WELLESLEY WILL
BUILD A SUSTAINABLE FUTURE

Wellesley Will Climate Action Plan

Working Groups Summit

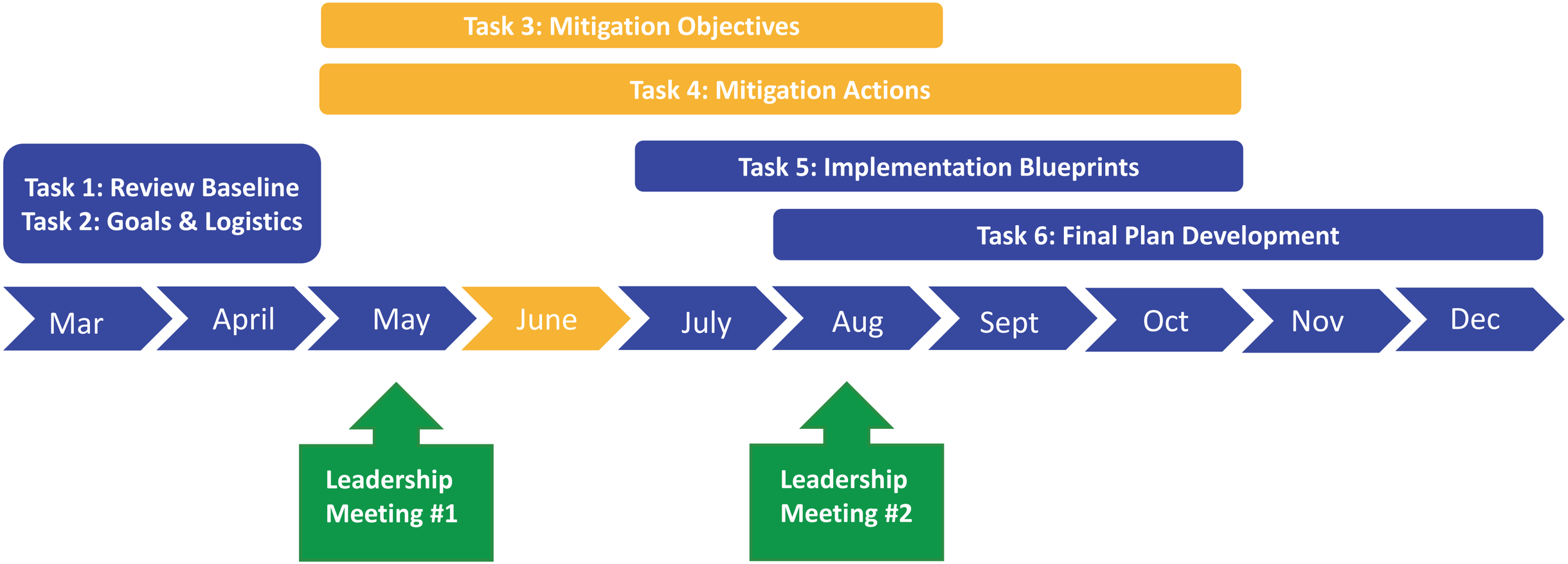
June 17th, 2021

Agenda

- Welcome & Introductions
- Review CAP Planning Process
- Present GHG Targets & Scenarios
- Plan Pathways, Progress, & Goals
- Breakout Rooms: Brainstorm Mitigation Actions
- Confirm Evaluation Framework
- Closing & Next Steps
- Adjourn

INTRODUCTIONS

Planning Timeline



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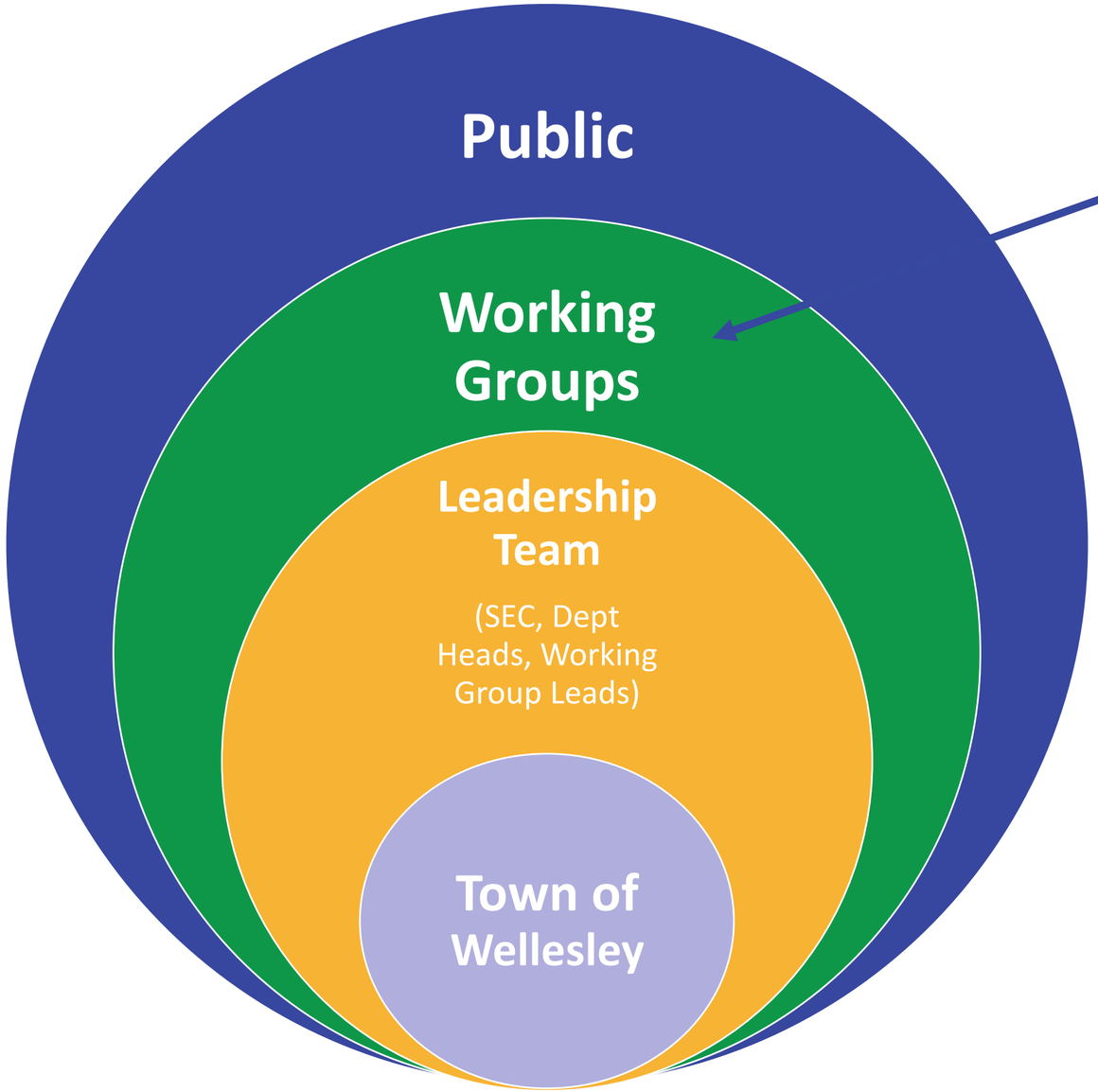
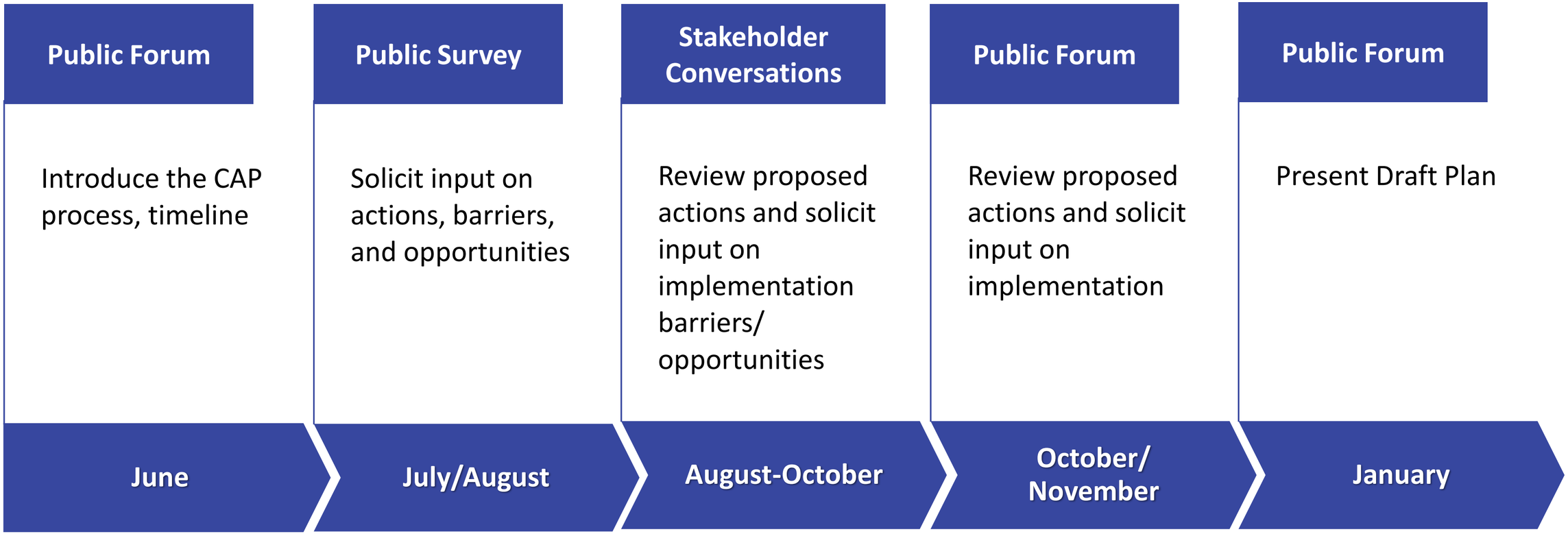


Working Groups:

- Energy
- Buildings
- Mobility
- Waste and Natural Resources
- *Governance*

Stakeholder Engagement Timeline

Public Engagement Timeline



GHG Targets & Scenarios

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Greenhouse Gas Reduction Targets

From 2007 baseline, reduce GHGs:

- 50% by 2030
- 80% by 2040
- 100% by 2050

What happens if we take no action as a community?

Business-As-Usual (BAU) Scenario

- Sometimes called “Baseline Scenario”
  - In some cases used to calculate “avoided GHGs” (hypothetical)
  - BAU assumptions are more critical in places with rapid growth
  - We just want to understand how to get to 0 and how quickly

- It’s a tool, not a prediction!
  - Think of this as skating to where the puck will be

Key Assumptions

- Inventory Boundary Updates
  - Not possible to hit targets when “pass-through” traffic included
    - Removed **all Rt 128** and **½ of Rt 9** from Forecast and 2007 Baseline
  - Allowable by US Community Protocol and Global Protocol
  - Common practice among other cities

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Key Assumptions

- Grid Electricity
  - MLP plans up to 57% renewable supply by 2023
  - Extended to 60% by 2030, 80% by 2040, 100% by 2050 for BAU

- Buildings
  - No growth in the ***number*** of homes but growth in ***total area*** with bigger re-builds
  - Assumes equivalent of 10 homes and 1 commercial building / year

Key Assumptions

- Trend in Vehicle Miles Traveled (VMT)
  - Area population growth of 243 people per year
  - 4.6% increase in VMT/Capita by 2050 (State Decarbonization Roadmap)
  - Combined 16% increase

- Wellesley College and Babson
  - Phase out to 0 by 2050

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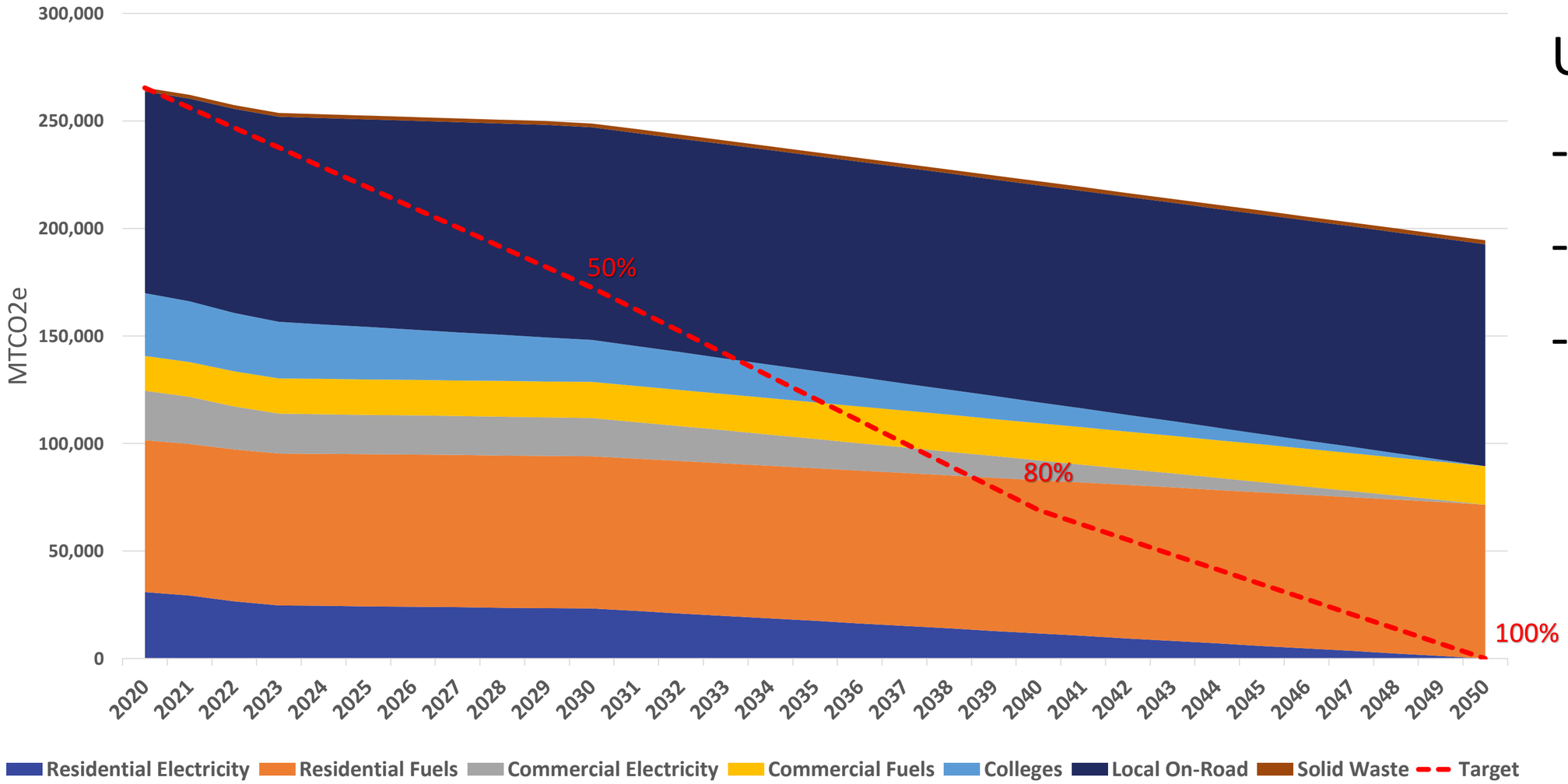
Business-as-Usual 2020-2050

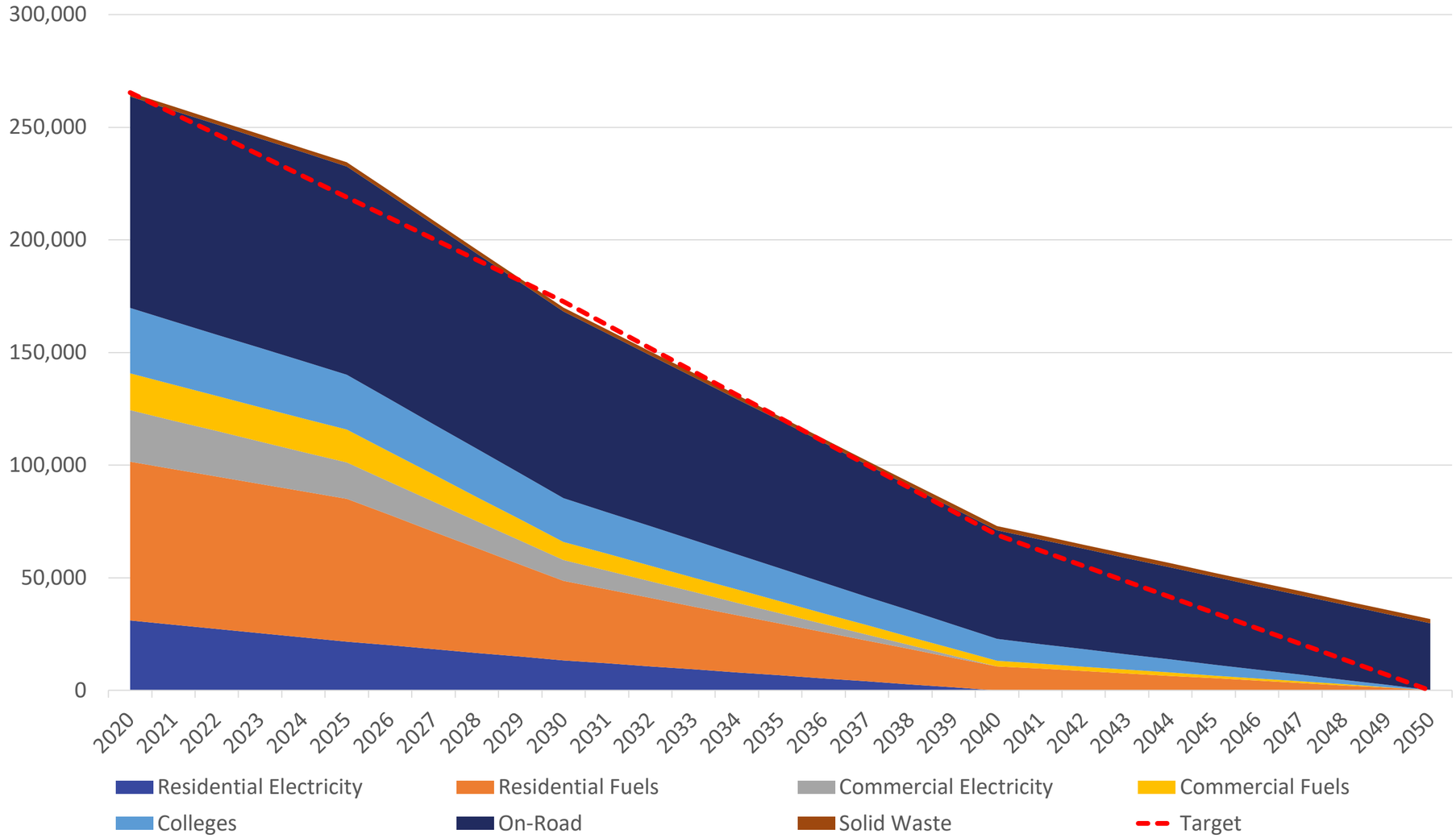


Under BAU:

- 33% by 2030
- 41% by 2040
- 42% by 2050

Scenarios with Actions

- What will it take?
  - Rapid increase in RE
  - **Sustained and Early** fuel switching
  - Uptake in EVs
  - Note the Gap!

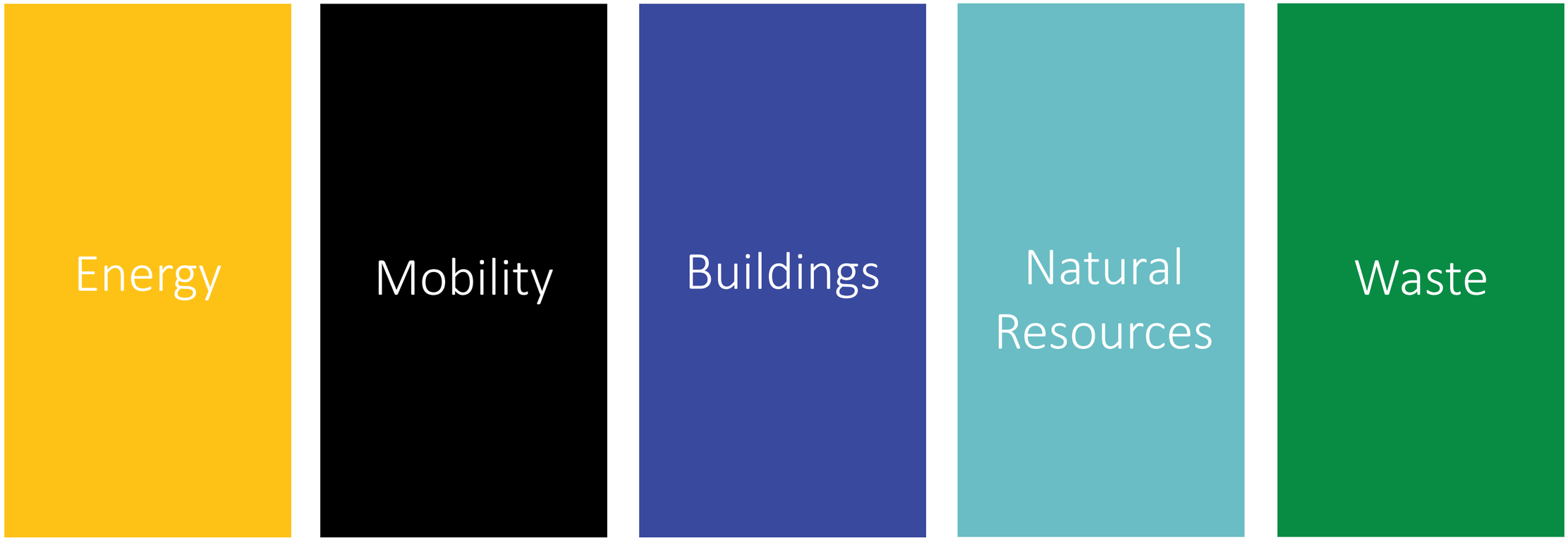


Moving to Actions

- Not all actions have a direct GHG Impact – But they are still necessary!
  - Energy Conservation, peak shaving, local solar will help make renewable energy targets more feasible
  - All EVs stuck in grid lock is not sustainable
  - Waste indicates just a portion of the impacts of material consumption. Reduce and Reuse creates other benefits outside the inventory

Plan Pathways

Plan Pathways



Energy: Ongoing Progress

- Electricity emissions decreased 25% between 2007 and 2020 (lower consumption, grid decarbonization)
- Green Communities Designation Grant:
  - LED retrofits, Town-owned/operated EV charging station, energy evaluations of water/wastewater infrastructure
- WMLP programs:
  - energy efficiency rebates, solar rebates, voluntary renewable energy program
    → 49% carbon-free electricity in Town as of 2020

Energy: Key Action Areas

Renewables

- MLP Electricity Purchases:
  - Target pathway requires
    - 60% -> 80% by 2030,
    - 80% -> 100% by 2040
- Solar Production
  - Max Out Solar Potential
    - ~1,989 viable rooftops
    - Current number of systems: 103 (2018)

https://www.google.com/get/sunroof/data-explore

Energy: Proposed Goals

- Source carbon-free energy for Town operations, as well as private use, with a focus on local renewable projects.
- Reduce overall energy use in Town and increase energy efficiency in all sectors.
- Ensure that energy supply is safe, resilient, affordable, and reliable for all.

Buildings: Ongoing Progress

- Emissions from buildings decreased 23% from 2007-2019 (but increased 1.4% from 2018-2019)
  - Town saw 8.8% decrease 2019-2020, due to pandemic building use changes
- Programs for residents:
  - Clean Comfort Air source heat pump pilot; WMLP/Energy New England home energy assessments; Home Energy Seminars for seniors
- Municipal Sustainable Buildings Guidelines

Buildings: Key Action Areas

Metric	2025	2030	2040	2050
% Residential Buildings Electrified	10%	**50%**	85%	100%
Homes To Retrofit by Target Year	878	4392	7466	8784
Retrofits per Year	**220**	**878**	**307**	**132**
% Commercial Buildings Electrified	10%	**50%**	85%	100%
Buildings To Retrofit	25	126	214	252
Retrofits per Year	**6**	**25**	**9**	**4**

Electrification

- State Decarbonization Roadmap only calls for 20% by 2030
  - If 100% RE by 2030, only 30% by 2030 is needed
- This action will grow building energy consumption by ~45%
  - Must pursue efficiency too!

Buildings: Proposed Goals

- Electrify heating, ventilation, and air conditioning (HVAC) systems of buildings, while enhancing occupant comfort and health.
- Reduce the energy use intensity of buildings throughout Wellesley.
- Preserve and upgrade existing buildings of all ages to be more efficient and resilient to climate stressors, where possible.
- Ensure that new development is energy efficient, smart, resilient, and contributes to the cultural and natural character of Town.

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Mobility: Ongoing Progress

- Transportation represents 46% of total emissions (2019). Town achieved 2020 reduction target, partly due to pandemic related decrease in travel.
- Public EV charging station installed (part of Green Communities Grant)
- MWRTA bus service to Town
- Complete Streets policy adopted
- Town developing a Sustainable Mobility Plan, to be completed soon

Mobility: Key Action Areas

Metric	2025	2030	2040	2050
Percent of Vehicles	5%	20.0%	60.0%	80.0%
Number of Wellesley Vehicles	888	3,400	10,200	13,600
EV Switch per Year	**222**	**680**	**680**	**340**
Increased electric use MWh	2,997	11,957	37,662	52,602

EV Transition

- Percent of Vehicles based on high adoption rates from State Decarbonization Roadmap for average
- Will Wellesley adopt these faster?

Mobility: Key Action Areas

Reducing Vehicle Miles

- Post – EVs: 35 million gasoline miles / year remain
- Commuter Rail
  - Get 50% of Boston/Cambridge workers to ride
  - Avoids ~1 million miles / year
- Discretionary Trips
  - Reduce every household by 1 (2-mile) trip per weekday
  - Avoids 4.4 million miles / year

Mobility: Proposed Goals

- Ensure that low- and zero-carbon multi-modal transportation options are accessible and affordable throughout Wellesley.
- Improve connectivity and raise awareness of public transit and active transportation options for Wellesley residents and businesses.
- Support and expand electrification of transportation vehicles and infrastructure.

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Natural Resources: Ongoing Progress

- Community and pollinator gardens, GrowGreen Wellesley
- Public Shade Tree program
- Tree Protection Bylaw
- Organic Integrated Pest Management on Town property
- Open Space & Recreation Plan, Town Forest Management Plan, Wetlands Protection Committee

Natural Resources: Key Action Areas

- Sequestration
  - To be used going forward Wellesley will need to count tree losses as well as gains year to year.
- Potential as an Offset:
  - **~2,900 MTCO2e / square mile**
  - **~4.5 MTCO2e/ acre**
- Many non-GHG benefits – cooling, stormwater, biodiversity

Natural Resources: Proposed Goals

- Protect and enhance the ecosystem services provided by Wellesley's natural assets, including trees, water, and open spaces.
- Leverage nature-based solutions to enhance the Town's resilience.

Waste: Ongoing Progress

- GHG emissions related to waste decreased 23% (2007-2019)
  - Increased by 14% from 2019-2020, due to pandemic
- Plastic bag ban (2016)
- 3R Working Group
  - WasteWise Wellesley program: food recovery, cafeteria recycling at Town schools, repair café
- Step Up! Campaign to increase per household recycling rate

Waste: Key Action Areas

Reduce → Reuse → Divert

- Waste from RDF is only 0.6% of total GHGs
- RDF is only a small portion of total waste generated

- Missing:
  - Residents with private haul
  - All Commercial Buildings
  - Colleges

Waste: Key Action Areas

New Endpoints for Diversion

- Destination for RDF materials is currently landfill – biggest GHG reductions from organics diversion.
  - Composting and digester options will create materials that can cycle back into natural resources.
  - Compost additions reduce need for water and fertilizer, which has a GHG impact.

Focus on Plastics

- Private haulers → incineration; plastics produce most GHGs

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Waste: Proposed Goals

- Encourage the reduction of waste generated from resident and business consumption practices.
- Provide more resources for and promote existing opportunities for re-use.
- Increase waste diversion from homes, businesses, schools, and construction/demolition processes.
- Increase use of Wellesley's Recycling and Disposal Facility.

Governance: Proposed Goal

- Make climate change mitigation and resiliency a top priority of municipal government and support state and federal policies that align with Wellesley's climate goals.

EVALUATION FRAMEWORK

Evaluation Framework Purpose

This evaluation framework will serve as a lens through which Wellesley can ensure climate action and resilience are central to its ongoing decision making.

Inspired by guiding principles identified based on existing Wellesley plans and policies, and priorities heard thus far from stakeholders and the community:

- GHG Reduction
- Resilience
- Natural Resource Protection
- Regional Collaboration
- Equity & Justice
- Economic Vitality
- Public Health & Safety

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	Operational Theme/Definition
GHG Reduction	The reduction of Wellesley's GHG emissions in order to mitigate contributions to climate change.
Resilience	**Infrastructure Resilience:** Ability of physical infrastructure to withstand or recover from climate change impacts.
	Community Resilience: Reduced vulnerability of community members to climate change impacts.

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	Operational Theme/Definition
Natural Resource Protection	**Nature-Based Resilience:** Restoration or preservation of ecosystem services that reduce climate impacts.
	Healthy Natural Systems: Protection or regeneration of natural assets.
Regional Collaboration	Feasibility and impact of the action is strengthened through collaboration.

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	Operational Theme/Definition
Economic Vitality	**Generating Activity:** Creation of economic activity, jobs/job training, and/or business attractiveness.
	Building Economic Resilience: Ability of the economy to respond to and strengthen in the face of stressors.
	Financial Feasibility: Ability of the Town to fund and/or recover costs of an action.

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	Operational Theme/Definition
Equity and Justice	**Addressing Disparities:** Equitable access to benefits of strategy.
	Inclusive Planning: Inclusion and empowerment of non-traditional stakeholders.
Public Health & Safety	Ability to improve public health, wellness, and quality of life.

Regroup and Next Steps

- Next steps:
  - Working Group Leaders follow up with group
  - Organize independent convening (virtual or in-person) to review and refine actions, fill gaps, etc.
  - Draft Implementation Blueprint to be shared
  - Support for community conversations
  - Next Working Group Summit is September

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Thank you!