

Best Practices for the Integration of Climate Change Adaptation and Mitigation into Environmental Assessments

Project prepared for:

Ontario Climate Consortium | Toronto and Region Conservation Authority



Presentation Overview

- Introduction of Project
- Project Goal
- Project Scope
- Project Outcomes & Key Findings
- Recommendations & Next Steps

Climate Change Impacts on Infrastructure

Changes in freeze thaw cycle



pavement cracking

Increased severity of flood events



road wash outs

Increased severity of heat waves



tarmac softening

Increased intensity of windstorms



damage to ancillary infrastructure
(power lines, street lights, sign posts)

Climate Change Impacts on Infrastructure



2005 Finch Road Collapse



2013 Toronto Flood



Opportunity for Proactive Planning

- Increased infrastructure vulnerability. High costs of infrastructure damage due to extreme weather events.



Result of
reactive
planning

- Future provincial investments in infrastructure.



Opportunity for
investment in
proactive
planning

Proactive Planning in the Context of Climate Change

Proactive Planning for climate change requires both

Mitigation

and

Adaptation

Proactive Planning in the Context of Climate Change

Mitigation: reducing the magnitude of climate change through emissions reductions and offsetting.

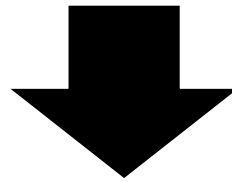
Adaptation: reducing the vulnerability to the impacts of climate change.

Environmental Assessments in Ontario

- Are **proactive** in nature; and,
- Can incorporate **adaptation** and **mitigation**.

Project Goal

Goal of the study was to establish a method to integrate climate change considerations into the Ontario Environmental Assessment process



Create a system for proactive planning in the face of climate change risk

Project Scope

- In order to achieve the project goal, a method needed to be established to integrate climate change considerations into the Ontario Environmental Assessment process.
- **A literature review was conducted as a part of this project. It:**
 - Summarized common themes within the relationships between climate change, project planning and EA's.
 - Identified best practices for integrating climate change considerations into EA's.

Project Scope

- In order to achieve the project goal, a method needed to be established to integrate climate change considerations into the Environmental Assessment process.

- A literature review was conducted

1. What information should be added into the EA process (best practices)

Literature Review

in themes within the relationships between climate change, project planning

- Identified best practices for integration into EA's.

2. How the information can be integrated into the EA process (method of integration)

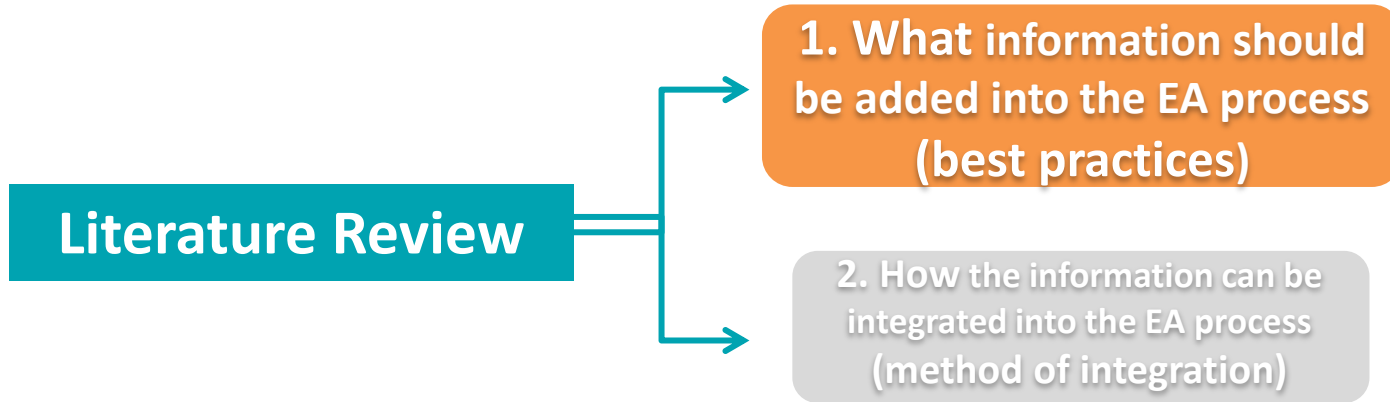
Literature Review

- Explored three levels of relevant literature from international, national and provincial sources
- 63 documents reviewed
- 11 documents discussed the integration of climate change into EA processes:
 - 5 for Canadian federal context
 - 2 for Nova Scotia Provincial EA
 - **0 for Ontario EA process**

Literature Review: Common Themes

1. Relationship between Climate Change and Adaptation / Mitigation.
2. Green Infrastructure and Climate Change.
3. Existing Climate Change Adaptation and Mitigation Policies and Plans.
4. Existing Guidelines for the Integration of Climate Change Considerations into EAs.
5. Challenges and Barriers to the Integration of Climate Change Adaption Mitigation into EAs.
6. The Uncertainty of Climate Change and its Impact on the Successful Integration of Climate Change Considerations into EAs.
7. Importance of Stakeholder Engagement for the Integration of Climate Change Considerations into EAs.
8. Integration of Climate Change Considerations at Project Level and Strategic Level EA.

Literature Review: Best Practices



Best practices for the integration of climate change adaptation and mitigation into EA are: **actions** that **inform when** and **how** a specific climate change consideration can be integrated into the existing regulatory process.

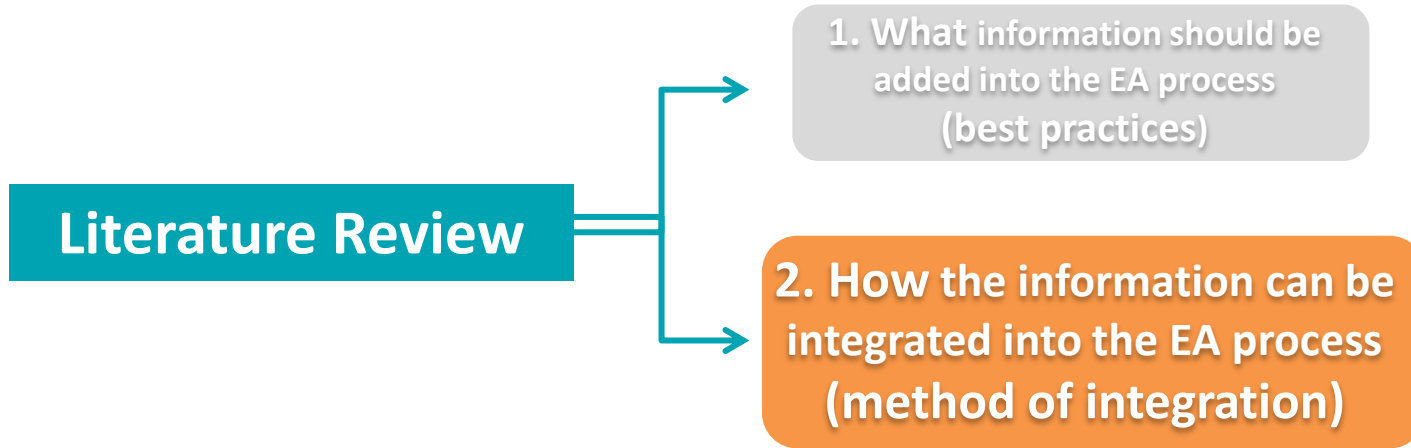
Literature Review: Best Practices

EAs should utilize strategies (e.g. green infrastructure) that can feed into the adaptation **AND** mitigation goals of a particular project.

The extent of adaptation and mitigation measures proposed for any project should depend on current and projected impacts of climate change (along with the extent of uncertainties regarding the impacts).

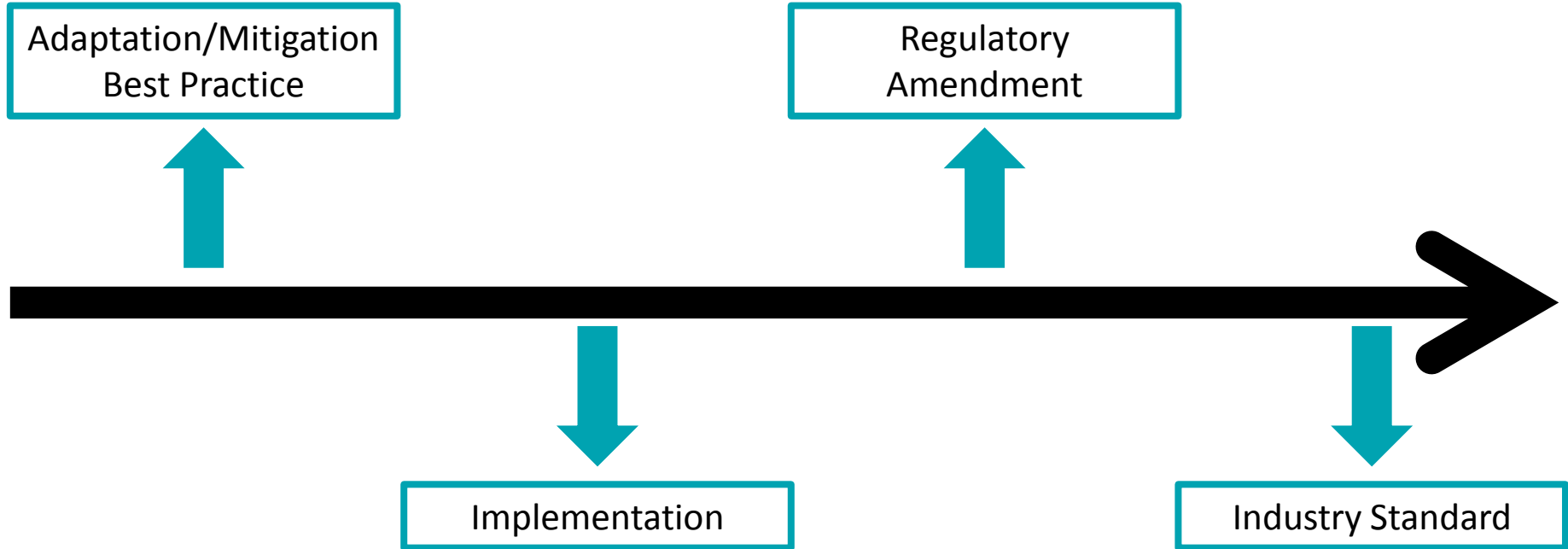
When determining the impacts of a project in the context of climate change, clearly defined qualitative and quantitative data should be provided regarding GHG emissions, over the life-time of a project. The emissions should be compared against regional government or industry reduction targets, not national rates of emissions.

Literature Review: Method of Integration

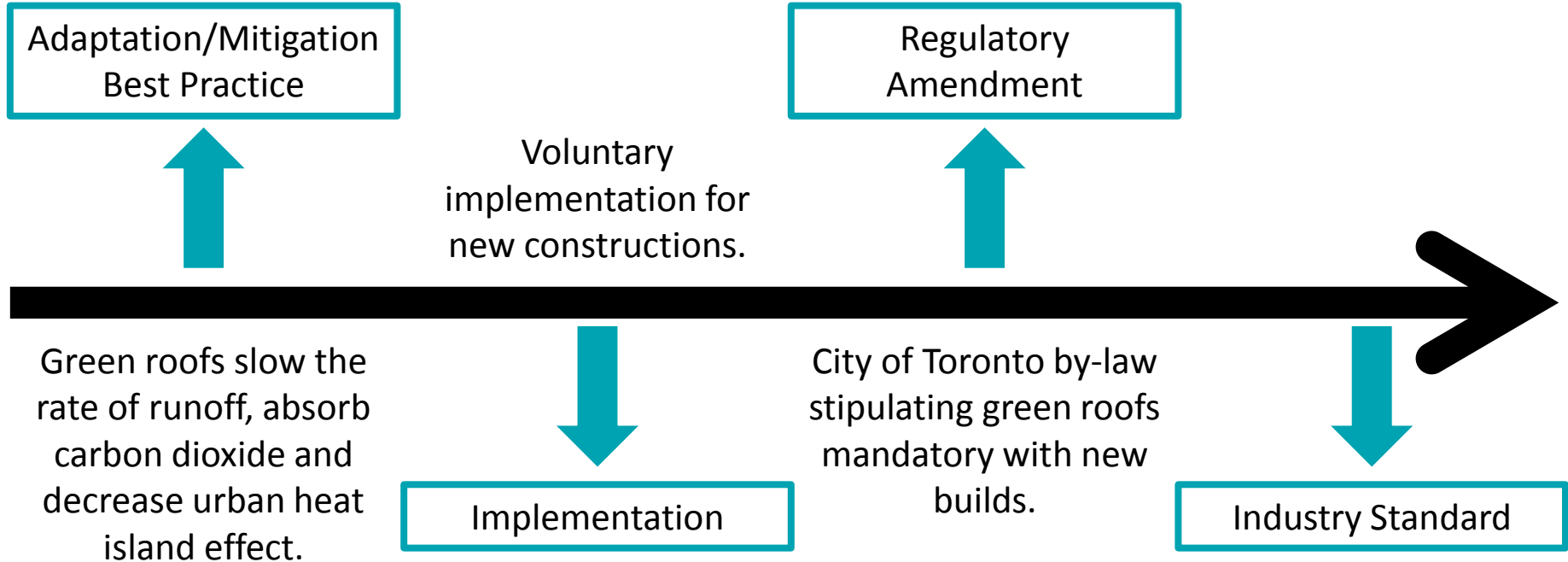


Guidance documents provide the quickest approach to integrating climate change considerations into an EA process.

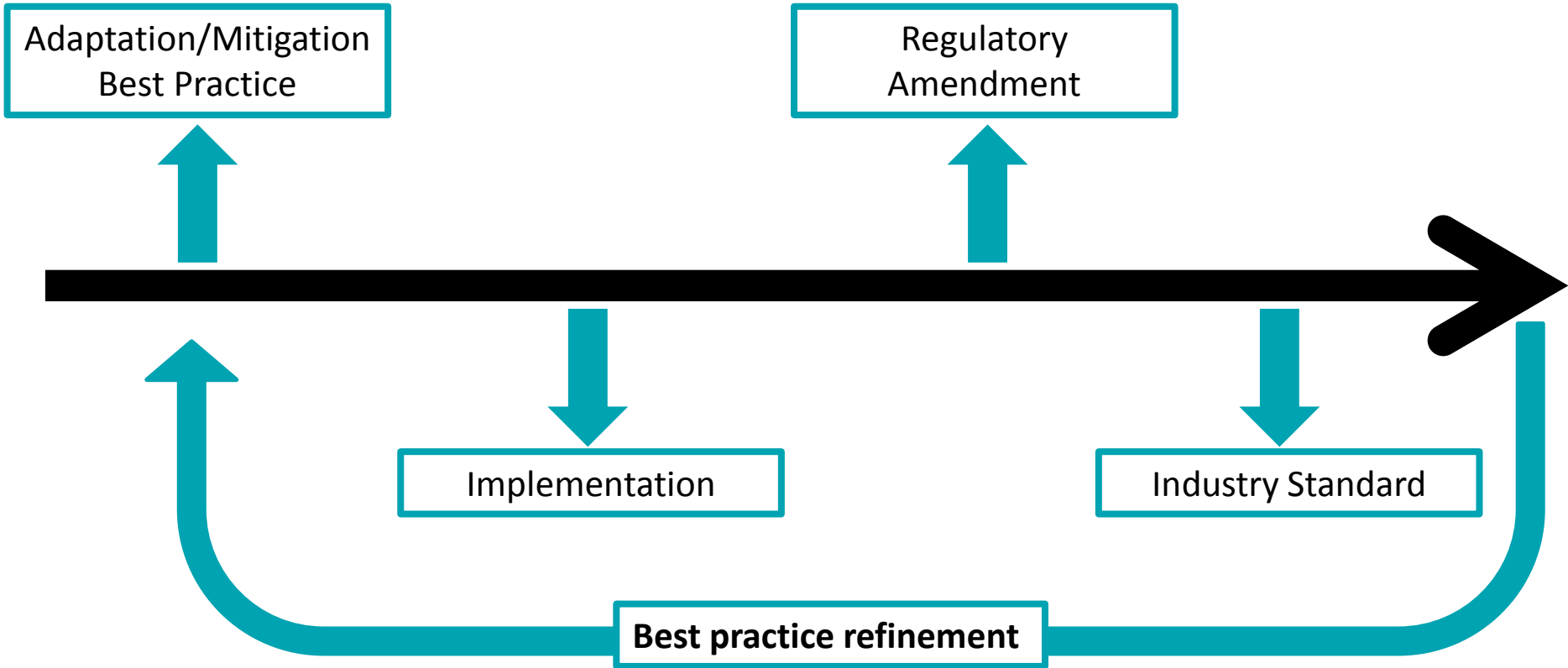
Timeline for Integration of Mitigation/Adaptation



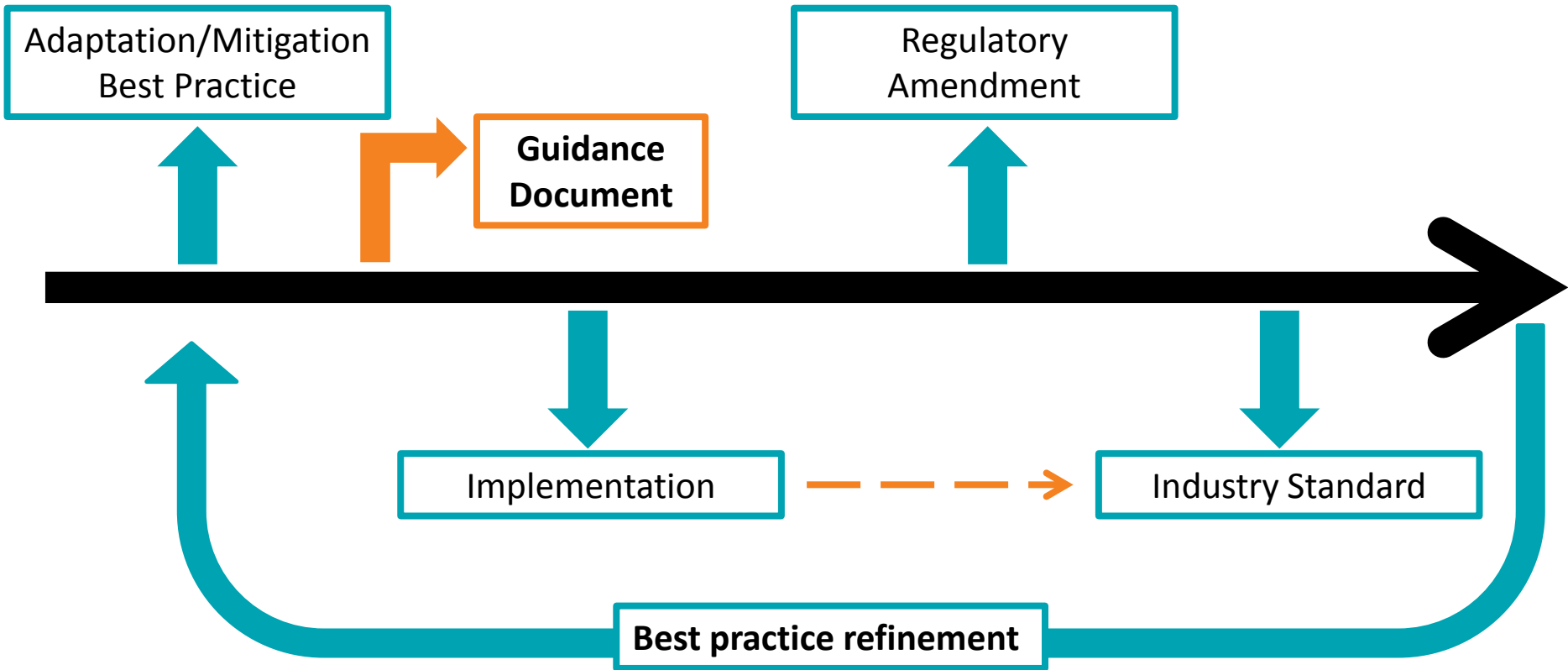
Timeline for Integration of Mitigation/Adaptation



Best Practice: Refinement



Best Practice: Refinement



Guidance Document: Intended Use

Purpose: guidance document is a **practitioner guideline** that provides a framework for implementing climate change considerations into the broad Ontario EA process.

EA Practitioners include:

- Those involved in the development of EAs
 - Those who utilize EA documents
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- To be used in conjunction with the Ontario Environmental Assessment Act

Practitioner Guideline Structure

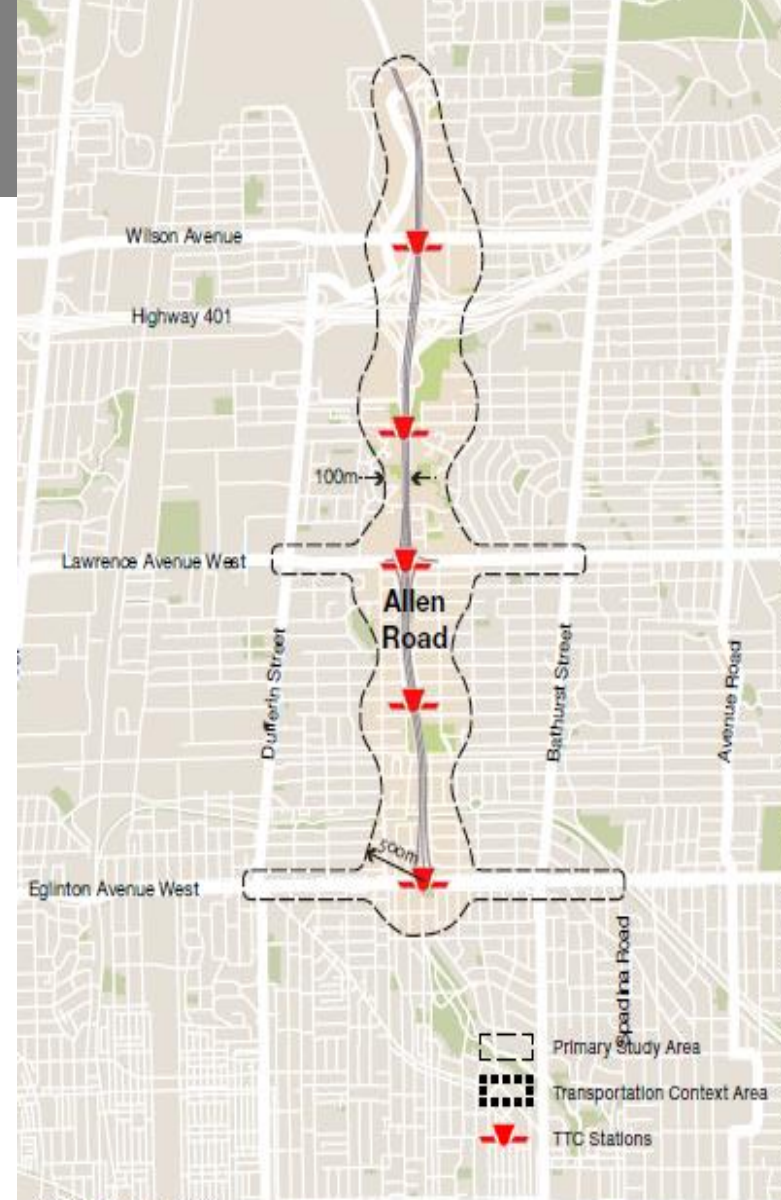
- Practitioner guideline is organized by the broad phases of completing an EA in Ontario

Under each phase:

1. Relevant Section of the Act
2. Current Requirements of the EA Phase
3. Importance of Considering Climate Change
4. How to Integrate Climate Change Considerations

Case Study

- Allen Road Terms of Reference (ToR)
 - An example to **determine the adaptability and effectiveness of the practitioner guideline** at informing project planning.
 - Serves as **educational tool to improve understanding** of the practical application of the guideline.



Key Questions

- Could the considerations identified in the practitioner guideline be applied to the EA process?
- Does the application of the practitioner guideline inform next steps for the practitioner?
- Does the application of the practitioner guideline provide novel information?

Findings

- The phases and considerations identified in the guideline were comparable to the components of the Allen Road ToR.
- The guideline provides prompting questions for ease of following and ease of communication.
- The guideline was able to frame the existing information on the project's potential impacts in a new way –a climate focused lens.

Summary and Recommendations

- Guidance documents should be used in conjunction with amendments to Ontario's Environmental Assessment Act to integrate climate change into Ontario's EA process.

Guidance Document

- ✓ Faster updating of recommended new research and new industry practices
- ✓ Format allows for communication of more detail and information
- x Recommendations in document not required by law

Regulation Amendment

- ✓ Amendment becomes legal requirement
- x Regulations more difficult and slower to update

Going Forward

- Guidance documents should be used as a strategy to incorporate climate change considerations into the Ontario EA process.
- The practitioner guideline allows proponents to address climate change threats unique to their project and region through recommended uses of existing tools and best practices.

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