

EXECUTIVE SUMMARY

LOCAL CLIMATE ACTION PLAN
CAMPINAS, BRAZIL

SECRETARIA DO
CLIMA, MEIO AMBIENTE
E SUSTENTABILIDADE

PREFEITURA DE
CAMPINAS



Photo: Vitor Moraes Ribeiro/ Paulo Ricardo Egydio de Carvalho Neto.

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ABOUT THIS DOCUMENT

The Campinas Local Climate Action Plan (PLAC) is a guiding and strategic document that sets out an integrated and inclusive pathway — aligned with its social, environmental, and economic priorities — aimed at mitigating greenhouse gas emissions and enhancing the city's resilience to the impacts of climate change. The PLAC also contains implementation milestones for its immediate execution.

The PLAC was developed by the Campinas City Hall with technical support from the World Resources Institute (WRI) Cities Program and participation from various research institutes, institutions, and civil society. Its development began in April 2023 and concluded in May 2024, and included the creation of six interim reports available in Portuguese on the city hall's website.

This executive summary highlights the key messages from this process, emphasising the main results of technical studies on mitigation and adaptation, the strategy underlying the PLAC, and the presentation of the proposed axes, actions, sub-actions, and goals until 2050. It also outlines its governance, financing, monitoring, and evaluation, as well as the engagement of various economic sectors and the population.

For the full PLAC version in Portuguese, click here.



Photo: Carlos Bassan.

INTRODUCTION AND CONTEXT OF CAMPINAS

Cities are at the forefront of the global fight against climate change, being simultaneously affected by its severe consequences and responsible for a significant share of the greenhouse gas emissions driving this phenomenon. This is also true for Campinas, the 14th largest city in Brazil and the third largest in the state of São Paulo. The municipality celebrates its 250th anniversary in July 2024 and, as a city in constant development, faces a series of social, economic, and environmental challenges that require strategic and coordinated actions.

Table 1 – Relevant Information of Campinas

Per capita GDP (2021)	US$ 10,945 (R$ 59,634.21)
Vegetation Cover (2020)	14,4%
Gini coefficient of income concentration (2010)	0,578
Population (2022)	1.139.047 inhabitants
Population density (2022)	1.433,54 inhabitants/km²
Population growth rate (2010-2020)	0,88% per year
Degree of urbanisation (2020)	92,28%

Source: IBGE (Censos 2010 e 2022), Inventário Florestal do Estado de São Paulo (2020).

For over a decade, the municipality of Campinas has been politically and technically active on the climate agenda and is an important national reference on the subject. The Municipal Policy for Addressing the Impacts of Climate Change and Air Pollution (Law 12.022/2020) stands out, establishing the first guidelines for climate action. In 2022, the municipality voluntarily joined the Cities Race to Zero and Race to Resilience, global mitigation and adaptation campaigns led by the United Nations Framework Convention on Climate Change. In 2023, Campinas Civil Defence was recognised as a resilience hub by the United Nations Office for Disaster Risk Reduction (UNDRR), integrating interdepartmental partnerships and mapping vulnerabilities in its Resilience Plan, which is being revised in 2024.

Through this line of action, the city has committed to implementing actions to limit the increase in global average temperature to 1.5°C by 2050 and to keep its territories adapted and resilient to the consequences of extreme weather event.

In this context, the development of a Local Climate Action Plan (PLAC) is essential to outline a local strategy to tackle one of the greatest global challenges of our time: climate change. From a perspective that integrates climate challenges with the city's priorities, this plan aims not only to reduce emissions and increase urban resilience but also to strengthen communities, climate justice, local natural ecosystems, and achieve the Sustainable Development Goals (SDGs), consolidating Campinas as a leader in integrated climate action.

By 2050, Campinas will be established as a sustainable and resilient city in a democratic and inclusive way, with low-carbon development prioritising climate and socio-environmental justice

This vision guided the PLAC, which consolidates actions already underway and establishes new measures to be taken.

SCIENTIFIC EVIDENCE FOR INTEGRATED CLIMATE ACTION IN CAMPINAS

The construction of the PLAC used secondary data to understand the main social and environmental challenges and existing priorities. In order to plan for the changing climate and achieve the desired vision, new studies were conducted, seeking methodologies aligned with the latest climate science. The trends observed in the analyses were used to support the development of actions.

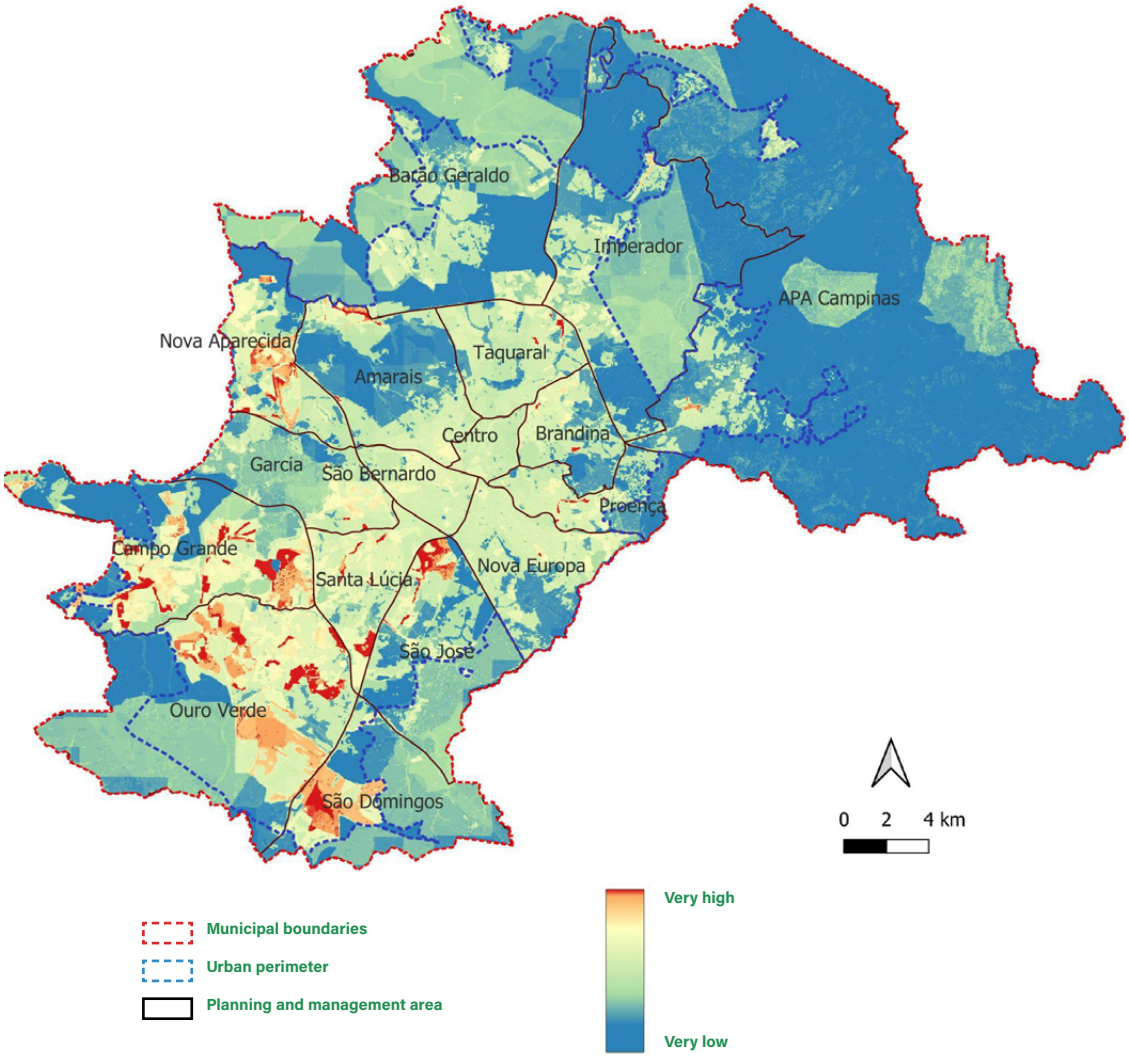
The main current climate risks in Campinas are floods, droughts, landslides, heatwaves, and vector-borne disease epidemics.

Current climate risk analyses show that the Planning and Management Areas (APGs) with the most combined vulnerabilities are Ouro Verde, São Domingos, Campo Grande, São José, and Nova Aparecida and Santa Lúcia. Regarding temperature, the State University of Campinas (Unicamp) found that between 1989 and 2022, the average maximum temperature in the city increased by 1.2°C. Over the last 30 years, the city recorded average maximum temperatures close to 34°C in the hottest months and minimum temperatures below 8°C in the coldest months.



Photo: Carlos Bassan.

Figure 1. Multi-risk climate map

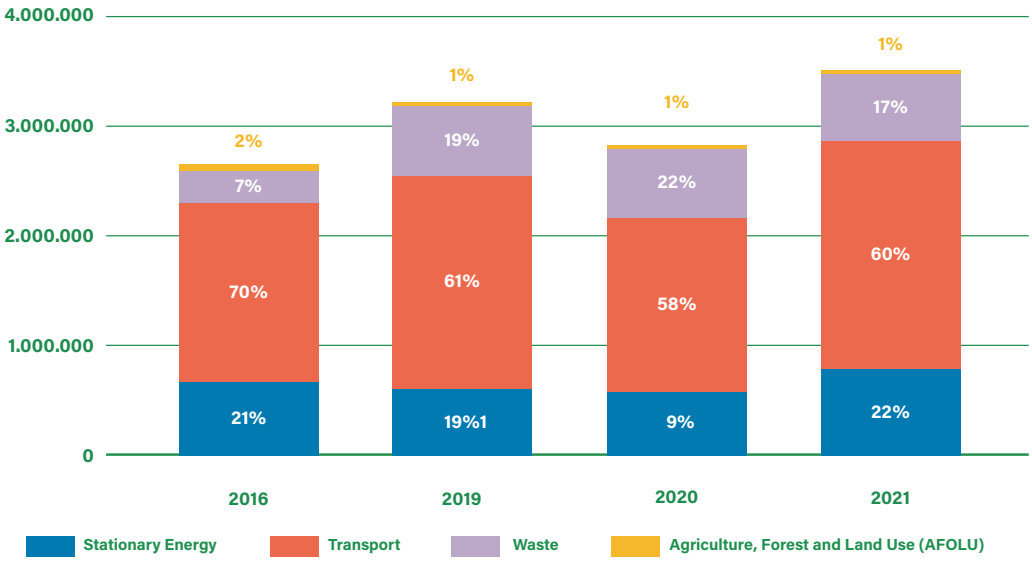


Source: Campinas City Hall, 2024.

The update of the Greenhouse Gas Emissions (GHG) Inventory studies, conducted to measure the city's emissions since 2016, shows that Campinas observed a 33% increase in the amount of GHG released into the atmosphere between 2016 and 2021. The observed change was from about 2.7 million tonnes of carbon equivalent (tCO_2e) in 2016 to approximately 3.5 million in 2021.

The use of cars, motorcycles, buses, trucks, and other motorised vehicles powered by diesel, petrol, natural gas, and other fossil fuels, combined with the refuelling of aircraft at Viracopos airport, together remain the largest contributors to GHG emissions in the city (60% in 2021). Electricity consumption from the national grid and LPG in homes, buildings, businesses, and industries accounted for 22% of the total in 2021 (stationary energy sector). The decomposition of waste and effluents, including sewage treated by the Water and Sewage Supply Society (SANASA) and the disposal of solid waste in the Paulínia landfill, contributed 17% of emissions. Deforestation, fertiliser use, and livestock activity within the city accounted for 1% (agriculture, forestry, and other land use sector).

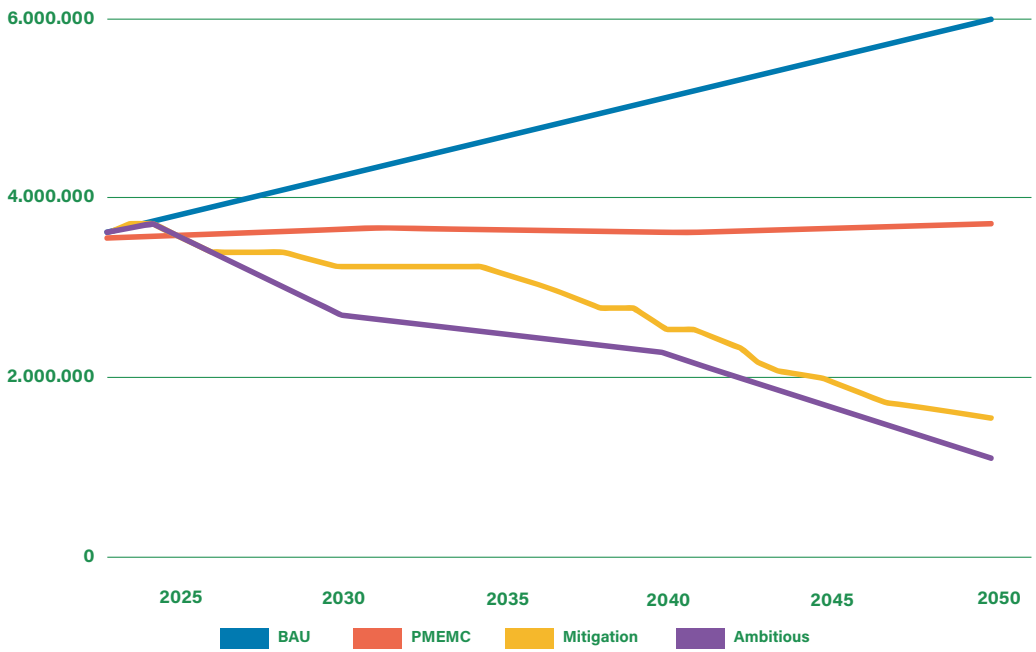
Figure 2. GHG emissions in Campinas by year and sector (tCO_2e)



Source: Campinas City Hall, 2023.

To understand how these emissions might unfold until 2050, Campinas developed four future emission scenarios based on the inventories and their trends. These scenarios direct the strategies and pathways to be taken to mitigate greenhouse gas emissions and indicate that:

Figure 3. Comparison of GHG emissions scenarios



Source: Campinas City Hall, 2024.

Business as Usual – BAU Scenario: If nothing is done to reduce them, the city will nearly double its emissions by 2050.

Mitigation Scenario: Implementing the actions presented in the PLAC and others already planned in other state and federal plans, combined with integrated action with key mitigation sectors in the city, would lead to a 22% reduction by 2030 and 73% by 2050.

PMEMC Scenario: Considering the current trend, the goals of Campinas's Municipal Policy for Addressing the Impacts of Climate Change and Air Pollution (PMEMC) would only be able to stabilize emissions until 2050.

Ambitious Scenario: Following the same premises as the mitigation scenario, an increased effort from local economic sectors and further changes in behaviour by Campinas society could result in a 35% reduction by 2030 and 80% by 2050.

Considering the most ambitious scenario developed, this PLAC proposes new mitigation targets that meet the voluntary commitments signed after the publication of the PMEMC, aligned with the Paris Agreement and state, national, and international initiatives. **Campinas aims to reduce its GHG emissions by 35% by 2030 and 55% by 2040, using 2016 as the base year, and achieve net zero emissions by 2050.** The initial analysis used as part of this plan currently forecasts 20% residual emissions in 2050, which are those that, for some reason, cannot be avoided.

Achieving net zero emissions globally by 2050 is essential to limit the increase in global average temperature to 1.5ºC above pre-industrial levels, significantly reducing the risk of severe climate impacts such as extreme weather conditions and sea level rise. Achieving this goal helps stabilize global temperatures, protect ecosystems and communities, and ensure a sustainable future for all.



Photo: Campinas/SP City Hall.

ROADMAP FOR INTEGRATED CLIMATE ACTION

The analysis of Campinas' socio-environmental challenges, emissions, and climate risks supported the definition of objectives and strategic axes, as well as actions and goals in the short, medium, and long term. The priority strategies and measures were discussed and defined in co-creation moments and consultations with research institutions, public servants, and civil society. They outlined the planning of initiatives within the reach of the city hall to integrate climate action into the city's development.

For the elaboration of the PLAC, a Working Group was established with representatives from 14 municipal bodies, who contributed to identifying powers, difficulties, opportunities, and possibilities for action. Thus, the strategic objectives of the plan and 5 strategic axes were defined, representing the most priority urban systems for climate action, as shown in figure 4.

The plan contains a total of 20 actions, 96 sub-actions, and 125 goals with indicators for the years 2032, 2040, and 2050. The actions of the PLAC were developed through discussion with public managers and civil society representatives at the Municipal Conference on Environmental Education, in participatory workshops in the Anhumas and Amarais regions, and in an online public consultation promoted by the city hall. **The application of the concepts of climate justice, one health, and alignment with the United Nations' 2030 Agenda are cross-cutting to all the strategic axes and objectives of the PLAC.**



Photo: Campinas/SP City Hall.

Figure 4. PLAC strategic framework

VISION:

By 2050, Campinas will be established as a sustainable and resilient city in a democratic and inclusive way, with low-carbon development prioritizing climate and socio-environmental justice.

STRATEGIC OBJECTIVES



→ Ensure that urban services are resilient, low carbon, efficient and accessible to all.

→ Protecting communities and the natural and built environment from climate risks.

→ Promoting a compact, connected and resilient urban design that prioritises people and nature.

→ Ensure that no one is left behind by adopting inclusive and equitable approaches and actions.

→ Encouraging sustainable low-carbon local development and the reduction of greenhouse gas emissions in the city.

PLAC's strategic axes and specific objectives

AXIS 1. Renewable, reliable energy and resilient buildings for all

Specific objective:
Proactively establish a renewable, efficient and reliable energy system and resilient buildings.

Related SDGs



Actions:
1.1 Realise the transition to a clean and reliable electricity grid.
1.2 Carry out a programme for social housing that is resilient to climate change.
1.3 Increase energy efficiency and renewable energy in buildings.

AXIS 2. Resilient Basic Sanitation

Specific objective:
Ensure universal access to basic sanitation and integrated management that mitigates greenhouse gas emissions and strengthens climate resilience.

Related SDGs



Actions:
2.1 Reduce the amount of solid waste going to landfill.
2.2 Increase the efficiency of the urban cleaning service with a focus on reducing flooding and waterlogging points.
2.3 Increase the municipality's water security and ensure water supply and basic sanitation services for all residents.
2.4 Mitigate critical flooding points.

AXIS 3. Urban mobility and sustainable transport systems

Specific objective:
Promote infrastructure that prioritises active, inclusive and good quality mobility, as well as adopting measures to transition to low-carbon motorised transport.

Related SDGs



Actions:
3.1 Improve and integrate the public transport system to attract more users.
3.2 Promote the creation and expansion of walkability and accessibility networks.
3.3 Expand the cycling network, integrating it with public transport and green infrastructure.
3.4 Encourage the transition to low-carbon modes of transport.

AXIS 4. Climate-smart urban and rural development

Specific objective:
Ensure urban and rural resilience actions by promoting socio-environmental policies to reduce vulnerabilities.

Related SDGs



Actions:
4.1 Incorporating nature-based solutions into city planning and fostering the bioeconomy, with a view to conserving local biodiversity.
4.2 Integrate climate adaptation and disaster risk reduction into land regularisation and urban planning in the city.
4.3 Preparing public spaces for extreme heat and other climate risks.
4.4 Promote compact, transport-orientated development to improve access to services.
4.5 Encouraging safe and healthy food systems.

AXIS 5. Education, resilience and climate integration

Specific objective:
Integrate sectoral mitigation and adaptation actions and strengthen communication with the population through assistance and climate education.

Related SDGs



Actions:
5.1 Providing assistance and preventing diseases linked to identified climate risks.
5.2 Carry out and support climate education actions.
5.3 Intensify prevention, management and resilience to climate risks and disasters.
5.4 Elaborate a Greenhouse Gas Emissions Compensation Programme for the municipality.

Table 2. Sample of PLAC Targets[1]

	2032	2040	2050
AXIS 1. Renewable, Reliable Energy and Resilient Buildings for All	Having 100% of public lighting points with LED bulbs	Having 20% of public buildings buy renewable energy on the free market	Building 100% of new social housing with energy efficiency parameters
AXIS 2. Resilient Basic Sanitation	Implement 6 reservoirs as part of the Anhumas Basin Macrodrainage Project	Implement 20 nature-based solutions to increase permeability and reduce the speed of rainwater runoff	Implement 900 hectares of linear parks to mitigate flooding hotspots through micro- and macro-drainage projects
AXIS 3. Urban mobility and sustainable transport systems	Convert 80% of the municipal fleet to hybrid, electric or flex-fuel vehicles fuelled by ethanol	Promote 40% of the restructuring of municipal and metropolitan public transport to integrate it with the Campinas - São Paulo Intercity Train	Have 70% of the public transport fleet using low-carbon technologies
AXIS 4. Climate-smart urban and rural development	Recover 500 hectares of permanent preservation areas in the municipality	Adapt 50% of roads with identified needs so that they are safe and contain green microdrainage	Incorporate the purchase of organic food into 100% of school feeding and lunch contracts
AXIS 5. Education, resilience and climate integration	Install 40 digital risk alert communication panels in flood areas	Carry out and/or support climate education actions in 50% of the communities most vulnerable to climate risks and in informal and regularised urban centres	Register 100% of the vulnerable population to receive alerts of extreme weather events via SMS

Source: Own elaboration.

1 The table highlights just some of the proposed targets and indicators. All the sub-actions have indicators for 2032, 2040 and 2050, which can be consulted in full version of the Campinas Local Climate Action Plan.

The proposed actions generate direct benefits in Campinas in terms of improved air quality, the generation of local green jobs and the promotion of social equity. In particular, the PLAC's sub-actions support job creation through planned incentives for the photovoltaic energy sector, encouraging the development of agroforestry and training for the formation of recycling cooperatives. Air quality in Campinas will benefit directly from low-emission technologies and vehicles that will make up the city's vehicle fleet and public transport, as well as the establishment of appropriate infrastructure for cyclists and pedestrians. Equity is promoted through specific actions aimed at vulnerable groups. One example is the Bioeconomy Programme, which focuses on professional development and income generation to support mainly women and people from vulnerable communities in activities such as sustainable forest management, waste recycling and renewable energies.

As next steps for implementation, Campinas City Hall has mapped out approximately 150 key activities that will be carried out between now and 2030 to enable the implementation of the actions proposed by each axis, as well as identifying those responsible and deadlines for execution. These implementation milestones indicate the steps that are needed to unlock the necessary financial resources, engage the right institutions and actors, build internal technical capacity and modify or draft laws, policies and regulations. In addition to the actions, the PLAC contains pathways for the immediate start of their implementation.



Photo: Campinas/SP City Hall.

ENABLING THE IMPLEMENTATION OF PLAC

The successful implementation of the actions in this plan also depends on strategic steps towards strong climate governance. This is critical to coordinate the structures and processes for action, implement a robust monitoring and evaluation system, unlock the resources needed for execution and strengthen collaboration with a wide range of stakeholders on the issues addressed.

The realisation of the PLAC will require multisectoral and multilevel collaboration that will be facilitated by supportive institutional arrangements. The city will consolidate a coordinated decision-making and management structure for tackling climate change, i.e. its climate governance.

Its main instrument will be the Municipal Committee for Coping with the Impacts of Climate Change, established by Municipal Decree, responsible for managing the PLAC and supporting the guidelines, objectives and targets of Campinas' climate policy, which is made up of different groups and strategic players (table below). Campinas will also use metropolitan and regional governance spaces to seek multi-level alignment with the metropolitan region, the São Paulo state government and the federal government, such as the technical chambers of the Campinas Metropolitan Agency (AGEMCAMP), the State Council on Climate Change and the Piracicaba, Capivari and Jundiaí River Basin Committees (PCJ).

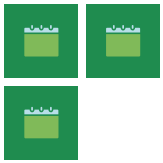
Table 3. Municipal Committee for Coping with the Impacts of Climate Change

Management Group (deliberative)	Municipal government officials in portfolios linked to climate issues.
Technical Group (consultative)	Technical representatives from the municipal bodies involved.
Technical Chambers (participatory)	Representatives of civil society, including academia, trade unions, businesses, grassroots organisations and the third sector.
Climate Emergency Group	Linked to the Municipal Civil Defence to deal with extreme events and support the Management Group in decision-making.

Source: Own elaboration.

Implementation will be monitored through the targets for achieving the objectives established in each axis, accompanied by evaluation cycles to understand the progress of the actions This process will be coordinated by the Municipal Committee for Coping with the Impacts of Climate Change, with social participation and comprehensive and transparent monitoring. Periodic reviews of the PLAC will allow for continuous improvements, reflecting new knowledge, lessons learnt and support its updating to incorporate new climate actions, commitments and practices. In this way, the Plan becomes a dynamic document constantly improving and strengthening local climate action. The reports, updates and monitoring activities will be made publicly available on the Campinas City Council's Climate Action Portal.

Table 4. Frequency of PLAC monitoring, evaluation and reporting activities

Activity	Periodicity
Follow-up meetings on PLAC actions (Municipal Committee for Coping with the Impacts of Climate Change)	Monthly 
PLAC results reports, available on the Climate Action Portal	Yearly 
Systematic and partial evaluations and reviews of PLAC actions	Yearly 
Review of the GHG Emissions Inventory	Yearly* 
Review of the PLAC (updating studies and actions as necessary and as new data and methodology become available)	Every 3 years 

*Until June of each year, based on the last year with available data

Source: Own elaboration.

Resource mobilisation is key to building capacity and supporting implementation in the territory. **The PLAC identifies various sources of funding needed to support implementation and identifies the steps needed to unlock access to external sources of funding and finance. Of the 20 actions and 96 sub-actions in this plan:**

→ All have identified municipal public funding and funding from development finance institutions as a possible source of funds;

→ 80% have recommended federal public funding and funding from the private sector;

→ While 65 per cent have indicated federal public funding.

The immediate and longer term steps that will be carried out to make these resources viable are set out in the implementation roadmaps for each axis. Other measures will be developed to achieve access to the necessary resources:

→ Establishment of the Climate Finance Thematic Chamber to debate sources of funding, engage the private sector, structure projects and map resources;

→ Estimating the costs of implementing the PLAC, considering social and environmental benefits, and the possibility of creating a climate fund;

→ Integration of PLAC targets into municipal target cycles to guarantee long-term resources;

→ Inclusion of climate adaptation criteria in the municipal budget, to align resource allocations with the plan's priorities;

→ Establishing mechanisms for accountability and the commitment of secretariats to priority actions;

→ Mapping synergistic actions with other municipal plans and policies to optimise resources and speed up implementation.



Photo: Carlos Bassan.

The public authorities are committed to involving the whole of Campinas society in the implementation of the PLAC. The roadmaps for implementing the axes provide for the engagement of organisations such as residents' associations, school communities, representatives of vulnerable populations, trade unions and professional councils, as well as representatives of the private sector, academia and state and federal bodies. **It is essential that a wide range of local partners and actors contribute to the implementation of the PLAC, to ensure that their perspectives are considered and their needs met, always prioritising climate justice.** The response to climate change is a collective effort that can only be achieved with the collaboration of society as a whole.



Photo: Campinas/SP City Hall.

NEXT STEPS

The effective implementation of the PLAC requires the achievement of implementation milestones, the development of work plans, the consolidation of climate governance structures, the continuous engagement of the population, the consistent monitoring of actions and the periodic review of targets. It is also important to revise the Municipal Policy for Coping with the Impacts of Climate Change and Air Pollution, aligning its goals with the ambitions of the Paris Agreement and the climate commitments made. In addition, Campinas City Hall will remain committed to applying methodologies in line with the latest climate science, increasingly improving the robustness of the analysis to drive the necessary local action.

Only by tackling climate change collectively and systemically will it be possible to build a better city for current and future generations. **With the launch of this plan, the city council is calling on all residents and economic sectors to join this movement for a sustainable future.**



Photo: Eduardo Sousah - WRI Brasil.



Photo: Campinas City Hall.



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