

Local Climate Action Plan Analysis Summary Report

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List of Acronyms

CAP - Climate Action Plan

EPC - Energy Performance Contracting - alternative financing mechanism designed to accelerate investment in cost effective energy conservation measures in existing buildings

EPR - Extended Producer Responsibility - requires companies to set up and pay for recycling programs for the products and packaging they make and sell

EV - Electric Vehicle - may be powered through a collector system by electricity from off-vehicle sources, or may be self-contained with a battery, solar panels or an electric generator.

GHG - Greenhouse Gas - carbon dioxide (CO₂), methane (CH₄), nitrous oxide (N₂O) and ozone - gases in the atmosphere that absorb and re-emit heat, and thereby keep the planet's atmosphere warmer than it otherwise would be

LEED - Leadership in Energy and Environmental Design - is the most widely used green building rating system in the world.

PPA - Power Purchase Agreement - is a contract between two parties, one which generates electricity (the seller) and one which is looking to purchase electricity (the buyer)

PPP - Public-Private Partnership - is a cooperative arrangement between two or more public and private sectors, typically of a long-term nature

ROI - Return on Investment - is usually expressed as a percentage and is typically used to compare the efficiency of different investments

VMT - Vehicle Miles Traveled - total annual miles of vehicle travel divided by the total population in a state or in an urbanized area

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Summary

Ten cities around the world of various population sizes were selected from the C40 web platform and recommendations of the Newton's Climate Action Plan (CAP) planning committee to perform preliminary research on Climate Action Plans and initiatives. Most cities examined for this analysis have larger populations than City of Newton, but also display wider range of initiatives taken to lower GHGs. Official documents published by the cities were used to identify initiatives relevant to the main contributing sectors for the city of Newton - transportation, residential and commercial gas and oil use, and commercial electricity use. *Appendix A* details the cities researched and two categories "Transportation" and "Energy" that outline policies in the CAPs of the corresponding cities that could be relevant to the City of Newton's priorities for GHG reduction.

Natural Gas leaks mitigation strategies have been researched outside of the particular city context as not all cities had this issue highlighted as one of the focus areas. Therefore, actions and policy suggestions to reduce natural gas leaks are highlighted in *Appendix B*.

Key Findings:

- Many municipalities used a combination of capital investment projects (i.e. bikeshare), ordinances (i.e. zoning mandates), and internal adjustments (i.e. retrofitting municipal buildings) to reduce GHGs.
- Most aggressive actions and accomplishments in GHGs reduction came from larger cities that were able to mobilize stakeholders and establish PPPs.
- Transportation sector was the hardest to tackle successfully, where many cities do not show significant progress after many years of targeted policies and investments.
- Most CAPs presented the strategies as initiative and policy suggestions rather than specific quantitative goals. City of Seattle is an exception, highlighting goals as a specific percentage change in each sector.
- Many cities highlighted other benefits to the CAPs initiatives, such as workforce development, health and wellbeing impacts, natural capital preservation, affordability, etc. City of New York's CAP is a good example of such comprehensive evaluation.

Assessment of Local Climate Action Plans

The following summarizes the most common initiatives, innovative initiatives, and stakeholder engagement strategies identified in the review of the local climate action plans. Further detail on each CAP analyzed is included in *Appendix A*.

Most Common Initiatives:

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- Bike share
- Green municipal fleet
- Mixed zoning, high-density planning
- Energy benchmarking and mandates
- LEED mandates for new development
- Retrofitting incentives for private sector and individual residents
- Municipal building upgrades, retrofitting
- Investment in renewable energy development/purchasing
- Home energy performance rating mandates at the point of sale

Most Innovative Initiatives:

- Eugene, OR - *20-minute neighborhoods plan* developed where 90 percent of Eugene residents can safely walk or bicycle to meet most basic, daily, non-work needs, and have safe pedestrian and bicycle routes that connect to mass transit.
- Eugene, OR - Evaluating and removing *financial, infrastructure, regulatory, and perceived barriers* to increase the use of on-site renewable energy systems.
- Boston, MA - *matchmaking service* for businesses that allows them to be paired with sustainability services such as green cleaners, green delivery and courier services, recycling services, etc.
- Washington, D.C. - *Zipcar FastFleet* offers municipal fleet optimization in the form of real-time tracking and sharing technology while downsizing their municipal fleet.

Stakeholder Engagement Strategies:

- Community Summits have been highlighted as a prominent tool to engage community in Boston, Chicago, and other cities. Moreover, City of Chicago CAP recommends bringing stakeholders together every 5 to 6 months to keep stakeholders informed of progress and ensure communities-wide buy-in.
- External Advisory Groups for each goal area with representatives from key partner organizations such as business and industry associations, other levels of government, non-government organizations and academia has been a highlight throughout multiple CAPs to ensure accountability for goals progress. Identifying responsible group of individuals to implement certain goals helped many cities to stay on track and collect better data.
- City of Paris engages stakeholders in a creative way by providing an opportunity to become "Partners" in the Paris Climate and Energy Action Plan by signing dedicated partnership agreement which gave stakeholders status of "Sustainable Paris Doers". This stakeholder network, led by City of Paris, acts as a social network and lists all eco-actions and showcases Doers; encourages exchange of sustainable ideas, offers practical tools, and hosts monthly free events that are open to public.

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- Lastly, online discussion threads, surveys, email, focus groups, interviews, representative polling, and events were also widely used by many cities to collect input, but to dot result in long-lasting continuous interaction between communities and CAP initiatives

Methods Used to Estimate Timeline, Impact, & Costs

As a part of the Local Climate Action Plan Analysis, additional research in the estimated timeline, impact, and costs of particular measures was conducted to inform the development of implementation approaches for the City of Newton's Climate Action Plan.

Appendix B - "Calculations" is color-coded in three ways to identify types of the initiatives.

Green category of Capital Investment Projects includes initiatives that require purchases and expenditures.

Orange category includes initiatives executed through ordinances, regulations, and mandates - a policy tools available to Newton's City Council and Mayor.

Blue category includes initiatives that municipality could do on its own internally to reduce GHGs.

Timeline estimation was mostly a rough estimation based on available data. Most CAPs did not have follow up CAPs to report on the actual timeline of implementation for the initiatives. The CAPs that have provided updates were roughly evaluated in 3 to 5 years. The timeline on the bikeshare roll out estimation was used from research that specifically outlined timeframe.

Expected GHG Reduction Impact was assessed based on the available information online about the initiative. In some cases, expected GHG reduction was not possible to estimate, so other proxies such as percent decrease in gas consumption was used to allow further calculate GHG reduction. The other proxy to estimate GHG reduction was a *per unit* proxy, for example, per 1 electric vehicle in a year.

Expected Financial Impact was calculated as a potential cost imposed to the City of Newton if the initiative were to be implemented. For most initiatives it was unclear on what the exact costs may be; for some there was precise information available with documented references; and for regulatory initiatives costs were estimated at \$0 under the assumption that it only requires work of City Council members to pass a certain ordinance.

Monitoring and Evaluation metrics were found during the research by identifying common indicators used in the literature.

Prioritization Recommendations

One of the important aspects of developing a successful CAP is understanding what factors to take into account and how they may influence the feasibility of implementing a particular action or the scale of the actions overall impact. The following table includes common factors represented across the CAPs analyzed and how they relate to potential actions to include in a CAP.

Factor	Relationship to Action
Staff Capacity	<p>Available staff capacity can impact the feasibility of an action to be implemented and timeline necessary for implementation.</p> <p><i>Example:</i> In the City of Chicago's CAP, they considered staff capacity when actions were placed along an implementation timeline, suggesting at least two staff and project manager per initiative selected.</p>
Present Stakeholder Engagement	<p>Identifying active stakeholders operating or advocating on the CAP's initiatives and partnering with them to further ensure accountability during implementation.</p> <p><i>Example:</i> Seattle, WA, CAP has extensive list of Community Organizations that are identified as a potential partner for each initiative in the CAP.</p> <p>Washington, DC, has a dedicated non-profit partner just for community engagement (monthly workshops, educational and outreach programs).</p>
GHG reduction per \$	ROI and levelized cost calculations per investment.
Ease of Monitoring and Evaluation	<p>Identify data collation mechanisms that are already in place to track measurable changes and progress and communicate that to stakeholders.</p> <p><i>Example:</i> City of Alameda, CA, attributes it's CAPs success due to the strong monitoring and evaluation framework.</p> <p>The City of Pittsburg's previous CAP's actions were framed as suggestions without a clear measure of success, making it difficult to gauge completion. Their new CAP is structured according to emission sources, with a focus on instrumental and measurable actions with assigned stakeholders.</p>
Additional Indicators	<p>Following indicators were used by New York City to evaluate CAP initiatives: Jobs, Economy and Innovation, Workforce Development, Long-term Savings, Health and Well-being, Safety, Affordability, Access, Community, Lead by Example, Resiliency, Reliability, and Natural Capital.</p>