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Occupy Climate Change (OCC!) *City initiative entry*



FORMAS



Chronovélo, Grenoble-Alpes Métropole's bicycle express network

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Where is this grassroots initiative implemented? Who are the promoters? Who are the beneficiaries?

The Chronovélo project is a new network of bicycle paths structuring the Grenoble metropolitan area by linking 11 communes to the city center of Grenoble, a city located in the southeast of France. This large-scale project brings together the entire Grenoble conurbation (cities and towns), called the Métropole, and was initiated by the Grenoble municipality in 2016 and more specifically by its mayor Eric Piolle (from Europe Ecology - The Greens party). The development of this extensive network of bicycle paths will benefit all citizens using their bicycles (whether for leisure, work, or as a simple means of transport), as it will facilitate their itineraries, improve their safety, and also encourage novices to consider the bicycle as a valuable and obvious alternative to the private car. In the longer term, the development of the Chronovélo network will prove beneficial to all the inhabitants of the Grenoble valley. Indeed, air pollution, a worrying problem in the valley, and CO2 emissions will be significantly reduced if the objectives for the use of bicycle paths are met.

How this initiative engages with climate? Does it tackle mitigation, adaptation, both or other dimensions of climate change?

Transportation is the sector of activity that contributes the most to France's greenhouse gas emissions: in 2017, transportation accounts for 30% (no less than 134 Mt CO2 eq) of French emissions, an increase in the sector's emissions of 13% compared to 1990. This share of emissions is mainly due to the movement of people by private car (32.5 million vehicles in France). The private car is thus responsible for 53% of the transport sector's emissions, which corresponds to 16% of all national emissions. Transportation therefore appears to be a sector with high stakes that needs to be reformed as part of the fight against global warming.

In the Alps, the mountainous massif surrounding the city of Grenoble, global warming is twice as fast, and its consequences are twice as marked as in the rest of France. In this context, Grenoble was the first French local authority to set up a Climate Plan in 2005 with a view to combating climate change and limiting its immediate effects on the population and the environment. Grenoble is a city embedded between 3 mountain ranges, which limits its urban sprawl. As a result, it is a city with a high population density (3rd densest city in France outside the Ile-de-

France region with 8,861 inhabitants per km²), and the metropolis has been forced to establish a mobility and urban travel plan. The mobility plan policy aims to optimize travel, reduce the use of private cars in favor of alternative modes of travel (public transportation, carpooling, cycling, etc.) in order to improve air quality (pollution and fine particles overall), reduce noise pollution, and reduce transport-related CO₂ emissions. But Grenoble is also the flattest city in France, which is an asset when it comes to cycling. It's in this privileged environment that the Chronovélo project is part of a strategy to mitigate climate change by limiting the sources of greenhouse gases.

A citizen who takes his or her bike to work from home, 8 km on average in the Grenoble metropolis, 320 days a year, avoids the emission of 0.6 tons of CO₂ into the air, the equivalent of a one-way plane trip to New York for a single passenger. If only 10% of all city trips in the world were made by bicycle, CO₂ emissions from transportation would be reduced by 7%, a not insignificant reduction in greenhouse gases when you consider the urgency of the situation.



A bike rented from the Metrovélo on one of Chronovélo's traffic routes, the bike paths are distinguished by their important visual markings (to warn of directions, intersections, crosswalks) and by their width: 4m here (to be able to overtake safely).

Photo credit: Grenoble-Alpes Métropole

<https://www.grenoblealpesmetropole.fr/actualite/306/104-chronovelo-un-nouvel-itineraire-entre-meylan-et-grenoble.htm>

What are the main objectives? What are the main values?

The city of Grenoble and the Grenoble-Alpes Métropole, both carriers of the Chronovélo project, have set the ambitious goal of reducing fine particles in the air by 40% and greenhouse gas emissions by 50% by 2022. The two institutions hope to achieve these goals by making cycling an integral part of the Grenoble inhabitants' lifestyle by "transforming occasional practices into daily habits to triple the modal share of cycling by 2022," says Christophe Ferrari, President of Grenoble-Alpes Métropole (interview with Sébastien Marrec for Gre.mag, May 2020). As for the values behind the Chronovélo project, the Metropolis says it wants to make bicycles accessible to all, and in particular to develop their use in the city's working-class neighborhoods in order to initiate good ecological practices and already start raising awareness among future generations. According to a study by CEREMA (Center for Study and Expertise on Risks, the Environment, Mobility and Development in English), two-thirds of trips in urban areas are less than 3 km long and 60% of trips between 1 and 3 km are made by car. The mayor of Grenoble, Éric Piolle, personally maintains that the bicycle as a means of daily transportation has only advantages: "A non-negligible time saving, less exposure to pollution compared to a trip by car or even on foot, daily physical activity, cheaper because there is no insurance or fuel, there are only positive benefits, and that's what makes the bicycle an excellent alternative and a serious competitor to the private car, while remaining a means of travel that complements public transit." he said in 2019.

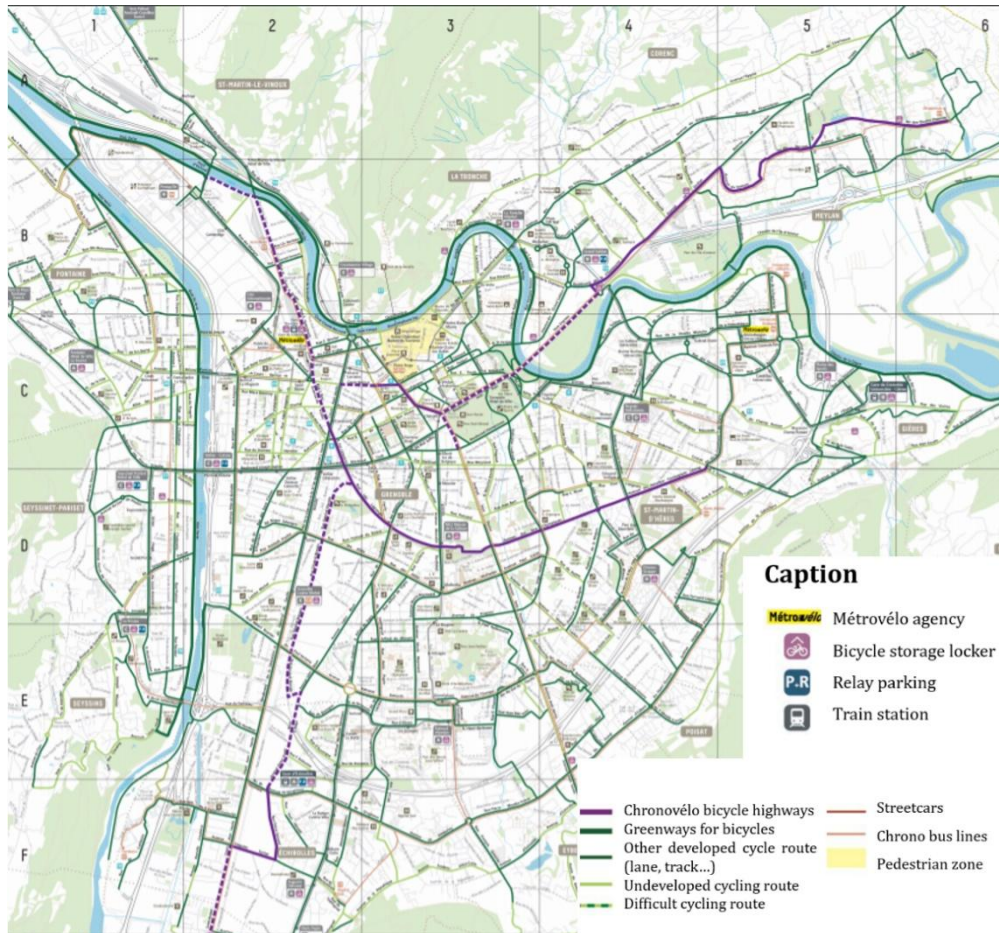
The objectives of Chronovélo are to democratize, facilitate, encourage and secure cycling in all circumstances (Chronovélo report by Grenoble-Alpes Métropole, 2018). To achieve this, Chronovélo offers cyclists direct, long-distance routes linking the communes of neighboring valleys to the city center, thereby optimizing travel times. The Chronovélo bicycle network thus includes more than 350 km of comfortable bicycle paths (separated from the roadway from motorized transport and sidewalks, bicycle paths up to 4 m wide) and secured by very important visual road markings (including direction indications, color coding, road intersection and crosswalk signs). Chronovélo has also inaugurated less than 12,000 secure parking spaces for bicycles and some 50 service areas dedicated to bicycles throughout the network (including a map of the bicycle network, a rest area, a bicycle pump). To attract a new public (seniors, families with young children), the municipality has bet on the 30km/h speed limit that will be generalized on more than 80% of the traffic lanes since 2017. This project directly gave birth to the Métrovélo service: an agency offering 7,000 bicycles for rent (long and short term, subscriptions available) and which takes care of the maintenance and repair of its bike fleet, as well as personal bikes. The city has also built 4 park-and-ride facilities at the entrance to the city for people who live too far away but work in Grenoble to come exclusively by bike to facilitate intermodality between

individual transportation, public transportation and cycling. Regular maintenance of the cycling facilities is carried out by the Métropole's staff.

What is the timeline? Are there already visible effects?

In 2014, when Mayor Eric Piolle was elected mayor, the city of Grenoble already had bicycle lanes, on the roadway shared with other motorized vehicles. This arrangement was poorly adapted to intensive and popular use, and above all reserved exclusively for the inhabitants of Grenoble itself, as the city was not easily accessible to neighboring municipalities by bicycle. It is in this context that the Chronovélo project was born in 2016 and has been in the development phase since 2014. The development work is spread over 4 years and should be completed by 2020 with the full commissioning of the network, which includes 350km of cycle paths throughout the Grenoble metropolis.

In France, in 2017, 1.9% of the working population will cycle to work. In the Grenoble metropolitan area, the rate is 5%, and in Grenoble itself it is no less than 15.2%, a score that now makes Grenoble the second-biggest city in France for commuting by bike. In 2014, cycling in Grenoble was far from reaching such a large proportion of the population, since at the time only 7% of home-to-work trips were made by bike. In the Grenoble metropolitan area, nearly 70,000 daily cycle journeys will be recorded in 2019 thanks to meters placed along the Chronovélo cycle paths. Cycling trips increased by 30% between 2018 and 2019, the year corresponding to the inauguration of a major section of the Chronovélo network linking four additional municipalities to downtown Grenoble. The positive effects of Chronovélo on the population are therefore directly visible, over the last 3 years at least. Other measures such as the 50% reimbursement of bicycle rental costs by employers must have contributed to the rapid development of cycling among the population. Through its measures taken on transportation, the city of Grenoble (3rd densest city in France) proves that the reduction of road traffic can be decoupled from population growth. As for CO2 emissions, the city estimates that it has already reduced them by 25% between 2005 and 2017, thus getting closer to the announced objective of a 50% reduction by 2030, a stricter regulation than that imposed by the government at the national level.



Map of cycling routes (320 km) linking the 3 neighboring valleys and the 11 communes.

Plan from Grenoble-Alpes Métropole

<https://www.grenoblealpesmetropole.fr/635-plan-des-pistes-cyclables.htm>

Who are the actors involved? What is their background?

Chronovélo brings together the city of Grenoble and several neighboring municipalities in the 3 valleys surrounding Grenoble. To carry out such a project, a dialogue was established between several institutions. First, the municipality of Grenoble, which is at the origin of this project, and the Métropole Grenoble-Alpes, has managed to bring together different actors to collaborate and achieve Chronovélo. The following are therefore involved as Chronovélo actors: the joint union for public transportation (SMTC in French), which organizes the mobilities of the Grenoble metropolis, the Métrovélo agency, which offers bike rentals for everyone, and the municipalities of the neighboring communes concerned to plan urban development and the development of "soft mobilities" throughout the region. The main actors are therefore administrative institutions (executive or legislative), but we must not forget the users of the Chronovélo network: they are regularly consulted for their opinions and feedback on the infrastructures made available, on the

state of the network, on new developments and on possible improvements to be made to perfect the Chronovélo result. As users are all invited to respond to public surveys or are drawn at random for consultation at project meetings, they come from diverse and varied social backgrounds and no one profile is favored. Accessibility is also one of the important points, underlined by Eric Piolle as crucial for integrating the entire population of the agglomeration without excluding the popular districts of the city from cycling.

Which limits (institutional, physical, social, etc.) does it encounter?

As this project was initiated by municipalities, there is almost no institutional restraint. The main obstacle is to be found among the citizens of the Grenoble metropolis, who still appreciate the selfish comfort of the individual car. The Chronovélo project is intended to be accessible to all citizens, regardless of their social background. However, it will be necessary to go through a phase of raising awareness about cycling to really attract new users, as is already being done in some of the city's working-class neighborhoods. There is also an urgent need for work on the enforcement of the traffic regulations code and on the sharing of the road among cyclists: they are users who can ride at the same speed as motorized vehicles in city centers, and their cohabitation with pedestrians and scooters is not yet rooted in the habits and mentalities of cyclists. Nor should it be forgotten that cyclists remain vulnerable road users, with relatively little protection from cars, buses and streetcars.



A service area on the Chronovélo network, which includes a map of the bicycle network, a bicycle pump and a bench to rest on.

Photo credit: Sébastien Marrec

<https://www.weelz.fr/fr/deconfinement-grenoble-incontestable-capitale-velo-france/>

Are any shortcomings or critical points visible? What other problematic issues can arise from its implementation?

On the other hand, not all citizens can ride a bicycle. Person with reduced mobility and disabled citizens do not have access to this mode of transportation. To compensate for this shortcoming, the SMTC (joint union for public transportation) has made it mandatory to make all public transit systems accessible to wheelchairs, walkers and blind people. They have also decided to set up shuttles available on request to carry out complex journeys for people with disabilities (connections between buses, streetcars, poorly served neighborhoods, etc.).

One of the critical points frequently raised by citizens opposed to the Chronovélo project is the drop in traffic in the downtown area. In fact, the downtown cycling facilities have drastically reduced car traffic and merchants complain that their clientele has almost halved since the start of the development work. The decline in commercial attractiveness in the city center is worrying some people because it could gradually kill off independent shops in favor of the large supermarkets on the outskirts of the city.

Another problem concerning the Chronovélo project that deserves to be raised concerns excessive overurbanization under concrete. Numerous routes have been laid out and paved since 2016 in Grenoble and its surroundings, and the massive overbuilding is altering the absorption capacity of the soil, thus increasing flooding and also harming biodiversity, making the ecosystems of the Alps fragile, despite the fact that they are vulnerable to the accelerated global warming they are undergoing. Moreover, overurbanization leads to a reduction in the share of nature (vegetation and soils) which act as carbon sinks, absorbing large quantities of CO₂, an indispensable asset for improving air quality in urban areas.

How would it be potentially replicable in other settings?

Grenoble has just been awarded the title of European Green Capital for 2022, a distinction that shows its commitment to fighting global warming and wishes to highlight its ecological initiatives by setting an example and inspiring other cities to invest in an ecological and sustainable policy. The Chronovélo project is specific to Grenoble (flat city, dense population...) but some initiatives and ideas can be transposed to other urban settings, while considering the specificities of each environment. Investment and public awareness are also struggling to be adopted and implemented because it is the citizens who elect and choose policies on a larger scale.

Is this initiative conducive to broader changes (law, institutional arrangements, long-term sustainability or community preparedness, etc.)? If yes, which?

The development of the Chronovélo project throughout the metropolis has led to effective measures to support cycling and the use of public transportation: monthly season tickets (public transportation, bicycle) are 50% paid for by employers (or even up to 100% in some companies), and the same goes for carpooling services, which are now 100% paid for. Another emblematic measure is the traffic speed, which has been increased to 30km/h in the city.

On a broader scale, the “Loi des Mobilités Orientées” (law of oriented mobility in English), passed in 2019, aims to increase the proportion of trips by bicycle from 3% to 9%, by increasing intermodality between different means of transportation (bicycles allowed on trains, buses, light rail, etc.), by offering a sustainable mobility bonus (up to €400 per year), by introducing symbolic recognition of the right to active mobility, and by providing a generalized bicycle learning program starting in middle school.

Changing the habits of citizens is, in the long term, what will be most conducive to changing mentalities over the generations. Raising public awareness of issues such as "soft mobility" means that mentalities are changing, and that citizens are more sensitive and inclined to ecology and environmental protection approaches.

Documents used:

Plan Climat Air Energie Métropolitain 2020 – 2030 (Metropolitan Air Energy Climate Plan in English), Grenoble-Alpes Métropole, February 2020

Plan de déplacements et de mobilité urbaine 2030 (Transportation and Urban Mobility Plan 2030 in English), SMTC, November 2019

Rapport du projet Chronovélo (Chronovélo Project report in English), Grenoble-Alpes Métropole & Ville de Grenoble, December 2018

Visited sites:

Ministère de la Transition Ecologique et Solidaire – MTES (Ministry of Ecological and Solidarity Transition in English): <https://www.ecologie.gouv.fr/>

Agence de l'environnement et de la maîtrise de l'énergie – ADEME (Agency for Environment and Energy Management in English): <https://www.ademe.fr/>

Centre interprofessionnel technique d'études de la pollution atmosphérique – CITEPA (Interprofessional Technical Centre for Air Pollution Studies in English): <https://www.citepa.org/fr/>