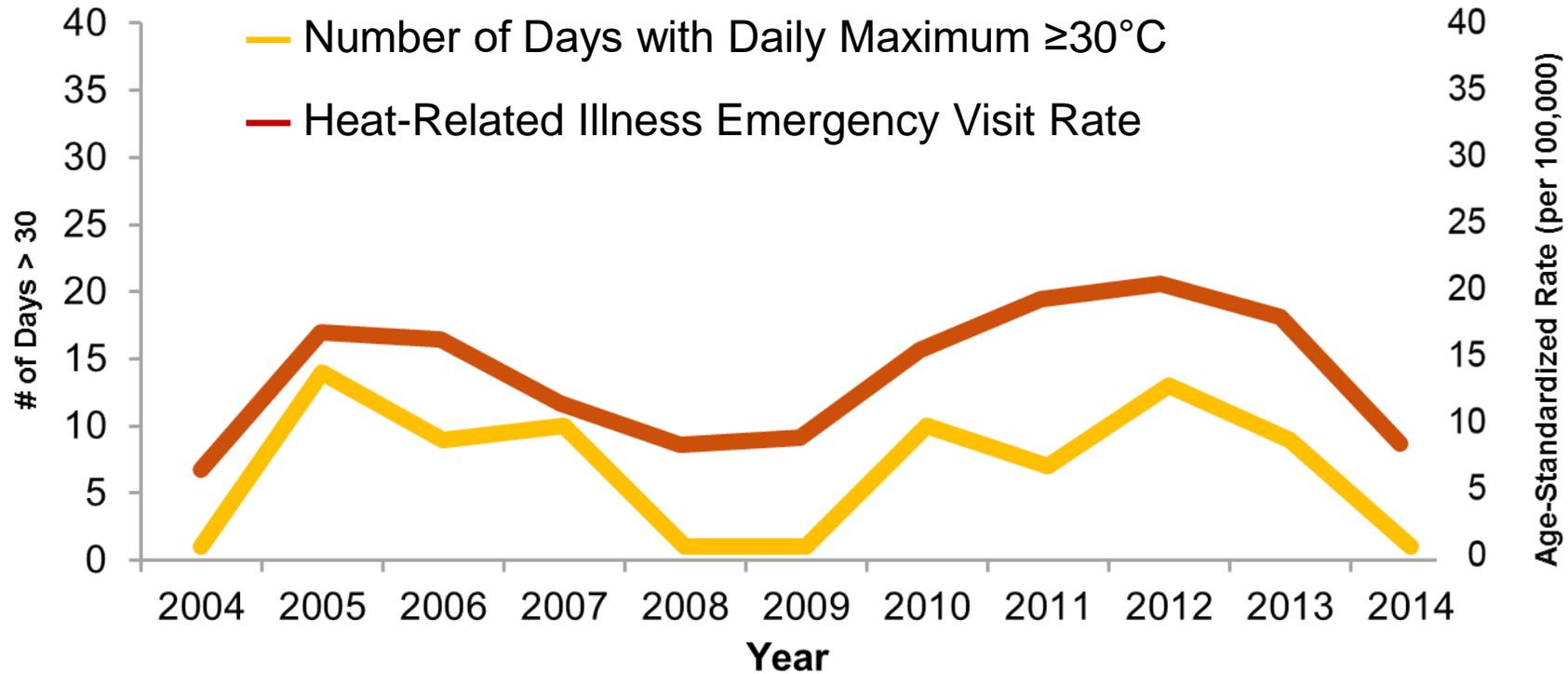
of tropical nights (Southern Region)



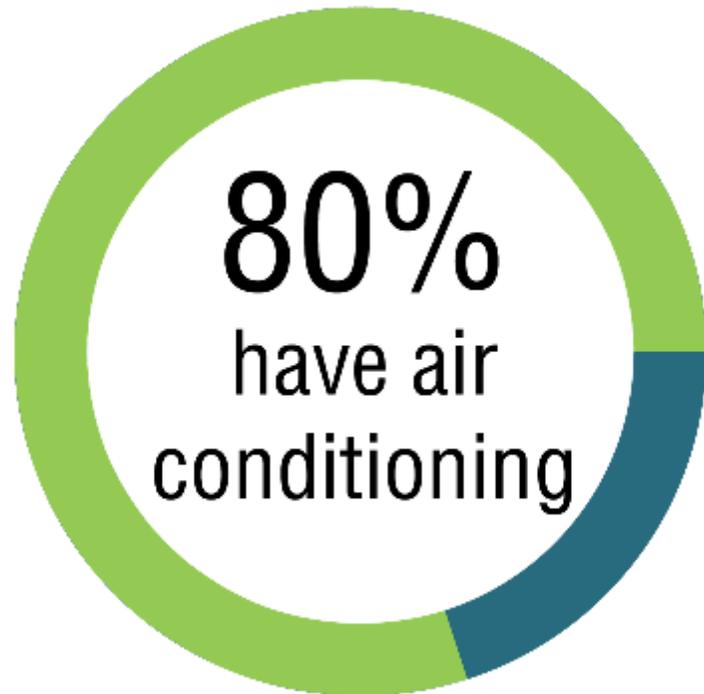
of projected summer days (Southern Region)



HEAT-RELATED ILLNESS



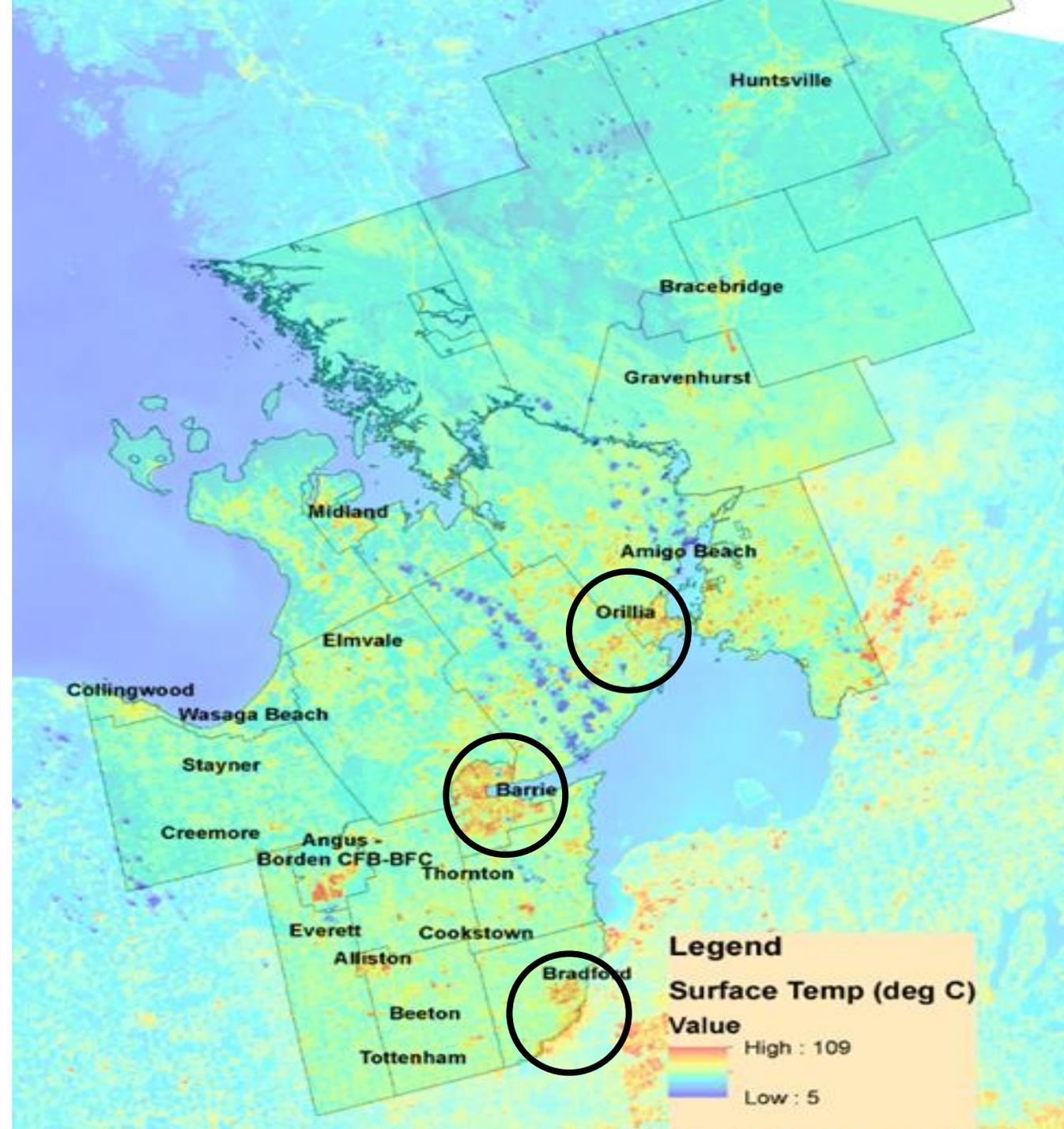
AIR CONDITIONING



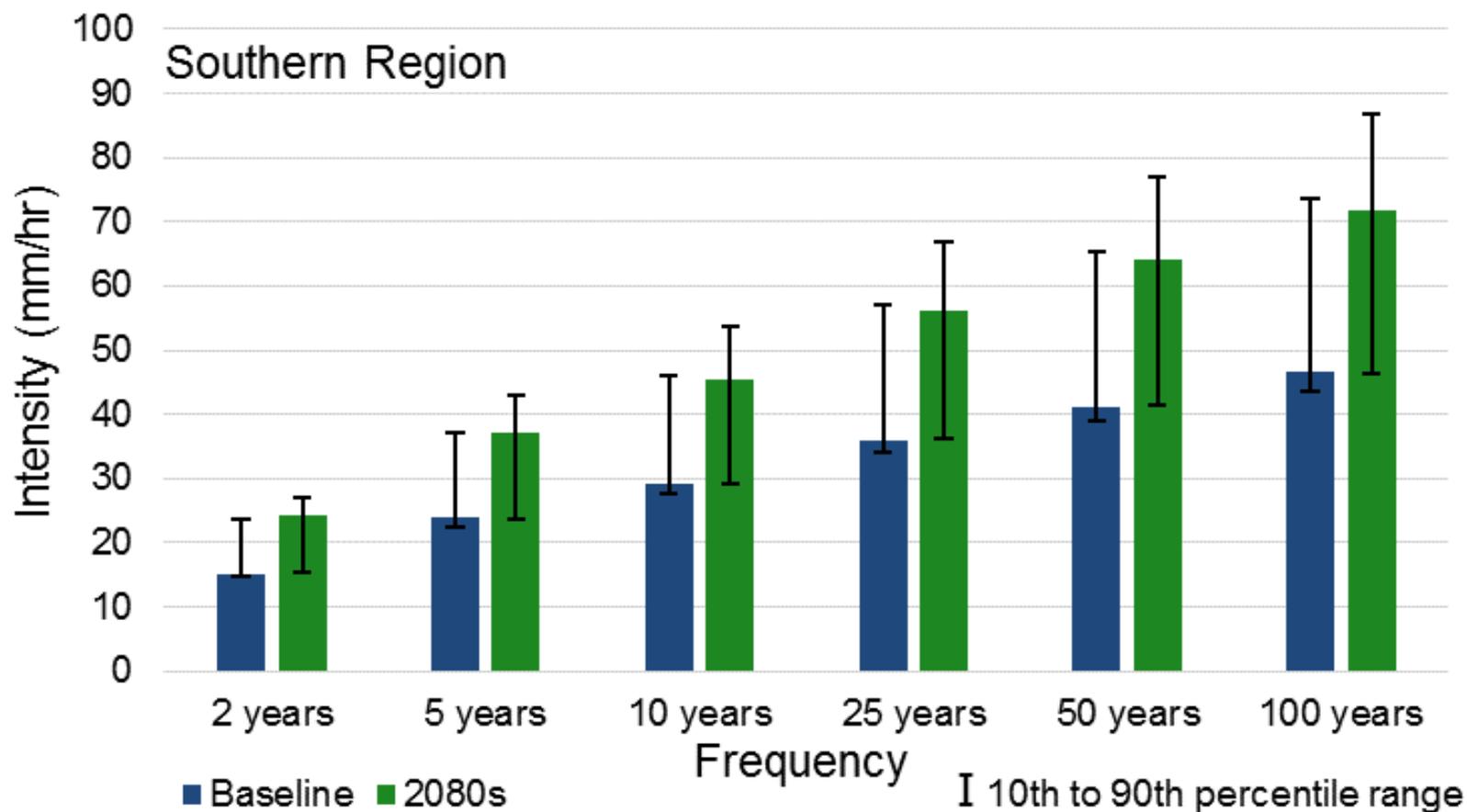
URBAN HEAT ISLAND

Can be reduced by

- installing green roofs
- enhancing urban tree canopy
- decreasing black surfaces



PROJECTED PRECIPITATION



Data Source: Ontario Climate Change Data Portal:
<http://www.ontarioccdp.ca/>; Extracted 30 March 2017.

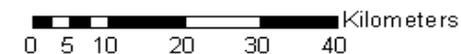
- Increase in annual precipitation levels
- Decrease summer precipitation levels
- Less frequent, more extreme precipitation events

Wildfire Hazard for the District of Muskoka



Legend

- Extreme Wildfire Hazard
- High Wildfire Hazard
- Roads
- Highways
- District of Muskoka
- Simcoe County
- Water



Data Sources: District of Muskoka;
Statistics Canada

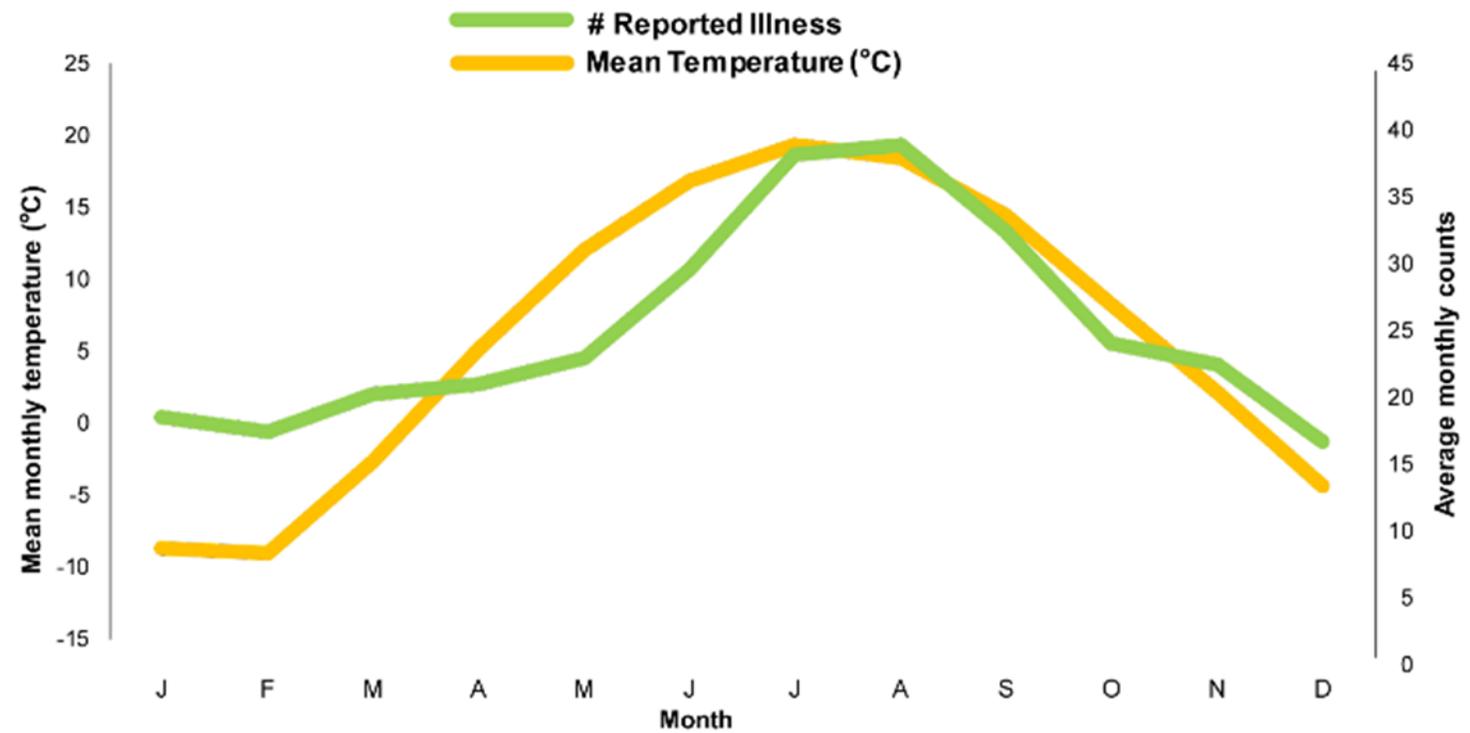
Date create: February 17, 2017

FOOD AND WATERBORNE ILLNESS

- Pathogen survival increases as temperatures rise
- Bacteria better able to colonize
- Overland flows leading to surface water contamination
- Changing human behaviours

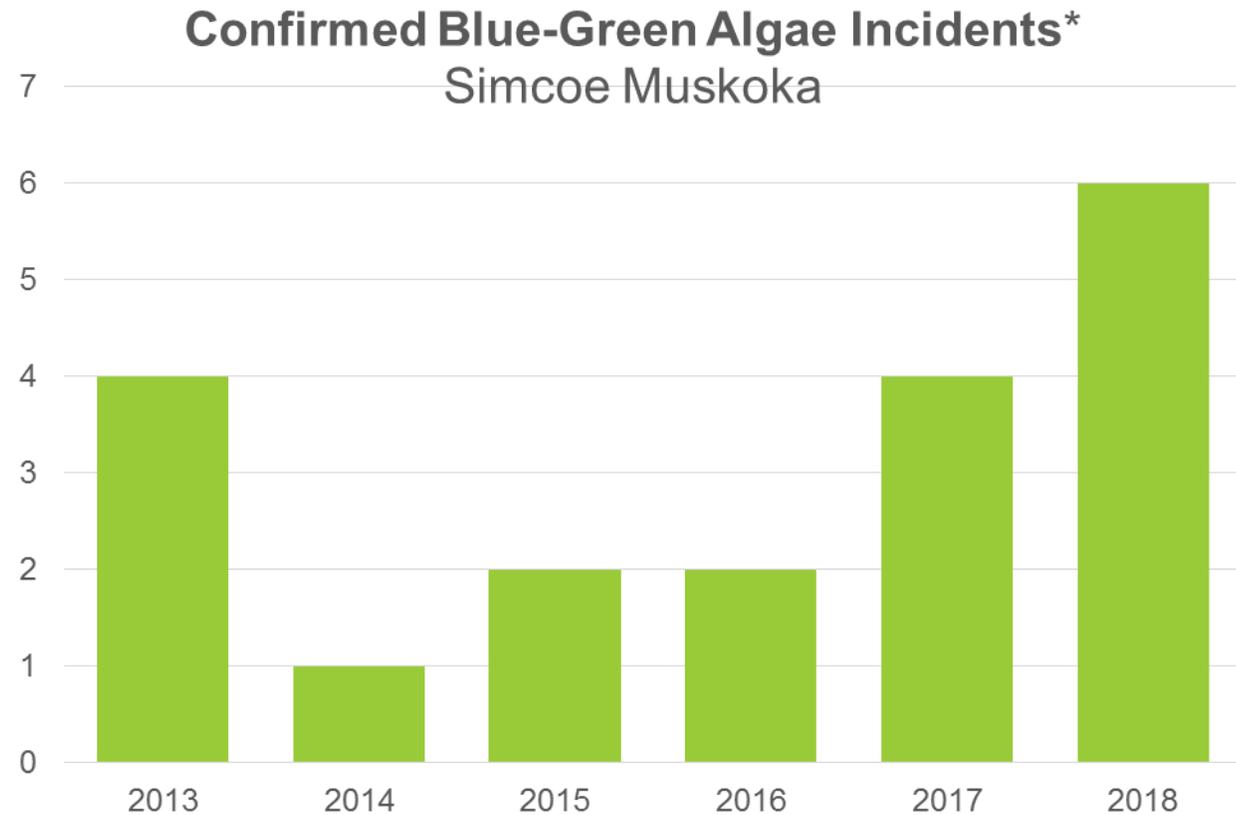
REPORTED ILLNESS

Monthly illness counts compared to mean temperatures



BLUE-GREEN ALGAE

**The number of reported blooms confirmed each year depends on a number of variables (e.g., weather).*



VECTOR BORNE DISEASE

Increased risk of West Nile virus due to:

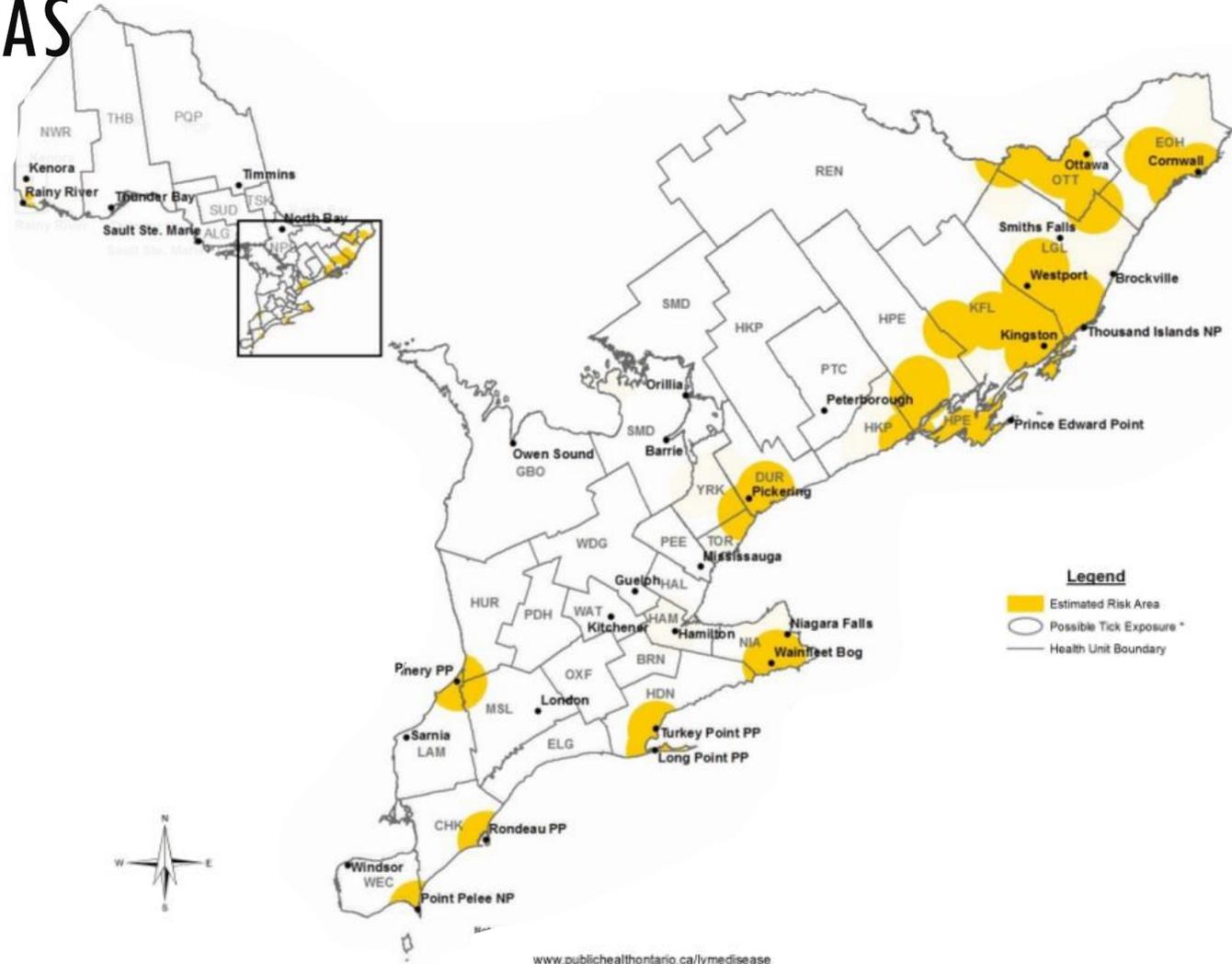
- Enhanced breeding conditions
- Better conditions for viral proliferation

Warmer temperatures supports an increased range of blacklegged ticks



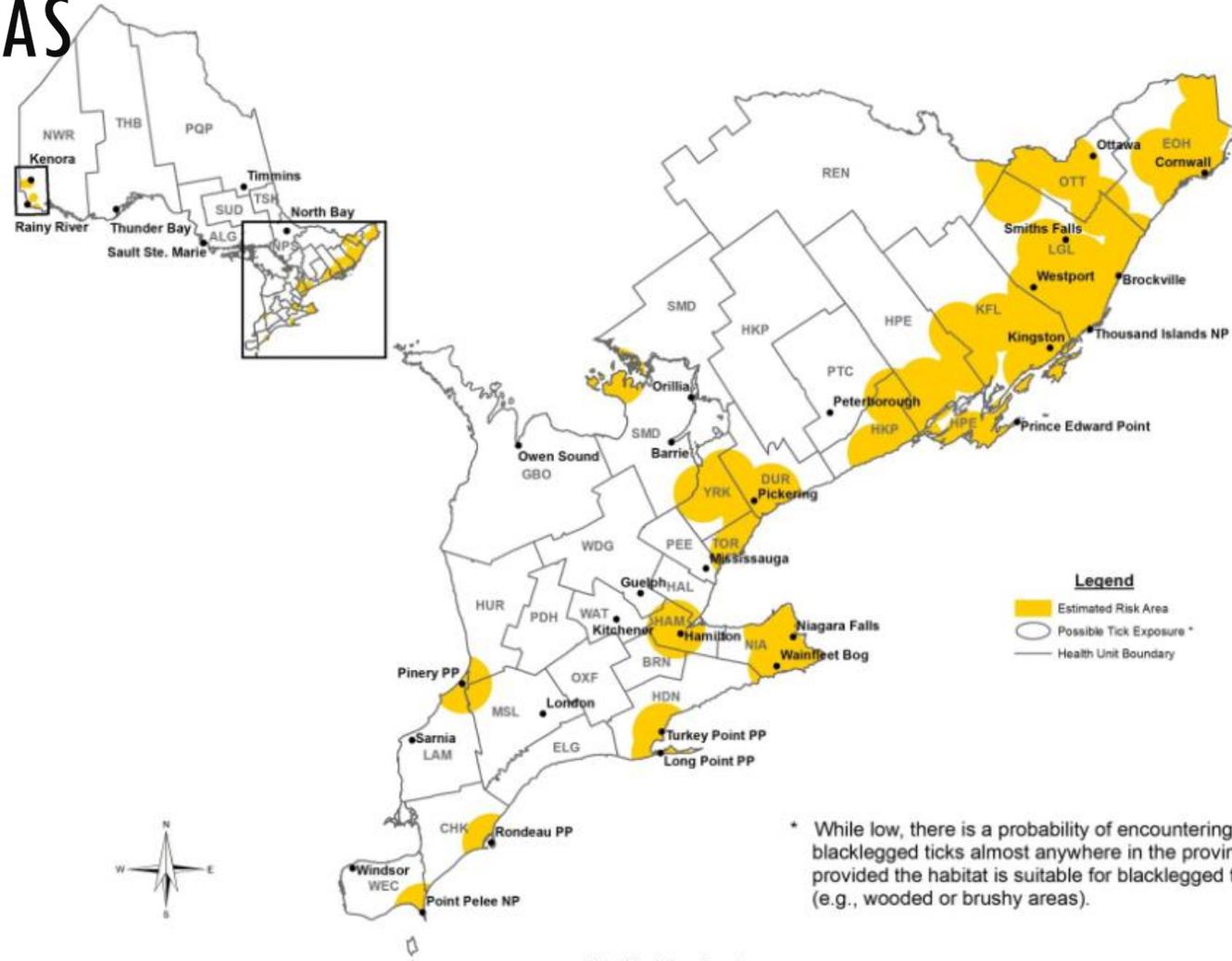
ESTIMATED RISK AREAS

Ontario Lyme Disease Map 2015



ESTIMATED RISK AREAS

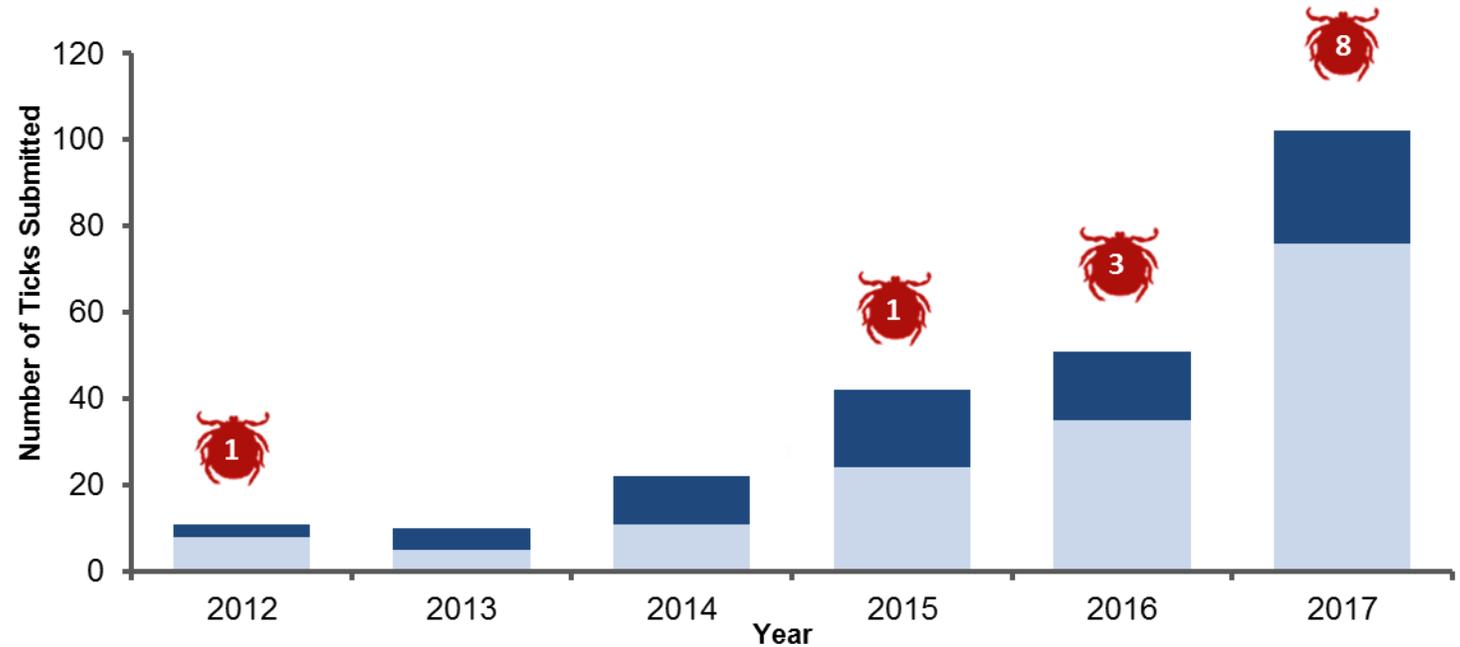
Ontario Lyme Disease Map 2018



TICK SUBMISSIONS

Blacklegged Tick Submissions to Health Unit

- # of Blacklegged Ticks
- # Locally Acquired Ticks
- # Positive for Lyme Disease



Data Sources: Passive Tick Surveillance Spreadsheet, extracted May 8, 2018.

*Ticks are submitted to the health unit by those who have removed it from their (or another person's) body, and are aware to submit it to the health unit for testing. Submitted ticks may originate from anywhere that the submitter has traveled in recent days, and not necessarily from within Simcoe Muskoka. 66% of submitted ticks are acquired in Simcoe Muskoka

VULNERABILITY TO ACTION — WHERE DO WE GO FROM HERE?

Our communities are already doing a lot:

- Active transportation infrastructure
- Education of community and within schools
- Energy conservation within Municipal/organization buildings
- Encouraging the creation of greenspace
- Local food programs
- Electric vehicle charging stations
- Water management
- Anti-idling bylaws



LOCAL PLANS



A HAPPY COINCIDENCE

- Walkable Streets
- Compact Development
- Connected and Open Community
- Mixed-Use Neighborhood Centers
- Mixed-Income Diverse Communities
- Reduced Parking Footprint
- Street Network
- Transit Facilities

Climate
change-
mitigating
design also
improves
health.

- Transportation Demand Management
- Access to Civic and Public Spaces
- Access to Recreation Facilities
- Local Food Production
- Tree-Lined and Shaded Streets
- Neighborhood Schools
- Green Infrastructure and Buildings

HAVE HOPE!

