



PROTOTIPOS DE
INFRAESTRUCTURA
PÚBLICA

PARA UNA
CIUDAD
DEL FUTURO



The image features a solid blue background with a complex arrangement of white rectangular shapes of various sizes and orientations. These shapes are scattered across the frame, creating a layered, architectural effect. Some rectangles are solid white, while others appear as thin white lines or borders. The overall composition is abstract and modern.

dérive LAB

Public Life, Built Environment, Everyday Objects

dérive LAB is a multidisciplinary laboratory that seeks to explore, understand and inspire other (new) ways of living and thinking about life in the City. Through research, design and action, we develop projects with impact on three specific scales: public life, the built environment and everyday objects.

Our work has been published on Archdaily, Coolhunter, Yorokobu, Archello, Divisare, Glocal Design Magazine, among other media, and exhibited at different venues and events such as the Observatory of the 11th Architecture Biennial of Sao Paulo, Museo de la Ciudad, in Querétaro, Casa de la Ciudad in Oaxaca, the World Bicycle Forum in Medellín, and others.

We dedicate a large part of our time to research and to create pedagogical on urban issues; as well as to training through courses and workshops and teaching in public and private universities.

derivelab.org



The background of the entire image is a solid, vibrant yellow. Overlaid on this background is a complex, abstract pattern of white geometric shapes. These shapes are primarily rectangles of various sizes, some of which are nested or overlapping. The arrangement of these rectangles creates a sense of depth and architectural structure, reminiscent of a stylized city map or a modernist architectural plan. The white shapes are distributed across the frame, with some areas being more densely packed than others.

PIP
for a city of the
future

PIP for a city of the future

06

The opportunity of public infrastructure

dérive LAB presented the proposal **Prototypes of Public Infrastructure for a City of the Future** whose aim is to develop a strategy that allows public buildings to be assumed as a space for climate change mitigation through the manufacture and development of basic monitoring system sensors and prototypes.

The project suggests the adaptation of technologies that generate data (on reduction of emissions, public transport, active mobility, air quality, solar and renewable energy, energy efficiency and noise) in order to have useful information for planning and decision-making for public policies, design guidelines and actions for climate change mitigation and a low-carbon future.

This proposal considers the General Direction of Architecture and Urban Planning of Jalisco's Public Infrastructure Secretariat as a local ally, as well as the General Strategic Coordination of Territorial Management.

The stations of "*Mi Macro Periférico*" (Peripheral Transport System) are considered as the main scenarios for the analysis and the implementation of monitoring systems.

PIP ciudad futuro

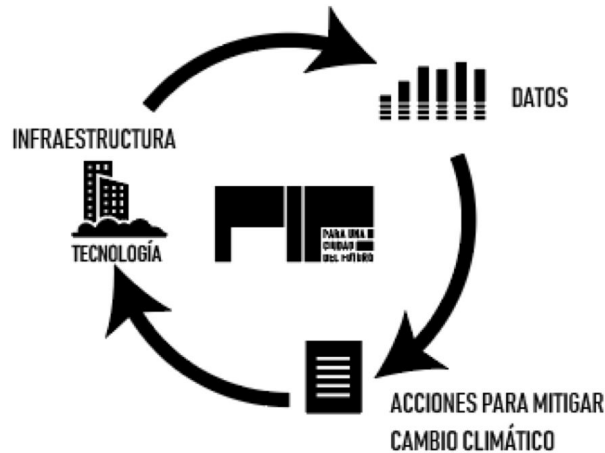


PIP ciudad futuro

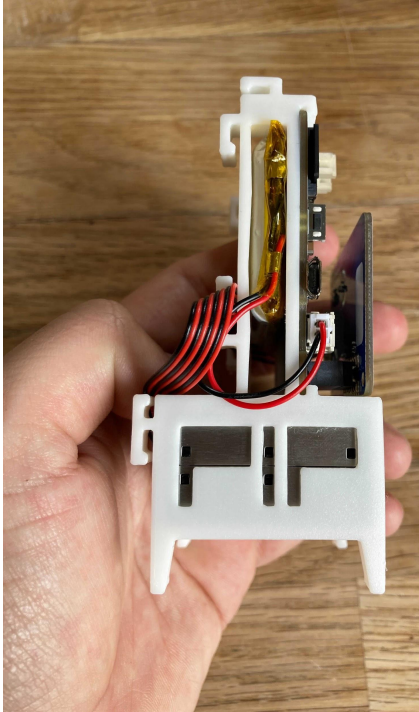


PIP ciudad futuro

The opportunity of public infrastructure



PIP ciudad futuro



The project gives data access to a network of specialists, urban planners, educators, independent organizations, private companies and government officials.

This implies an element of continuous and effective communication among stakeholders to guarantee the use of data and generation of up-to-date knowledge which is relevant to the current local needs.

The outcomes are available in a public repository on the project's website.

Case 1. Mi Macro Periférico



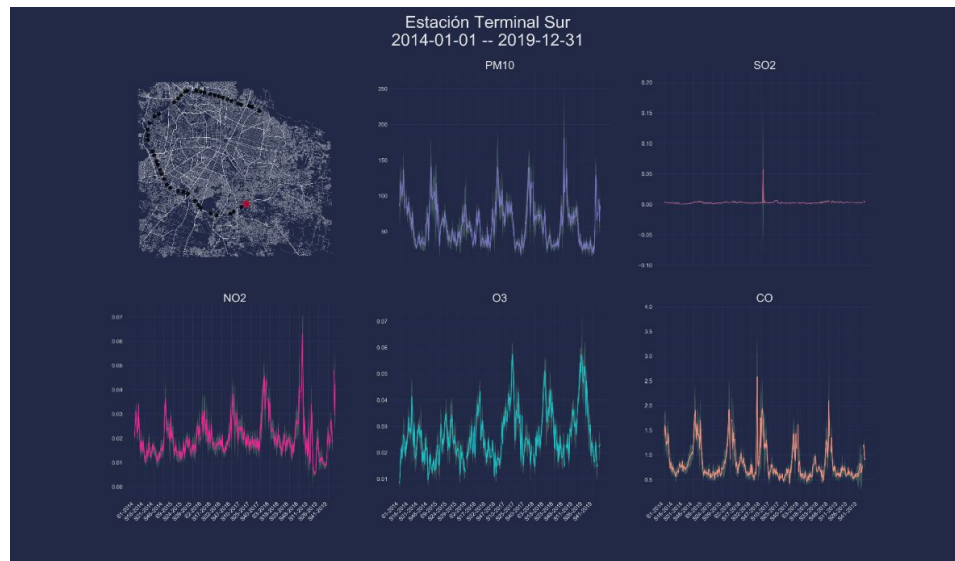
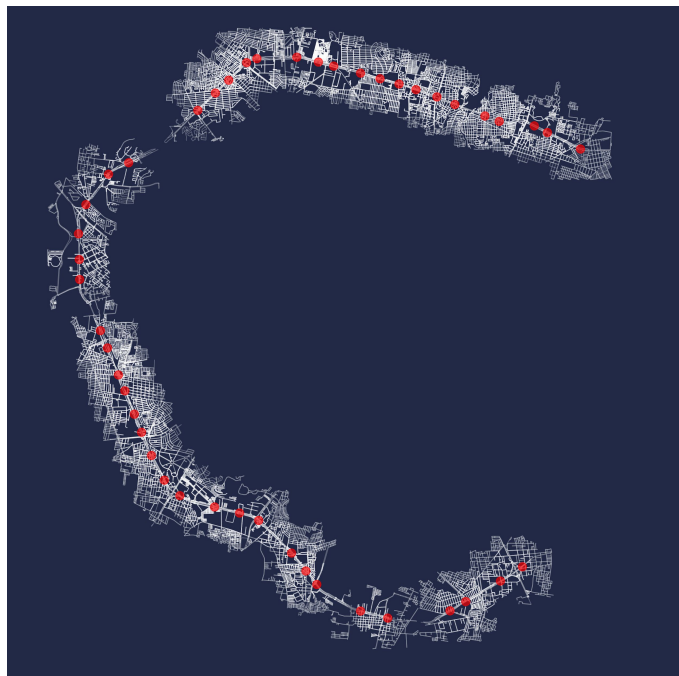
Using information from GEIE we were able to generate an environmental baseline to better understand the different scenarios and impact of the construction of the BRT system in Guadalajara Metropolitan Area (AMG)

The new BRT system Mi Macro Periférico is a peripheral infrastructure that will have 46 bus stations which will connect 3 different municipalities: Guadalajara, Zapopan, and Tlaquepaque.

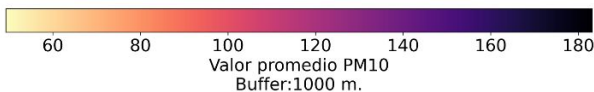
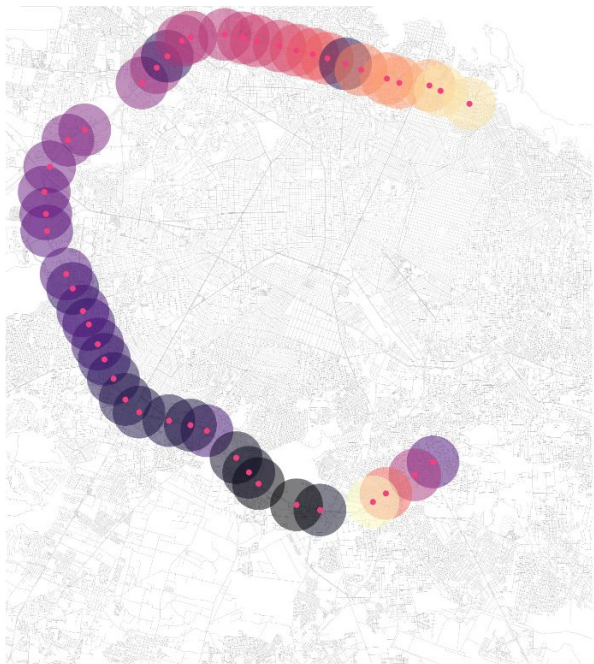
To obtain some information that was not yet available on GEIE, a grid interpolation was carried out in order to covers the area of the stations in all 3 different municipalities.

https://pipciudadfuturo.com/archivo/blog/reporte_de_impacto_medioambiental/

Análisis de 46 ubicaciones con información EIE



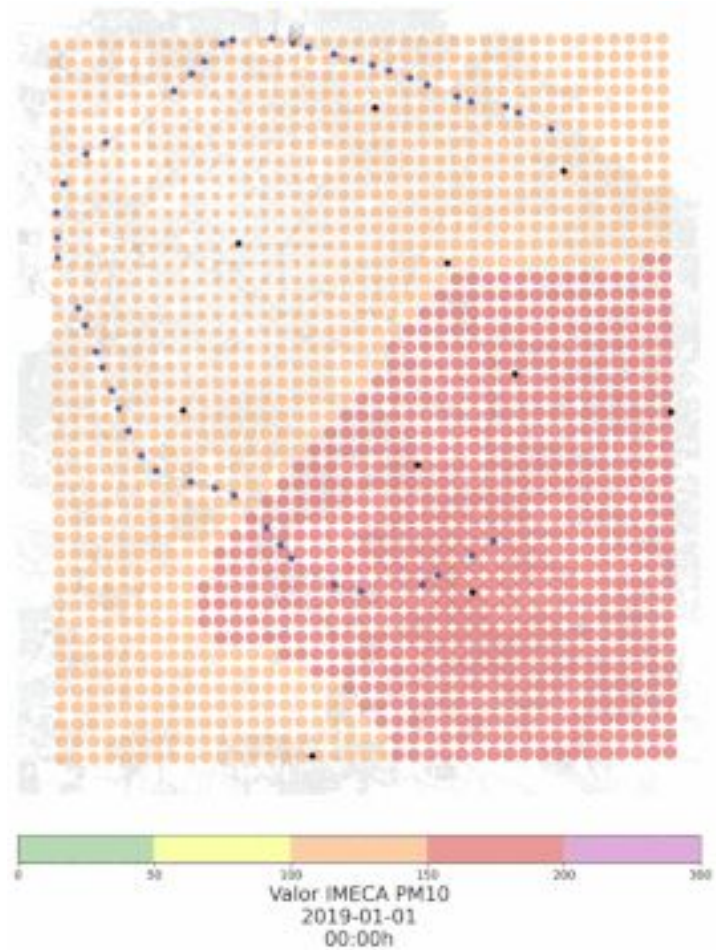
Análisis de 46 ubicaciones con información EIE



Also 4 prototypes of basic sensing and monitoring systems have been installed in 4 of the 46 stations of the BRT public transportation system called “Mi Macro Periférico” to collect data on air pollutants, solar radiation, energy efficiency, noise levels and GHG emissions from transportation.

This new data was added to create a new interpolation of pollutant values in monitoring stations which has also been contrasted with current monitor stations runned by the State Government.

https://pipciudadfuturo.com/archivo/blog/reporte_de_impacto_medioambiental/

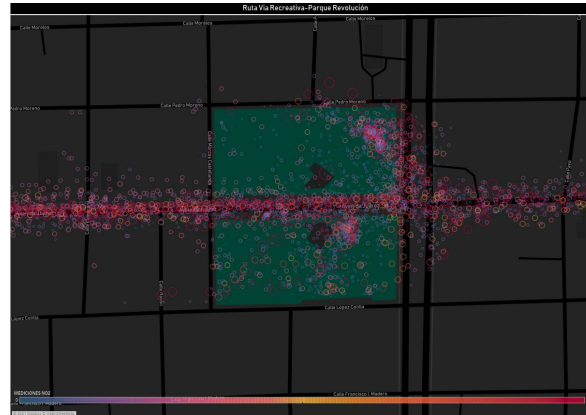


Case 2. Vía recreativa. Ephemeral infrastructure



Using mobile monitors and collaborating with the people coordinating the operation of the open streets program (Vía Recreativa) in Guadalajara and Zapopan, we were able to measure the environmental conditions of this ephemeral infrastructure of vital importance to the city.

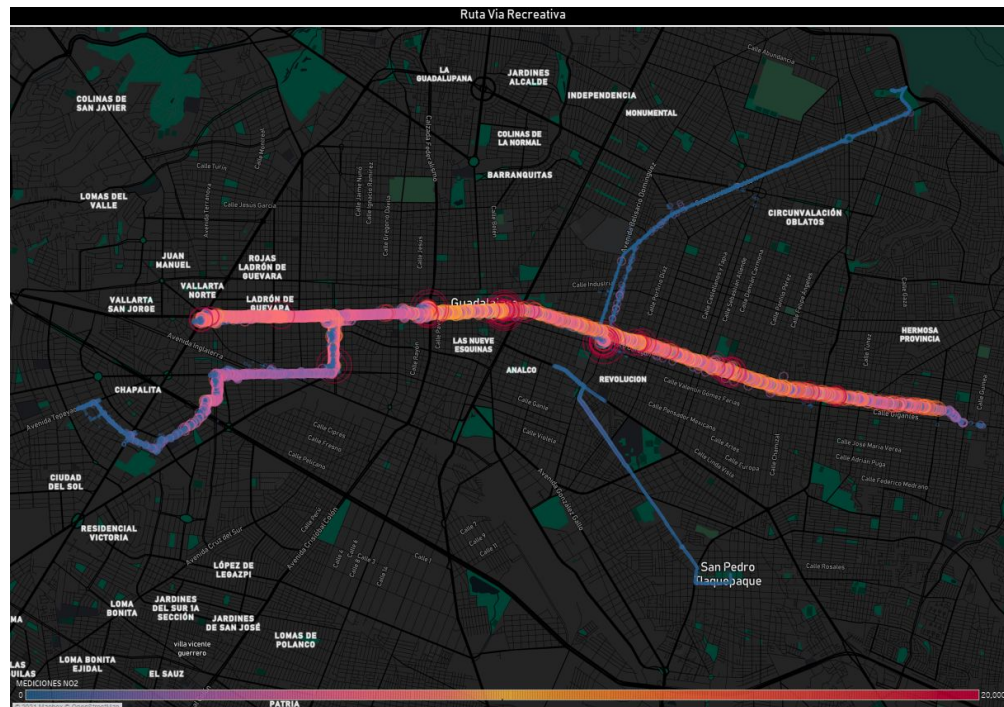
The recreational route has been key for the city in the current post Covid 19 situation.



Análisis de 46 ubicaciones con información EIE

It is estimated that before COVID 19 between 150,000 and 200,000 inhabitants used this recreational space on Sundays.

Being able to have hyperlocalized data on the air quality and pollutants has helped to better prepare activities that are offered, as well as to adapt design decisions, planning and implementation of the program.



Case 3. DIY sensors and PIPCiudadFuturo Citizen network



Local stakeholders, including academia, NGO's, private offices and interested and active citizens participated in collaborative workshops, where they worked with low-budget sensors such as Smart Citizen Kit and Flow by Plume Labs in order to collect environmental data and to explore ways of using the information to promote individual and collective actions towards climate change mitigation.

Examples of this were the use of the Smart Citizen Kit with girls from a local High School who explored potential uses of data generated by the sensors.

Similarly, the “Social Data Challenge” was organized by the Data Lab Community of Guadalajara to promote the use of open data generated by the PIP Ciudad Futuro sensors installed in the AMG.

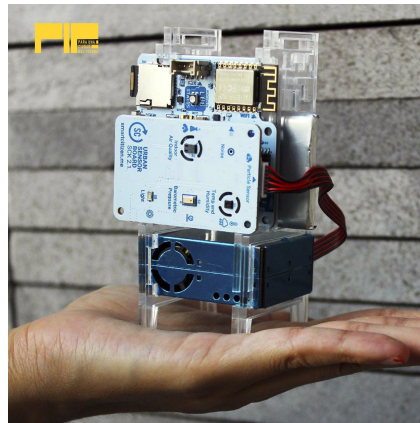
Different sensors



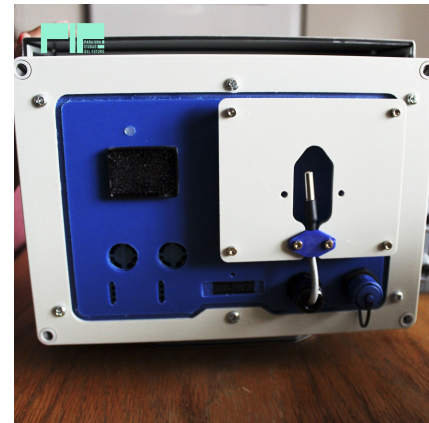
Telraam
<https://telraam.net/>



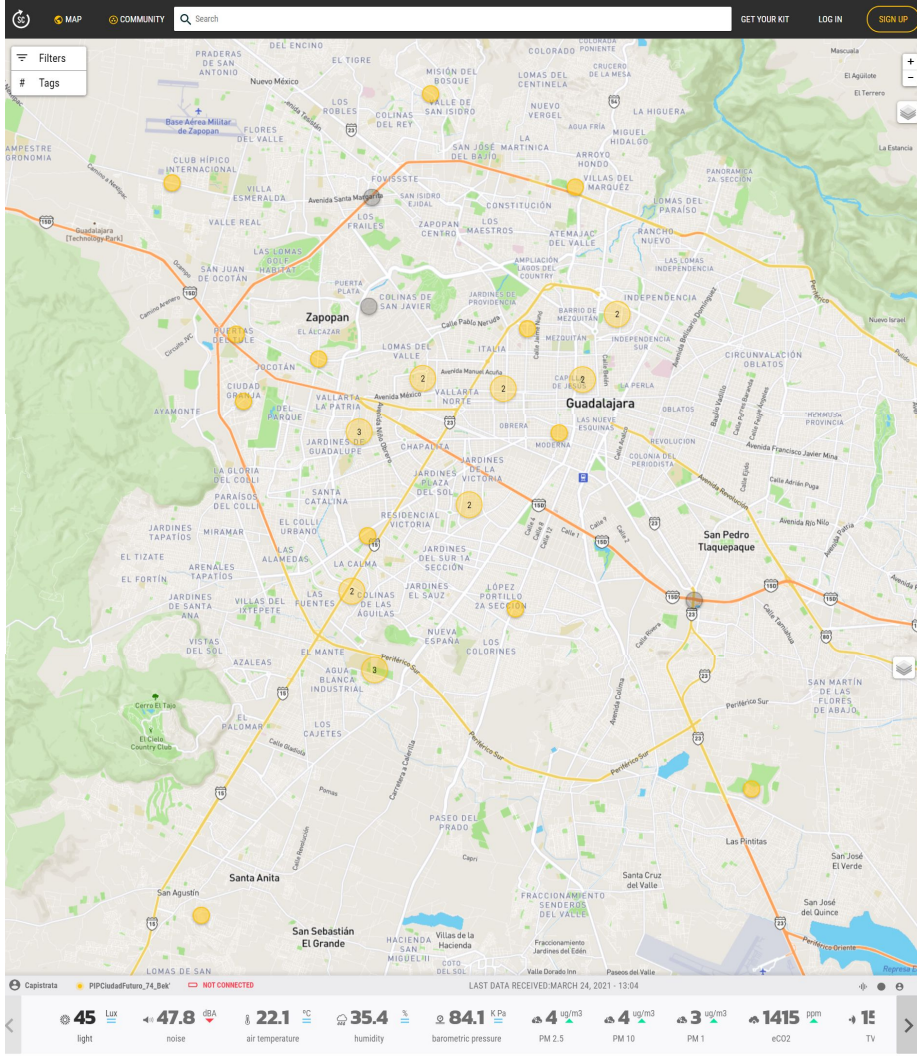
Flow
<https://plumelabs.com/en/>



Smart citizen kit
<https://smartcitizen.me/>



Smart citizen stations

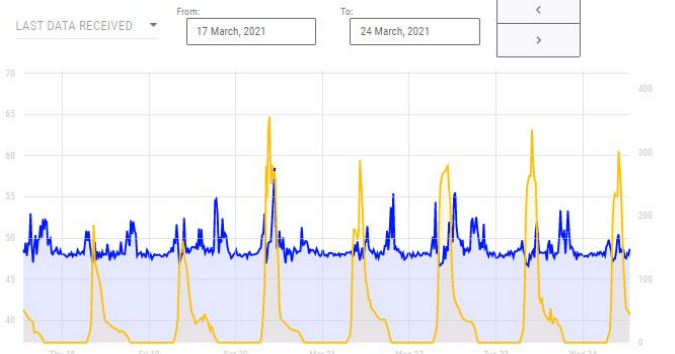


59.2 dBA

NOISE

noise
dB's measure sound pressure difference between the average local pressure and the pressure in the sound wave. A quiet library is below 40dB ... More info

Compare with LI...



PIP Ciudad Futuro_74_Bek

San Agustín, Mexico

Smart Citizen Kit 2.1 with Urban Sensor Board

HAS PUBLISHED

Smart Citizen Kit 2.1 with Urban Sensor Board

People looking for a better city

Smart Citizen is a platform to generate participatory processes of the people in the cities. Connecting data, people and knowledge, the objective of the platform is to serve as a node for building productive open indicators and distributed tools, and thereafter the collective construction of the city for its own inhabitants.

GET YOUR KIT AND JOIN US

ONLINE OUTDOOR INSIDE PIPCIUDADFUTURO GUADALAJARA

Feedback

One of the goals of the project was to share the knowledge generated by the PIP models, to allow its replication in other metropolitan areas with similar challenges, with the aim to support climate planning and action.

A series of guidance documents were developed concentrating experiences and recommendations for improvement. The documents provide technical guidance on the uses and benefits of *Google's EIE platform* and the monitoring and sensing systems including open data issues that may arise when implementing similar projects.



Case 4. Engaging the public. DIEX: Flor Urbana





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PIP future city

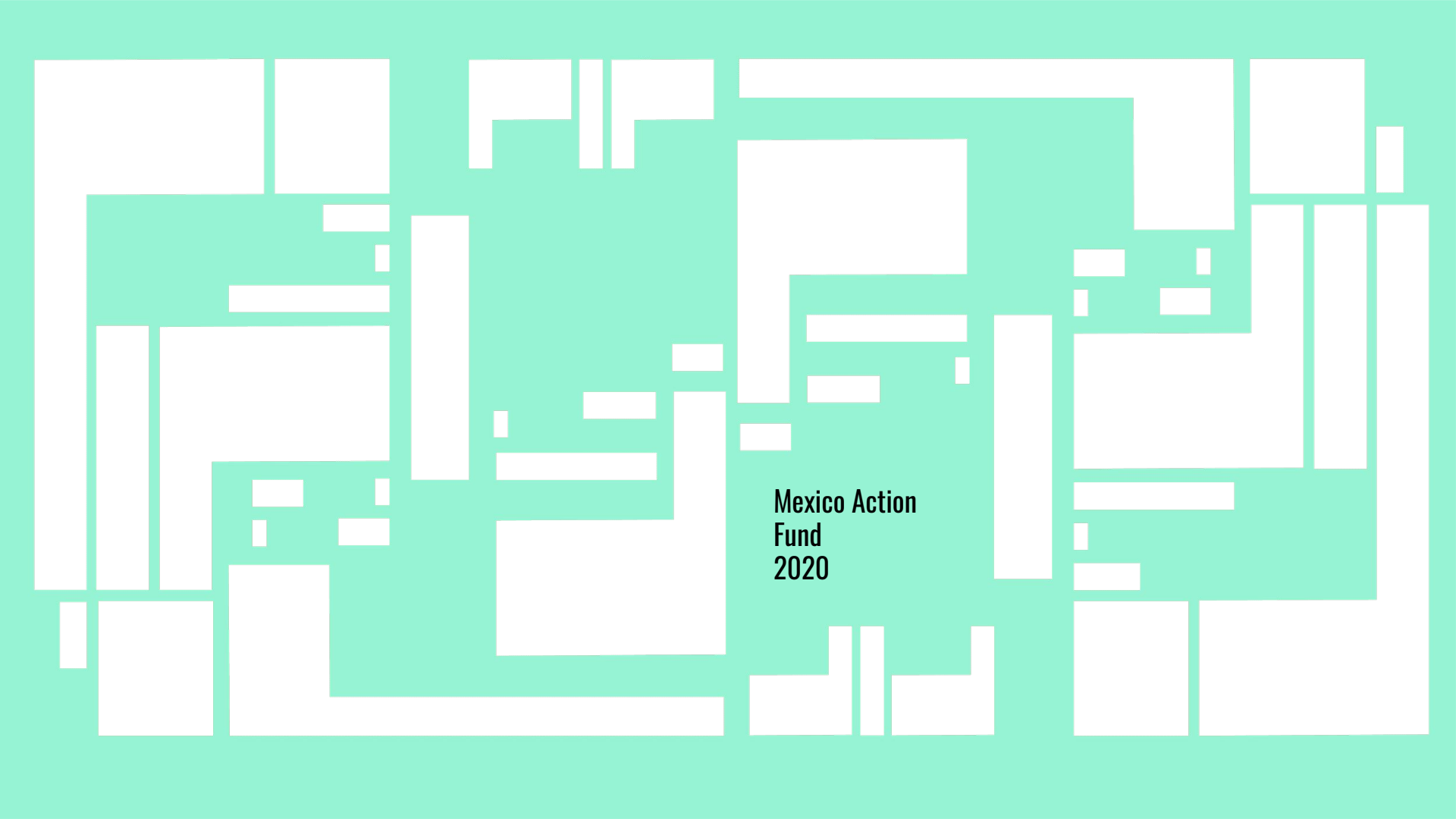


08

Components of the project

1. To define an **environmental impact baseline** to the GMA considering the 46 “*Mi Macro Periférico*” station’s polygon
2. To execute **participation workshops with experts communities** in digital fabrication topics, sensors and monitoring prototypes and data generation.
3. To develop, design and test at least **4 monitoring stations prototypes** which will generate emissions data in topics such as transport, air quality and others.
4. To design and publish **3 manuals about the management and benefits** of the *Environmental Insights Explorer* platform as well as the PIP potential as a replicable model.
5. **Exhibition device** as a communication strategy.



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**Mexico Action
Fund
2020**

Mexico Action Fund

02



2020

As part of global efforts to strengthen local data-driven initiatives that contribute to reduce greenhouse gas emissions, Google's philanthropic branch, known as Google.org and ICLEI-Local Governments for Sustainability, are working together to implement the Mexico Action Fund.

The Action Fund seeks to accelerate climate action around the world.

Fund resources will support academic organizations and institutions in Europe and Latin America, who are leading efforts of climate action based on data analysis.

Specifically, the Mexico Action Fund is an initiative between ICLEI-Local Governments for Sustainability, the Secretariat for Mexico, Central America and the Caribbean and Google.org (hereinafter ICLEI) to strengthen the local sustainable efforts of non-profit organizations and academic institutions in Mexico.



Mexico Action Fund

03



Climate action efforts based on data analysis

The philanthropic branch of google known as Google.org and ICLEI work together to implement actions under the Mexico Action Fund program.

The geographic interest of MAF intended to develop proposals for MAG (Metropolitan Area of Guadalajara), Monterrey and CDMX. Nevertheless, only proposals in MAG and Monterrey were chosen.

The main goals of the 2020 program are:

1. To encourage the use of the Google Environmental Insights Explorer (EIE) platform as a point of access to information.
2. To strengthen the work of local actors in the chore of reducing greenhouse emissions and to establish better design guidelines for decision-makers in terms of climate change mitigation.
3. To provide inputs and tools that promote the development of local impact projects which contribute in the achievement of global goals.