Urban Transition Mission & Environmental Insights Explorer join forces

Data and insights to inform, action, and monitor local mobility policies

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01.

The sustainable mobility challenge

Transportation in cities is not only a major contributor to Greenhouse Gas (GHG) emissions, but it is also one of the most difficult sectors to transform. This is because decisions made in this sector have a wide range of impacts, affecting the environment and the daily lives of citizens. According to the United Nations (UN), the transport sector is responsible for approximately one quarter of GHG emissions and accounts for half of global oil demand. As the transport sector develops pathways to decarbonize and support cities on their way to reach climate neutrality, local governments seek information and tools required for analyzing, forecasting, and planning to enable decision making and sustainability measures to be implemented. Often, such information is not readily available or easily accessible.

UTM - Delivering urban pathways to net-zero

The Urban Transitions Mission (UTM) works to empower cities to adopt innovative solutions for net-zero transitions at each stage of a city's climate action journey. Launched at COP26, UTM aims to increase the capacity for net-zero, resilient urban transitions of cities worldwide. By accelerating capacity-building and closing the gap between research, development and deployment, UTM supports cities to shape urban transitions based on robust knowledge, and develop their own customized solutions to effectively transition to net-zero. 48 ambitious cities have already joined the UTM city cohort, and, among these, 33 cities have flagged transportation and mobility as a key priority to tackle.

Many cities face the following challenges:

- Lack of data related to transportation emissions and kilometers traveled by people locally

- Limited availability of environmental data analysis and scenario platforms

- Limited time, economic, and human resources of municipalities for data analysis and management

- Limited access to tools and knowledge for the analysis, planning, and creation of innovative sustainable transport plans and policies

- Difficulties in securing and supporting decisions on investments in infrastructure for sustainable transport and mobility

02.
Why work together?

To help overcome the data challenges cities face, the Urban Transitions Mission (UTM) is collaborating with Google to support cities within UTM's cohort to access available mobility and transportation data in Google's Environmental Insights Explorer (EIE). Currently UTM cities are exploring how to use data meaningfully for the development of sustainable mobility strategies and policy making, and EIE's insights could help to accelerate the deployment of sustainable solutions and improved urban infrastructures.

EIE provides cities with these environmental insights: Transportation Emissions, Building Emissions, Solar Rooftop Potential, and Tree Canopy. Google is offering their data and scenario planning tools to cities for free to help bridge the data and analysis gaps within cities' climate action journeys. EIE can help cities measure emission baselines, plan climate adaptation strategies, implement climate interventions, and monitor the success of sustainability programs.

This guide is intended to support the UTM city cohort and cities globally to understand EIE Insights and help develop, strengthen, and implement evidence-based sustainable mobility plans and strategies. This publication explains how to get started with EIE and its available tools, specifically for the transport sector and based on the lessons learned from UTM cities, including Belo Horizonte (Brazil), Greater Manchester (UK), and Aarhus (Denmark).

Through reading this guide, cities will:

- Gain an overview of Google's Environmental Insights Explorer and understand how it supports mobility actions and transport policies in cities

- Hear from some UTM cities about their experiences using the platform

- Learn how EIE data, data visualization, and scenario planning tools can support local planning and implementation

- Understand how EIE data can complement and be integrated into, or help to cross-check information from local or national data sources

- Consider how data can help support sustainable mobility planning and action, and facilitate new infrastructure investments

03.

What transportation information EIE offers

Google's Environmental Insights Explorer (EIE) is a freely available data and insights platform that uses exclusive data sources and modeling capabilities to help over 40,000 cities and regions globally measure emissions sources, run analyses, and identify decarbonization and climate resilience strategies — creating a foundation for effective action.

With EIE, sustainability professionals around the world can accelerate their efforts toward making their communities more sustainable, resilient, and adaptive to climate change.

EIE's Transportation Emissions data offers:

- Year-over-year and GHG emissions breakdown by travel mode (walking, cycling, driving, etc.)

- Transportation emissions, number of trips, and kms traveled broken-down by In-boundary, Outbound and Inbound trips

- Scenario tools that project expected emission reduction from various transportation changes

Are you interested in specific data for your city?
Visit the Environmental Insights Explorer site goo.gle/utm, select your language and sign up. Let your UTM contact know that you have requested access – UTM will help you explore features and to interpret available insights for your city as you are planning your mobility action plans.

Calculation methodology: Calculating carbon emissions for transportation

EIE's Transportation Emissions estimate the total amount of CO2 emissions from trips taken into, out of, and within a city or region. Taking into account movement over all major road classifications — from interstates to local roads — Google is able to estimate annual vehicle trips by mode and vehicle distance traveled for all trips in a given area.

For more information on the methodology used in EIE please visit goo.gle/eie-technology

04.

What to consider before using EIE

Each city's journey is unique. Before diving into the features of EIE to self-assess the state of play and priorities of your city, you can reflect on the following questions:

- What access to data and information do you currently have on urban mobility?
- What is the current situation of your city in terms of systems and processes available to manage data and information?
- Does your city have the necessary staff and skills to manage data and information applicable to improving mobility plans and strategy?
- Which municipal department, team, or individuals will lead this work?
- Should your city involve any other stakeholder or group in any actions related to data management or the activities that may follow?
- What are the specific barriers or problems that your city aims to overcome?
- What are the most relevant data gaps you are trying to bridge?
- Do you already have a sustainable mobility plan, or do you intend to optimize the one you have?
- Do you already have a sustainable mobility strategy, or do you intend to optimize the one you have?

In the following sections of this guide, you will find recommendations and tips from your peers to match your city's current situation and starting point.

"My message to the new cities is to be open minded. We are really happy to see the team work between programs, partners and organizations - like this cooperation between UTM and EIE - we also hope that other cities will want to join in. Evidence-based policy making is essential to tackle the "wicked problems" in urban transitions and we need to work all together to find new ways to accelerate access to solutions and information for cities".

Søren Winther
Energy and Climate Consultant
Aarhus, Denmark

05.

Informing your plan

Municipalities with limited experience in using data for decision-making in sustainable mobility planning can find valuable support in EIE. If, after doing the self-assessment in point 4, you find that your local government needs to start building up the know-how and structure for future developments, you may want to consider implementing a series of actions, including:

Help develop and inform your GHG emissions inventory:

The development of a city's emissions inventory can be costly and require a significant allocation of time from municipal staff. Recognizing this challenge and having access to data that can directly inform the city's GHG inventory is extremely useful (particularly for cities with limited funding or human resources). EIE offers insights on how to effectively categorize emissions among different travel modes, distances, and trips. Furthermore, it facilitates a quick and straightforward overview of the trend over recent years, offering insights to forecast future scenarios.

Inform policies and measures in your mobility plan:

Keeping and maintaining access to continuously and timely updated data is a difficult task for a city. Even if a city already has a sustainable mobility plan in place, it's possible that the plan relies on outdated assumptions or data, or worse, no data at

all. EIE insights can serve as a valuable resource for considering new actions to be incorporated into your plan, and for your scenario forecasting, thanks to the calculator included in the platform.

Get an overview of how your community moves:

Understanding the transportation habits of people living and moving throughout the city can significantly inform decisions regarding the most beneficial actions to be taken. Examining the information accessible on EIE allows you to gain a comprehensive overview of the main modes of transport preferred by people in your community, along with understanding the impact of inbound and outbound trips on the total emissions figure.

Support the development of your local government's knowledge and skills:

Cities often have limited capacity to be dedicated to data analysis. Through Google's EIE, you can access a straightforward overview that does not require extensive knowledge of data usage and processing. Moreover, the calculator enables you to directly acquire results on estimated emissions without the necessity, for instance, of constructing a spreadsheet by yourself. It could serve as the first step towards the development of processes, systems, or methodologies, enhancing the knowledge of the team involved in this work.

"The insight on private cars are interesting for our city because they can help us show to the public how public transport, and active mobility - like walking or cycling - are so much more efficient compared to using a car, when going from point A to point B in the city. And how public transport is exponentially more sustainable: we can tell people that buses are not the villains, and that a car produces 28 times more GH that a bus, per passenger and km."

André Soares
Head of Mobility, Belo Horizonte, Brazil

05.

Strengthening your strategy

Even when local governments have access to transportation data and possess both the capacity and systems to manage it, additional sources to help both optimize strategies and clearly visualize trajectories and goals are essential for planning as well as decision making. Your municipality can therefore explore how to:

Optimize city emissions inventory:

Numerous cities already possess robust data and processes for effective management. However, they may still lack specific information, such as the kilometers traveled by citizens within the municipality's boundaries, either by private cars or on foot. Traditional data collection methods by authorities often overlook this information due to the challenges associated with information gathering, which also incur additional costs for the local authority. EIE facilitates the examination of kilometers and trips made per mode of transport, enabling the conversion of such data into emissions emitted by each mode.

Support policy decisions through various forecasted scenarios:

Various modes of transport exert different influences and weight on the overall volume of greenhouse gas emissions. Google's EIE makes it easier to estimate emissions and offers the ability to adjust the hypothetical kilometers traveled by different transport modes and see the impact on total emissions. This can be a great asset for cities in planning and revising their mobility measures. Such analysis can also provide valuable insights into the optimal areas to incentivize for maximum impact.

Make the case for investing in mobility actions:

Municipalities often encounter challenges in justifying the potential costs associated with implementing actions to promote sustainable mobility, such as creating new infrastructure, establishing low-emission zones, or supporting the shift to active mobility. Being able to collect insights on the potential impacts of measures implemented is essential to make the case for investment. With EIE, for example, you can estimate the reduction in emissions resulting from a decrease in private car kilometers traveled and its equivalent impact when using buses or favoring active mobility. This information can then be used to support decision-making, by helping to link reduction of emissions with co-benefits such as impacts on air quality and health, or better understanding traffic flow and congestion through the day. This can support an evidence-based assessment of potential cost reductions and the return on investment of new infrastructures and policies able to leverage the identified co-benefits.

"Our city's political leadership has been making increasingly clear that we need to see return on investment for our climate action: not only an economic one, but also a clear cut in our emissions, and for that they need reliable data and want evidence to base their decisions on. The data we can access and use for our decisions becomes more and more important for our city".

Søren Winther,
Energy and Climate Consultant, Aarhus, Denmark

05.

Monitoring your progress

Finally, your municipality might already possess accurate mobility data along with proficient teams and systems to manage transportation information. However, comparing new data sources with your existing data can offer new opportunities for cross-checking the quality of information, updating and complementing existing data with new insights. If you believe that your city is in such a situation, you should consider the opportunity to:

Validate the current data and data management approach used by your city:
EIE offers users the opportunity to compare their existing data with new information presented on the EIE city's profile. If significant differences emerge during this comparison, it is an invitation to compare methodologies and explore opportunities to potentially further fine tune assumptions. Furthermore, a quick cross-check against the data provided by EIE can be conducted efficiently, requiring only a limited time investment by any municipal staff member.

Synergize by combining EIE data with local sources:
Having two distinct sources of data and information in place can be viewed as an advantage rather than an issue. While you may already have internally collected data on certain transport modes, EIE could help close any potential gaps related to mode splits you might find.

Benchmark context and situations across peers:
By learning from your peers, you can both be inspired by new measures and policies, and compare solutions to shared challenges encountered. The methodology and assumptions used by EIE to account for GHG emissions across all city profiles follow the same methodology. This uniformity extends to the split between transport modes, variables in calculating total emissions, and units of measurement, which facilitates easy comparisons between different cities, enabling the identification of potential improvements in your specific circumstances.

"In general, our municipality can track traffic by bus and taxi, but even with buses, for example, we often are not able to receive the correct, real-time data on how many Km they travel. But when it comes to private transport is very difficult to collect information, and carrying out surveys is too resource- intensive and time-consuming for the city. Having access to transportation insights across modes of transport is extremely helpful when planning local mobility."

Andre Soares, *Head of Mobility*, Belo Horizonte, Brazil

06.

Getting started:
10 questions to ask yourself

1. Have you assessed the current municipality's state-of-play when it comes to data access, management and planning for sustainable transport? Is there a system in place?

2. What department, team, or individuals can take the lead in managing the data or overseeing the activities that may follow? What capacity and resources can you dedicate?

3. What are the main challenges and gaps you have identified in the transportation data currently available to your city?

4. What are your goals using the data and features of the tool? Inform your inventory, complement or validate your data, forecast or visualize trajectories?

5. Have you understood and considered the methodology and assumptions that Google EIE employs? What specific data from Google EIE can you apply considering your city's situation?

6. Which mode of transportation data or information on the city's boundaries will be more useful in your case? Do you have all the insights you need?

7. Are there any specific insights that you are missing, or that you have not considered yet among the data made available through the platform?

8. Have you considered using the insights acquired to fully assess and tap the potential co-benefits for your community and making the case for new investments?

9. Do you need additional support now that you have data and information available to complement your sustainable mobility plan and strategy?

10. What happens next? Are you open and motivated to explore options for data-driven policy making for your urban mobility and continue collaborating with UTM and work with Google insights?

About Urban Transition Mission

The Urban Transition Mission (UTM) mobilises decision makers across all levels of government to prioritise climate-neutral and net-zero pathways enabled by clean energy and systemic innovation across all sectors and in urban governance. By accelerating capacity-building and closing the gap between research, development and deployment, the Mission will empower cities to adopt innovative solutions and help reach tipping points in the cost and scale of those solutions for urban transitions.

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About Google's Environmental Insights Explorer

Google's Environmental Insights Explorer (EIE) is a free platform for cities and local governments to understand their main sources of greenhouse gasses (GHGs), and to identify areas of opportunity for emissions reduction and climate adaptation projects. EIE information is delivered through ready-made insights and inbuilt scenario planning functionality, and has been designed to support cities across their climate action journeys: from measuring and planning, to developing climate action plans, and enacting policies, and tracking impact over time.

Check your city here : https://goo.gle/utm