CLIMATE, HEALTH AND EQUITY
GLOBAL IDEAS FOR U.S. SOLUTIONS

C4O
CITIES

Contents

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Global Solutions

ABOUT THE SELECTED SOLUTIONS

The solutions in this collection were identified for their progressive actions tackling climate change, equity and health simultaneously. These solutions are diverse in geography and focus area as well as stage of completion. The solutions also cover a range of health and equity concerns, in addition to both climate mitigation and climate adaptation measures. The global solutions identified are for illustrative purposes only and are intended to provide inspiration for U.S. cities by showcasing a variety of successful examples and related lessons from cities outside of the U.S. Together, these solutions reflect a range of cities, challenges and solutions; we recognize that what works for one city may not be appropriate for another.

Each city solution includes a brief summary and project information; its primary focus area (e.g., Waste, Transportation, etc.); the specific impact on climate, health and equity; lessons learned for implementation; and the project timeline. Where appropriate, the solutions also highlight any specific catalysts, the key departments leading on the initiative, and any mechanisms for tracking progress and/or impact. Most of these solutions were implemented over multiple years. Where possible, solutions highlight key activities occurring over a two- to three-year timeline, recognizing that progress can be made in the short term.

LIST OF SOLUTIONS

Accra, Ghana | Accra improves social inclusion and air quality through a city wide waste management system

Cape Town, South Africa| Cape Town renovates for energy efficient homes and healthy residents

Chennai, India | Chennai Framework guides effort to rapidly restore water bodies

Chittagong, Bangladesh | Shelter and evacuation planning for people with disabilities in Chittagong

London, United Kingdom | London Healthy Streets

Milan, Italy | Comprehensive Urban Food Policy in Milan

Paris, France | Mapping cool city networks to find refuge from heat waves

Quito, Ecuador | Violence free metro system in Quito

02

Key lessons learned

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KEY LESSONS LEARNED ACROSS ALL OF THE SOLUTIONS

Solutions that address multiple community needs will be more successful in securing support than those that do not. Low-income communities are often subject to ripple effects where the lack of resources means that residents live in areas of the city with lower quality of life (i.e., less green space, lower air quality) and cheaper housing (i.e., lack of insulated ceilings, no electricity), therefore suffering proportionally more from health issues. In particular, climate action that goes beyond reducing greenhouse gas emissions and also addresses health and equity issues will gain more support and funding such as in **Cape Town**, where funding for ceiling retrofits was available due to its dual impact of improving health status and reducing energy consumption.

Multi-sector coordination can increase efficiency and save resources. The solutions show that a coordinated government effort helps cities save resources and also allows them to achieve buy-in from different government agencies and partners. For example, the **City of London** integrated the Healthy Streets Approach within all mayoral policy and strategy documents to ensure effective implementation across the city.

Photo: Unsplash

First included in the Mayor's Transport Strategy, Healthy Streets is now included in the Health Inequalities Strategy, The London Plan, the wider London Environment Strategy, the London Housing Strategy, Policing and Crime Plan, and the Economic Development Strategy. This encourages cross-team coordination, and clearly defines each department's responsibility in project implementation.

Data analysis will help identify the communities most in need and monitor an initiative's success. Widespread availability of data provides useful information about urban populations. This allows a targeted approach to climate action that benefits those most in need. Data, however, also provides the means for continuous monitoring and learning. For example, as a consequence of **Quito's** new "No Harassment" campaign, the city also coordinated with the municipal crime observatory to monitor and routinely collect data on sexual violence in public spaces.

Community engagement needs to go beyond traditional town-hall style meetings and include everyone. The transformative solutions needed to address climate, health and equity simultaneously need to reflect the voices of everyone and, in particular, those most vulnerable. New means of engagement that involve those typically left out of decision-making processes are therefore crucial. This could include unique methods such as events that focus the inclusion of historically marginalized populations, diverse steering committees, collaboration with citizen organizations that partner with the most vulnerable populations, and widespread volunteering programs. All of these methods have the potential to generate higher levels of trust in government, increased levels of civic engagement and leadership that is more diverse. For example, through the development of an app that geo-locates users to suggest the closest cool spots from their location, residents of **Paris** have become more aware of the importance of open access to green and cool areas in the city especially in times of extreme heat.

Accra, Ghana

Accra improves social inclusion and air quality through a city wide waste management system

Focus Area: Waste Management

Accra struggled with waste management, with more than 600 tons of waste discarded in open dumps daily. This practice led to the challenges of fires spontaneously setting ablaze, increased Green House Gas (GHG) emissions, and soaring air and ground water pollution levels, affecting citizens' health and pollution in the city. To combat this, the city closed all illegal open dumps and developed a city-wide waste management system, opening waste transfer stations and ensuring fair and inclusive employment.

Photo: Unsplash

Health

Low-income and informal communities in Accra house residents who are often living close to landfills. Open burning of waste has led to air pollution and poor sanitation conditions. In turn, residents are at much higher risk of disease. These projects have achieved significant reductions in air pollution, and the increase in waste collection has reduced the risk of disease. In addition, the city has not recorded outbreaks of cholera since 2017.

Climate Change

With a city producing more than 600 tons of waste per day, the Accra Metropolitan Authority (AMA) closed all open dumps in May 2017 to combat the struggles of waste management. Two of the dumps alone covered almost 100,000 square meters and received more than 450 tons of waste daily. With the closing of the open dumps, the AMA opened Achimota transfer station, located near Greater Accra and able to handle 1,200 tons of waste per day, as well as a mini transfer and a mobile transfer facility. Closing Accra's illegal open dumps has reduced indiscriminate disposal of waste and reduced the city's carbon footprint due to fewer vehicles travelling to disposal sites more than 30 kilometers from the city.

Equity

The city implemented a strategy which employed the informal waste workers who were working on the landfills, hiring them into formal jobs which allowed the city to expand the waste collection coverage. Since Accra started these efforts, 601 informal waste collectors have been registered. Officially recognizing Accra's informal waste collectors has increased collection of waste from 28 percent to 48 percent in just two years. The city also provided waiting areas at transfer stations, allowing waste collectors to sort the waste and store the recyclables, which they often sell to middlemen to increase their earnings.

Key lessons and how this might be used in your city

Formalize waste management to combat climate change

Since the closing of illegal waste dump sites and the opening of waste transfer centers, recycling has increased by 18 percent, reducing emissions but also creating a circular economy within the city. Since the new plants have opened, more than 6,500 tons of waste are delivered daily to the three new transfer facilities.

Involve the private sector to increase the project's scale

Motivation from the city government to better engage in the city's sanitation allowed Accra's metropolitan authority to establish a project based on private/public partnerships. By involving the private sector, the city was able to obtain funding for new and larger waste transfer stations, which can handle more than 1,200 tons of waste per day. It also allowed the city to innovate in new types of waste transfer plants, creating a mobile one and a compost-only one.

Increase waste collection efficiency through waste transfer stations

By building three new waste transfer stations across the city, waste collectors are able to make shorter trips and therefore speed up the collection process. Not only does this boost efficiency and increase the amount of waste that can be collected, it also reduces the air pollution levels.

The increased efficiency in waste collection and the closing of open air dumps reduced air pollution levels across the capital. It also improved water sanitation levels, and provided low-income households the access to waste collection and recycling services which had until then remained a privilege limited to few residents. The project was able to reduce emissions of odor and gases, while also lowering the risk of disease spreading among communities.

Create social inclusion and decent, secure employment through a city-wide project

Before the inclusion of illegal waste workers in the city, the informal waste collectors' work was perceived as undignified by the rest of society. Since the implementation of the new waste management system across the city, these workers' jobs have become legitimized and essential to the functioning and management of the waste collection process.

Project milestones

2016: Program initiation by Accra Metropolitan Authority (AMA)

May 2017: City closed all open dumps

May 2017: Opening of Achimota transfer station, with capacity of 2,000 tons of waste per day

2018: Project increased official waste collectors from 350 to 600 in two years

Cape Town, South Africa

Cape Town renovates for energy efficient homes and healthy residents

Focus Area:
Energy and Buildings

Cape Town's climate can be moist and cold, making its residents susceptible to tuberculosis and other illnesses, especially in low-income neighborhoods where housing often lacks the proper insulation. The City of Cape Town realized that by focusing on retrofitting ceilings in low-income communities, they can achieve multiple benefits: improving the health of the communities and the energy efficiency of the buildings.

Photo: City of Cape Town

The Mayor of Cape Town was the driving force behind this project ensuring its success, helping to bring funders on board for financing the growth of the retrofit program.

Health
Low-income communities in Cape Town are susceptible to tuberculosis, colds and other temperatures due to the moisture levels and low temperatures during the winter. Results from the pilot projects showed significant improvements in health and happiness of residents who received a new insulated ceiling, as well as reducing stress levels associated with financial burdens of energy and health care costs.

Climate Change
Insulated ceilings in Cape Town can reduce the fuel used to heat homes by up to 74% in the winter. To date, the program has retrofitted more than 10,500 homes. It is estimated that total impact of these retrofits so far will save approximately 7,400 tons of CO_2 each year. With the full expansion of the program to 40,000 homes, the City of Cape Town could see emissions reductions of up to 28,000 tons of CO_2 per year.

Equity
This project targets the low-income populations living on the outskirts of Cape Town, in areas that are vulnerable to heavy rainstorms, and wet and cold conditions. The residents in these communities have high transportation costs as they are not served by public transport. The ceiling retrofit program was created to improve the lives of these residents by reducing energy and healthcare costs through providing a more stable temperature in their homes. The retrofit project provided temporary jobs for over 2000 workers from the community.

Key lessons and how this might be used in your city

Ensure new buildings are built to standard alongside retrofitting old ones

As well as securing funding for the retrofitting project, the city knew that the negative impacts of inadequate insulation was a wider problem needing greater attention. The team brought the issue to South Africa's national government, and in 2015 subsidy regulations for new low-income housing were changed to include proper insulated ceilings. The City of Cape Town knew that it is more cost efficient to design and build homes with adequate insulation than to retrofit existing homes.

Pilot a project to better understand the needs

Two pilot projects were completed in two low-income communities and included the wages of 2,350 temporary local workers. These were led by the NGO SouthSouthNorth. One project was funded by the Danish International Development Assistance Urban Fund, and the other was funded by the Department of Environment and Tourism's Social Responsibility Programme and the Provincial Government's Department of Housing. These projects integrated numerous solutions for retrofitting the homes. Through the results from the two pilot projects, the city learned where to focus its investment for the project roll-out.

Secure a project champion for growth and success

Following the pilot projects, Mayor Patricia de Lille celebrated their success and took a front seat in helping to prepare the project for the large roll-out. The City of Cape Town was able to secure external funding from South Africa's Green Fund. With this funding, the city would typically provide just 10 percent of the project cost.

Teach communities how to maintain systems and live smart

A portion of the funding for this project was allocated for local education and training, addressing how to install and maintain new ceilings and how to live more healthy and sustainable lives. The training and development involved a diverse group, including women and young people; out of 89 trainees, 51 were women with the majority being young people.

Evaluate the impacts

The city of Cape Town partnered with several organisations (ICLEI Africa, UK Government's Foresight Project, Migration and Global Environment Change group, Thrie Energy Collective) to carry out community surveys during the pilot projects and the larger project roll-out. The City was able to measure the impact the projects were having by collecting information on topics such as heating and fuel expenses, incidents of sickness, numbers of days missed at work due to sickness, and more.

Grow program for larger impact

By taking a community-by-community approach to this project and demonstrating the immediate impacts in each case, the City of Cape Town is able to look for creative pathways and funding models to scale the project. Continued monitoring will provide an extensive understanding of the long-term impacts in these low-income communities.

Project milestones

August 2008: First pilot project initiated

2010: Second pilot project undertaken

October 2010: First pilot project completed

Following the pilot projects, community surveys were conducted in 2011 to understand where to focus investments for the project roll-out. The City of Cape Town secured the Green Fund funding for the project roll-out in 2014. Between 2014 and 2017, ceiling retrofits were carried out in 8,001 homes in Cape Town.

Chennai, India

Chennai Framework guides effort to rapidly restore water bodies

Focus Area:
Adaptation (Water Management)

The city of Chennai has experienced rapid urbanization and now faces the dual challenge of annual droughts and heavy rainfall events. In 2015, a 100-year rainfall event caused loss of life and destruction of property valued at $20 billion, spurring creation of the Chennai Water Restoration and Resilience Framework to recharge aquifers and flood proof the city for the future. The Framework was designed to unify and scale the efforts of all organizations and citizens working on water body restoration.

Photo: Samiyar Kulam

A devastating flood event in 2015 claimed lives of over 300 people and displaced more than two million people catalysed this project.

Health

Chennai has some of the highest rates of diabetes in India. The 210 restored ponds will benefit citizens greatly by providing access to space for exercise and physical activity. One million citizens used the public space created from the pond restorations in the first year of the project.

Climate Change

Many of the pond areas being restored as part of the framework were once informal dump sites, and an estimated 420kg of CO_2 emissions will be prevented each year due to the restoration of these sites. The projects are boosting biodiversity in the restored water ponds; since the project started, three endemic species of flora and fauna have recolonized the sites. As extreme weather events increase with climate change, Chennai is adapting to become more resilient to these impacts.

Equity

The project is creating and increasing the amount of shared space for citizens to socialize and exercise. Many of the ponds are located in the most vulnerable communities in the city, where people live in informal settlements. The framework addresses the needs of these communities and is increasing their resilience to extreme weather events. The decreased risk of storm-related damage means that local residents and businesses can invest more in their property, boosting the local economy.

Key lessons and how this might be used in your city

Use creative finance models

The City of Chennai used a creative finance model, leveraging public funding as well as private funding from corporations and NGOs, via the 'Adopt a Water Body' concept. Through this program, local communities and corporations based in the city can pool funds and take ownership of any one of the water bodies needing to be restored and maintained.

Build a coalition of willing through engagement

Due to the devastating flood and drought events affecting citizens of Chennai, the public is committed to the project's success and has a desire to contribute. The city is encouraging citizen participation via community events and training of local volunteers to maintain the water bodies, including checking water quality parameters to update authorities. An internet-based platform was created to coordinate the numerous water restoration projects underway in Chennai. The platform is accessible to anyone interested and provides details on all projects, including completed projects, as well as connections to technical experts and interested organizations.

Design projects to scale

Chennai designed this project to be scalable, to activate public, private and community stakeholders in a joint effort to rapidly restore as many water bodies as possible. Each pond has a customized and comprehensive plan drawing on technical expertise from researchers and engineers as well as local knowledge, and engagement of community volunteers to maintain and monitor the project. Ambitions are scaled in the next phases of the project, increasing the number of water bodies restored from 210 to 460, and subsequently 1200+ more upstream from the city.

Invest in the future

The frequency of extreme weather events in Chennai is increasing, with each year bringing millions of dollars of damage. While the restoration will cost an estimated $15 million, in only two years the city anticipates a return on the investment via a reduction in damages.

Directly involve multiple government departments for stronger implementation

The municipality created the Chennai Water Restoration and Resilience Framework in coordination with other state departments and works to assign clear roles and responsibilities to the various stakeholders. To ensure that complex issues are addressed in an integrated way, the City of Chennai has developed a communications channel with associated departments that are not directly involved in the restoration projects, such as the Tamil Nadu Slum Clearance Board (TNSCB) for low income housing, and Greater Chennai Corporation (GCC) for solid waste management.

Project milestones

2016: Urban Flood Management Summit convened to learn best practices from cities adapting their water management approaches to climate change

2017: Appointed a Chief Resilience Officer, conducted multiple citizen surveys identifying water systems as one priority area

Inspiration

As part of 100 Resilient Cities, Chennai and the Rockefeller Foundation convened an Urban Flood Management Summit in 2016, introducing international best practices that could help Chennai and other cities facing similar threats. These included Georgetown (Guyana), Lent (Netherlands), Jakarta (Indonesia), New Orleans (US) and Surat (India).

Chittagong, Bangladesh

Shelter and evacuation planning for people with disabilities in Chittagong

Focus Area:
Adaptation
(Flooding)

Bangladesh is extremely vulnerable to climate change, from flooding events, rising sea levels and increased extreme weather events. Chittagong, a coastal city, is affected by floods and cyclones every year. The city's infrastructure is not adequate to withstand these events, so emergency shelters are used in these instances to keep citizens safe. People with disabilities traditionally did not travel to the city's emergency shelters as the shelters themselves, and the evacuation boats to get to there, were not accessible. Through a disability-inclusion upfitting and construction project, Chittagong's flood shelters and evacuation boats now have accessible ramps and facilities that people of all abilities feel confident using.

Photo: WRI

Health
People with disabilities were not evacuating their homes when flood and cyclone warnings were issued, putting themselves at extremely high risk of fatal incidents or injuries. By ensuring that evacuation measures are accessible to everyone, this project has reduced the health risks that people with disabilities face during extreme weather events.

Climate Change
In Chittagong alone, 2,500 emergency shelters have been constructed since 1970 that are not accessible for people of all abilities. As the city continues to enact evacuation measures that address the increasing number of extreme weather events, it is now ensuring that all of its citizens are able to access response facilities. As a result of this disability-inclusive approach, the community was better able to assist people of all abilities when Cyclone Mahasen hit in 2013.

Equity
According to the World Health Organization (WHO), 15 percent of the world's population lives with some form of a disability. People with disabilities are typically among the most vulnerable and disadvantaged population. This project focused on including people with disabilities in Chittagong's resilience planning efforts to ensure they are able to evacuate when floods or extreme weather events occur.

Key lessons and how this might be used in your city

Consult and act on the recommendations of affected people

To ensure that this project was inclusive and that the outcomes would have the intended benefits for everyone, Chittagong created Shelter Management Committees for making decisions on the upfitting or construction of shelters. At least ten percent of the members of each sub-committee were people with disabilities, giving them meaningful input into the changes to the emergency facilities. The committees meet on a regular basis to coordinate awareness-raising and preparedness efforts.

Develop partnerships for project success

Chittagong worked with the Centre for Disability in Development, an organization that works to include people with disabilities in development and humanitarian relief efforts in Bangladesh. Through this partnership, Chittagong leveraged the organization's expertise and past experience to ensure that the upgrading of the emergency shelters was inclusive and impactful.
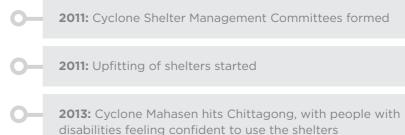
Educate citizens for community ownership and contribution

The committees organized training sessions in all Chittagong communities to train local volunteers in the key steps for disaster response for people with disabilities. Over 900 people participated in simulation exercises to learn how to help people of all abilities evacuate when flood or cyclone warnings were issued. Aside from the increased access to emergency shelters for people with disabilities in Chittagong, this project has changed communities' attitudes toward people with disabilities, treating them with greater respect and accommodating their needs.

Encourage innovation from local actors

Following floods that affected the city in 2015, a competition was held with students from Chittagong University of Engineering and Technology and Premier University to design a house prototype that was accessible for all and resistant to flash floods. The competition was run in collaboration with the Centre for Disability in Development, CBM (the global disability charity) and the Bangladesh Government, and the winning model was proposed as a new design for housing in an advocacy campaign run by the collaboration. Students taking part in the competition met with the affected communities and learned about the needs of peoples with disabilities.

Project milestones

○— **2011:** Cyclone Shelter Management Committees formed

○— **2011:** Upfitting of shelters started

○— **2013:** Cyclone Mahasen hits Chittagong, with people with disabilities feeling confident to use the shelters

London, United Kingdom

Healthy Streets for all Londoners

Focus Area:
Transport, Land Use and Urban Planning

Facing an inactivity crisis, as well as dangerous levels of air pollution, London adopted the Healthy Streets Approach. This is an evidence-based approach developed by public health and transport specialist Lucy Saunders for creating fairer, sustainable, attractive urban spaces. The Healthy Streets Approach promotes a series of policies and strategies that deliver streets where all people choose to walk, cycle and use public transport.

Photo: Lucy Saunders

Source: Lucy Saunders

Embedding the Healthy Streets Approach into numerous strategies, rather than just the Mayor's Transport Strategy, enabled this to scale from a single policy idea to an approach to plan the entire city.

Health

More than 40 percent of Londoners are not achieving the recommended 150 minutes of activity a week, and 28 percent get less than 30 minutes a week. Data shows that if all Londoners walked or cycled for 20 minutes every day, it would deliver at least an additional 60,000 years of healthy life in preventable illness and early death each year, and save over £1.7 billion in National Health Service (NHS) costs over 25 years. London Healthy Streets has a strong focus on the health benefits of active travel, both physical health and mental health through reductions in depression and anxiety.

Climate Change

Road transport is responsible for 50 percent of the main air pollutants in London. Reducing the number of trips taken by cars, through improved walking and cycling facilities and more reliable public transport, has an important role to play in improving air quality in London. The greater number of trees and green spaces in the streets also helps to mitigate the impacts of air pollution, increases biodiversity, and improves London's resilience to climate change, such as extreme weather events like flooding and heatwaves.

Equity

Healthy Streets Approach is measured against ten evidence-based indicators, several of which look at the inclusivity of street level services, as well as reducing health inequalities.

Key lessons and how this might be used in your city

Integrate the frameworks across multiple city strategies to drive transformational change

The City of London integrated the Healthy Streets Approach within all mayoral policy and strategy documents to ensure its effective delivery across the city. First included in the Mayor's Transport Strategy, Healthy Streets is now included in the Health Inequalities Strategy, The London Plan, the wider London Environment Strategy, the London Housing Strategy, Policing and Crime Plan, and the Economic Development Strategy. This encourages cross-team coordination, and clearly defines each department's responsibility in delivery of the project. In addition, the procedures in place in London mean that after the publication of the Mayor's Transport Strategy, each of the 33 boroughs within London have to respond with local strategies for implementing the wider strategy in their borough.

Develop partnerships for project success

London partnered with walking and cycling charity Sustrans to manage a network of 'Healthy Streets Officers' in each borough, to amplify the project message and maximize impact while keeping costs low. These officers are local champions who encourage people to walk and cycle in the city and discourage vehicle idling, and who partner with local schools, businesses and communities. As part of this partnership, Sustrans is working with an inclusive cycling expert to address the gender, race and socioeconomic class disparities in cycling.

Target programs and partnerships to reach under-represented groups

Community-led projects are at the heart of the success of Healthy Streets, and London has made a great effort to reach the typically harder to reach communities for a bottom-up approach. Transport for London has set up a grants program, run with delivery partner Groundwork London, enabling community and not-for-profit groups to implement projects encouraging Londoners from traditionally under-represented groups to walk or cycle. Funding for the grants program increased to over £500,000 in 2019, enabling more than 60 community-led projects, with a target to fund at least one project in each of London's 33 boroughs.

Embed the Healthy Streets Approach at all levels for a long-term transformation

To deliver the Healthy Streets Approach and ensure long-term, city-scale implementation, London defined three levels for policy making, delivery, and measurement and evaluation. These were:

- Street level: creating space for walking and cycling, as well as enhancing streets with seating, shade and greenery.

- Network level: planning and managing London's transport networks to increase their reach, affordability and reliability.

- Strategic level: spatial planning and policies for development and regeneration so the Healthy Streets Approach is embedded from the outset.
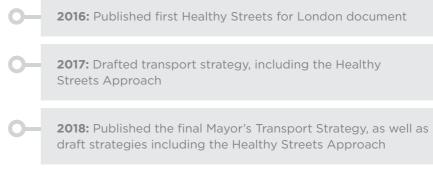
Map the city population and target investment to support vulnerable groups

Transport for London used data available to the city from central UK Government statistics, looking at indices of multiple deprivation, as well as the standard sets of transport data available to them when developing the Healthy Streets for London Strategy. Using this information, the city was able to understand where the most vulnerable Londoners live, work and shop and identified the strategic traffic-dominated roads to invest in walking and cycling projects for greatest impact.

How is London measuring the success of Healthy Streets?

London created the TfL Scorecard, a tool that monitors and drives the performance of Transport for London against the objectives set out in the Mayor's Transport Strategy, the Business Plan and the Budget on a yearly basis. The Healthy Streets Approach is one of the key objectives that performance is measured against within the Scorecard review. Updated annually to ensure that longer-term targets of the Mayor's Transport Strategy are progressing, the TfL Scorecard also feeds into senior managers' annual performance reviews so successful delivery of Healthy Streets in London is embedded right down to the staff level.

Project milestones

2016: Published first Healthy Streets for London document

2017: Drafted transport strategy, including the Healthy Streets Approach

2018: Published the final Mayor's Transport Strategy, as well as draft strategies including the Healthy Streets Approach

Following the publication of the 2018 Mayor's Transport Strategy, the Healthy Streets Approach was drafted into other strategies for the planning of London. In the 2018/2019 update of the TfL Scorecard, Healthy Streets was included as a key outcome for performance measurement.

Milan, Italy

Comprehensive Urban Food Policy in Milan

Focus Area:
Food Systems and Food Secturity

With food being the largest source of consumption-based emissions, the Municipality of Milan has taken a holistic approach to upheaving the urban food system to improve both the diets of its citizens and the overall sustainability of the system. Milan is reducing food waste, increasing sustainable local food procurement, and transitioning toward a circular economy.

Photo: City of Milan

Hosting the World Expo in 2015, with themes around art and food, put Milan at the center of a world debate about food systems and prompted the city to establish a legacy from that event. That legacy was the Milan Food Policy.

Health

The Milan Food Policy aims to ensure healthy food and water for all citizens, particularly focusing on increasing the social benefits and quality of life of vulnerable populations. The city established 'Milano Ristorazione', an organization that directly manages school cafeterias and serves 85,000 healthy, nutritious, organic meals across Milan daily.

Climate Change

Promoting sustainability throughout the whole food chain and reducing food waste are two of the key principles in the Milan Food Policy. 'Milano Ristorazione' serves food that is produced locally, with a short distribution chain, and has banned the use of plastic tableware in school cafeterias. This plastic ban will save 240,000kg of plastic a year. Through school feeding programs, children have received 31,000 reusable takeaway bags to take leftover food from school lunches, resulting in 17 percent reduction of food waste from schools.

Equity

The Milan Food Policy supports food-insecure residents through local food banks and charities, and children in poverty through school feeding programs. Milan is also ensuring that it procures food to feed its citizens from the surrounding rural areas and is supporting farmers within the region by reducing processing costs for them. Through a public-private partnership in the region, the Milan Food Policy has facilitated the creation of 19 horticulture supply chains for farmers to sell their produce to food suppliers in Milan. The policy has created jobs in urban agriculture through a start-up incubator funding program.

Key lessons and how this might be used in your city

Address the system as a whole for big impact

Rather than focus on one part of the food sector in Milan to improve or replace, the city looked at all components and how to improve the system as a whole. The city identified five key priority areas:

- Ensure healthy food and water for all citizens.
- Promote the sustainability of the food system.
- Promote food education.
- Fight food waste.
- Support scientific research in the agrofood sector.

The policy takes three approaches: 1) it create new projects that generate institutional legacy; 2) it streamlines existing activities; and 3) it builds new incentives that are capable of generating impacts. Milan's rigorous policy writing process for the Milan Food Policy has been recognized as a European best practice for Responsible Research and Innovation.

Establish governance systems and tools to monitor success

Milan established the Metropolitan Food Council and the Milan Food System Assessment Monitoring Framework for the successful implementation of the policy across the city. Through this assessment, implementation of and progress against the five key food policies is monitored across a complex multilevel governance system that incorporates the engagement of different municipality departments, universities, civil society and private sector actors. The Assessment also ensures that the policy is having impact on an identified list of ten issues, such as access, education, finance, trade and environment.

Engage all stakeholders for policy backing

Following an initial analysis of the food system in Milan to identify the main issue areas, the second phase of developing the Milan Food Policy was devoted to public consultations. Over a five-month period, approximately 700 stakeholders, including representatives from the nine neighborhoods in Milan, were involved in the consultations that drafted and approved the first version of the comprehensive food policy for Milan to form the foundation of the discussions of the city council that would make the final decisions.

These consultations were supported by the Cariplo Foundation, a grant-making organization and co-funder of the initiative with the Municipality of Milan.

Incentivize participation for stakeholders

Milan introduced a waste tax reduction of 20 percent for food businesses (supermarkets, restaurants, canteens, producers, etc.) that donate their food surplus to charities. In 2018, the tax reduction policy recovered 660 tons of food, which was redistributed through local food charities and food banks to vulnerable communities. Additionally, Milan is supporting scientific research institutes within the city to improve the food exchange processes within the municipality and develop cutting-edge technologies.

Create opportunities for international peer exchange

Another legacy from the 2015 World Expo was the creation of the Milan Urban Food Policy Pact. This pact is an international protocol launched by the Mayor of Milan aimed at tackling food-related issues at the urban level, which can be adopted by any city around the world. Signed by more than 160 cities worldwide, signatories of the pact continue to exchange good practices and have access to regional working groups. Through this international diplomacy action, Milan activated strong relations with other cities, organizations and networks.

Project milestones

2014: Milan started an action-research process that produced an analysis of its food system (articulated in ten main issues)

February - June 2015: Public consultations launched with all city departments, universities, civil society organizations, start-ups, private sector, community groups

2015: Established five key priorities, 16 guidelines and 48 actions of the Milan Food Policy. In the same year, Milan hosted the 2015 World Expo on the theme "Feeding the Planet, Energy for Life"

2016: New Mayor Guiseppe Sala enacted the Milan Food Policy

Following the enactment of the Milan Food Policy, the city established a Food Policy Office in 2017 that is overseen by the deputy mayor in charge of food policy. In 2018, the city completed the establishment of the Metropolitan Food Council to coordinate the efforts of the multiple actors and monitor progress.
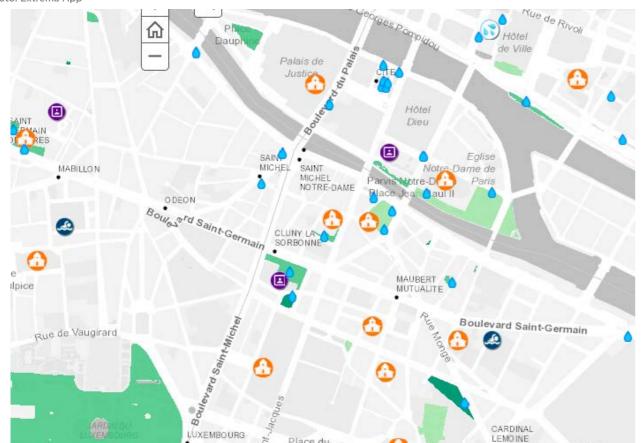
Paris, France

Mapping cool city networks to find refuge from heat waves

Focus Area:
Adaptation
(Heat)

In summer 2019, the temperatures in Paris soared to a record 42.6°C (108 °F) during a heat wave that killed approximately 1,500 people across France. With increased summer heat waves across France, the City of Paris decided to digitally map its network of cool islands, allowing citizens to find the closest spots to seek refuge from the heat. The project resulted in the creation of the Extrema Paris app, created in collaboration with the National Health body, Ecole des Ingenieurs de la Ville de Paris (EIVP), Atelier Parisien D'urbanisme (APUR) and the French meteo channel, Meteo-France.

Photo: Extrema App

After a discussion with the National Observatory of Athens, the City of Paris was inspired to map its "cool islands" in order to better understand the infrastructure available to its citizens in times of extreme heat.

Health
Increasingly, heat waves are causing unusually high temperatures, affecting the health of many Parisians. As a result of a lack of infrastructure and appropriate policies, residents were affected by heat related illnesses and death. During the 2019 heat wave in France, 1,500 deaths were recorded due to a lack of access to cooler environments. In response, the City of Paris developed the Extrema Paris app, in collaboration with the national health body, to provide information on where "cooling stations" can be found across the French capital.

Climate Change
Following a discussion with the National Observatory of Athens, Paris initiated a project to map its "cool islands" to determine which areas of the city can provide refuge during times of extreme heat. These cool islands consist of shaded parks, green squares, trees, and fountains, as well as infrastructures like swimming pools, museums, malls, etc., which can act as refuge for Parisians. The City of Paris' Climate Adaptation Strategy (2015) establishes that all cooling stations should always be within seven minutes of a pedestrian. As a result, The City of Paris launched a project which would map the city's "cool islands" every summer and make it accessible to all Parisians. The Exterma Paris project incorporates that information into an app, making the information more accessible and creating a tool for residents to access greener and cooler spaces.

Equity
More than 7,000 Parisians have been identified as vulnerable during extreme heat, mostly elderly people and young children. Heat waves also have a dramatic effect on economic productivity, sometimes reducing productivity by one-third. By developing the Extrema project, the City of Paris was able to inform its residents about how and where to cool off, while maintaining their health and economic productivity. The app maps more than 800 sites across the city, which are generally free to access. Developing an app also ensured the information was be widely available, as it can be downloaded on any type of smartphone for free.

Key lessons and how this might be used in your city

Use the power of technology and community to address an environmental and social challenge

Through the development of an app, which geolocates the user to suggest the closest cool spots from their location, inhabitants of Paris have become more aware of the importance of green and cool areas in the city in times of extreme heat, while promoting a safer lifestyle in these climate conditions. Mapping these cool spots has also allowed the city government to identify areas which lack "cool islands" in order to develop future infrastructure projects.

Turn an institutional map into a publicly accessible tool

Deciding to transform the output of an institutional project into an app has allowed detailed, city-focused information to become accessible and of use to a wider public. The City of Paris turned this map into an app that is free to download from any smart phone app store. As a result of the app's accessibility, the city noticed increased downloads before the July 2019 heat wave in Europe.
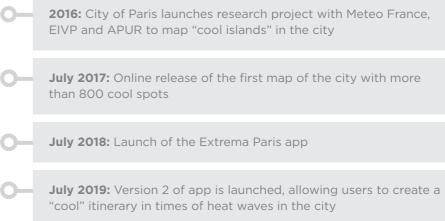
Using the city's public institutions to create an interdisciplinary project

The mayoral office collaborated with the national French weather organization to get live information on changes in temperatures; with the national French health ministry to get information on the health impacts of heat waves and provide warning information in case of extreme heat; with APUR, the City of Paris's urbanism firm, and with EIVP, the school of engineers of the City of Paris, which designed the map and app configuration.
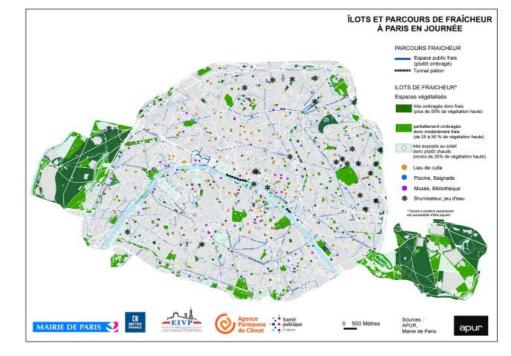
Help citizens find cooler routes to walk around the city

Due to the success of the Paris Extrema App, the city released an updated version of the app in summer 2019 which added a new functionality. It allows users to create a "cool" itinerary when moving around the city by foot. In turn, this has changed the way citizens would normally use public space, as the app takes users through more green and blue spaces, museums, etc.

Project milestones

2016: City of Paris launches research project with Meteo France, EIVP and APUR to map "cool islands" in the city

July 2017: Online release of the first map of the city with more than 800 cool spots

July 2018: Launch of the Extrema Paris app

July 2019: Version 2 of app is launched, allowing users to create a "cool" itinerary in times of heat waves in the city

A map of all of paris 'cool spots' broken down by type. Photo: City of Paris

Quito, Ecuador

Violence free metro system in Quito

Focus Area:
Transport

In 2017, the city of Quito implemented the "Bajale al Acoso" (lowering harassment) campaign. As part of that campaign, Quito's town hall also set up a strategy called "No Harassment in the Metro" to ensure the city's metro becomes free of sexual assaults. This strategy was the mayor's project to combat climate change and gender based violence simultaneously. As a result, the city improved its transport infrastructure, while educating city transport staff and creating a safe environment for women to have more agency and mobility in the city.

Photo: City of Quito, IDB

Health
According to the World Health Organization (WHO), an estimated 4.2 million premature deaths are attributed to outdoor air pollution. Transport is one of the biggest contributors to particulate air pollution, which is due in part to the use of old diesel vehicles and the lack of public and active transport networks. As one of the campaign's objectives was to improve the city's overall transport infrastructure, Quito was able to improve air quality along with residents' health. The use of public transport has helped city residents adopt healthier lifestyles by being more active. Increases in mobility also led to improvements in the population's mental wellbeing and sense of safety due to significant reductions in gender based violence (34.5 percent since the beginning of the campaign in 2017).

Climate Change
Located at 3,000 meters above sea level and in mountainous terrain, Quito experienced major traffic congestion which created increased demand for public transportation. As a result, the city constructed the capital's first metro line in 2012. This saved the city more than 30,000 tons of CO_2 emissions that would otherwise be produced by motorized vehicles. Nonetheless, because of gender based violence, particularly in public spaces, city residents would not use public transportation for safety measures; this, in turn, led residents to use more private transport than expected. As the "Bajale al Acoso" campaign pushed for improvements in the transport infrastructure and greater safety, more residents are using public transport and therefore reducing CO_2 emissions.

Equity
Quito participated in the United Nation's Safe Cities and Safe Public Spaces project. According to municipality statistics, 91 percent of women in Quito reported having experienced some type of aggression (verbal, physical, sexual, etc.) in a public space. Moreover, more than 80 percent believe public transportation is unsafe, and 63 percent reported that they conclude all activities before 6 pm in order to be home before sundown. By placing the issue of gender based violence at the core of the new transport policy, women and discriminated residents can feel more included in society as they feel safer travelling around the city on their own - providing them with more mobility and agency.

Key lessons and how this might be used in your city

Improving safety on transport leads to greater agency and mobility

More than 80 percent of the city's residents believe that public transportation is unsafe; consequently, more than half of Quito's population would stop all activities before 6 pm to get home safely. By implementing a transport policy which creates greater safety, residents are able to increase their agency and mobility. In turn, this has had a positive effect on the city's economy as everyone has equal agency to contribute to economic activities.

Using infrastructure to create a safer space

To reduce violence in the transport system, a few measures were implemented. For example, one of the key objectives of the new policy was to improve the city's transport infrastructure. This led to a new approach to municipal transportation in Quito which resulted in a remodeling of 43 of 44 trolley stops. New safety criteria included transparent glass corridors to provide safe and secure waiting areas.

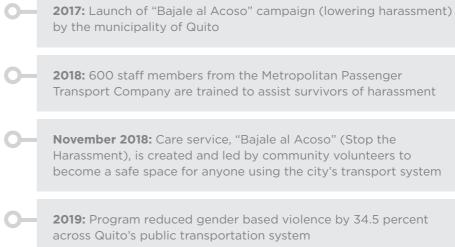## Training the staff and care service

Another facet of the policy included training 600 staff members as part of the Metropolitan Passenger Transport Company to assist survivors of harassment that is often a precursor to violence. Care services called "Bajale al Acoso" (Stop the Harassment) were also created in five of the major metropolitan transportation stations. These care services were primarily led by community volunteers who were passionate about gender equity and climate change.

Collecting data helps highlight a project's impact

As a consequence of the new "No Harassment" campaign, the city also coordinated with the municipal crime observatory to monitor and routinely collect data on sexual violence in public spaces. According to Quito's municipal government, the campaign decreased gender based violence by 34.5 percent within the public transportation system. The policy proved that taking an inclusive and comprehensive approach to violence against women and girls can help achieve real change.

During the "Bajale al Acoso'' campaign, the mayor of Quito, Ecuador, witnessed increased protests by women against gender violence in public spaces. These were happening the same time the #MeToo movement was receiving global recognition. The mayor had already committed to make the city's transport network more resilient to the impacts of climate change, but used the issue of gender based violence to strengthen the rationale for improving the network's infrastructure and safety.

Project milestones

2017: Launch of "Bajale al Acoso" campaign (lowering harassment) by the municipality of Quito

2018: 600 staff members from the Metropolitan Passenger Transport Company are trained to assist survivors of harassment

November 2018: Care service, "Bajale al Acoso" (Stop the Harassment), is created and led by community volunteers to become a safe space for anyone using the city's transport system

2019: Program reduced gender based violence by 34.5 percent across Quito's public transportation system

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