

Pully under the microscope



Measuring the level of digitalisation
and sustainable development
against the International
Telecommunication Union's ITU-T
International Standards



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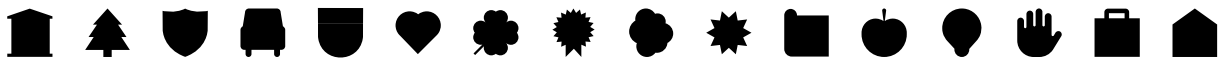
ACKNOWLEDGMENTS

LIST OF ABBREVIATIONS AND ACRONYMS

Disclaimer

This report summarises the conclusions of the pilot project 'ITU Indicators' of the city of Pully carried out between 11 May 2017 and 2 February 2018, and encompasses the calculations and the analysis of the key-performance indicators (KPI) established by the ITU-T 'U4SSC' Working Group. The opinions expressed in this report do not represent the views of the ITU or any of the other participating organisations, but are solely the personal experiences and conclusions of the authors. The KPI are constantly revised, in order to improve their representativeness. Consequently, the KPI implemented during this project may differ from the previous series of KPI published by the ITU. This does not purport to provide a set of guidelines or an official approach for the implementation of the ITU-T KPI – it is for information purposes only.

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Gil Reichen Mayor

In June 2017, increasingly aware of the growing impact of digitalisation on our society, our culture and our economy, and the turmoil that accompanies it, the municipality decided to launch a structured 'Smart city' type of procedure, taking into particular account the strong position of the city of Pully in integrating the challenges of digitalisation and implementing numerous projects capable of being linked to this concept.

It was in this spirit, and over the same period, that the municipality responded favourably to the approach of the ITU to participate in a project to construct a frame of reference that could attempt to measure and compare the degree of digitalisation and sustainability of the cities, a step as ambitious as it is difficult.

Of course this report is the culmination of the huge task of collecting a whole range of data from the city's various areas of action; but I would like to emphasise in particular the remarkable summarisation and formatting of the report, which was done in order to make it as accessible as possible to the greatest number of people.

The findings provide an instantaneous and partial image of the city, which is something of a paradox in the world – and a context – that is changing so rapidly. Moreover, the chosen indicators have an institutionally global character and often exceed what could be managed at the local level in our system. They are probably incomplete and certainly require some fine-tuning, or even completion, so why not bring in elements pertaining to governance and ethics?

I would like to conclude by passing on the municipality's sincere thanks to each and every one of the partners involved in this project, those listed on the last page, for their contributions to writing and publishing this report.

Swisscom



Res Witschi

Corporate Responsibility Director

As the leading telecommunications operator in Switzerland, it is Swisscom's responsibility to make sure that digitalisation is employed in the interests not only of the country as a whole, but also of the people living there. This is not just about expanding the fixed and mobile broadband networks as widely as possible, establishing secure data centres and providing entertainment, but also about using technology in such a way as to serve the best interests of the people and the environment.

Through the Smart City initiative, Swisscom is working closely with Swiss cities, towns and communes to make them more attractive, promote their quality of life and reduce their energy consumption. The 'Internet of Things' now enables the remote management of solar output and decentralised electricity distribution, as well as informing the Department of Sanitation when the rubbish containers are full. In the same vein, the city of Pully and Swisscom have implemented 'Big Data' technology to develop a mobility observatory with the aim of making the cities more attractive, and improving mobility within them.

However, questions remain about the measurement of the level of the city's digital development and also about its sustainability. Hence our joining forces with Pully to carry out the pilot project 'United for Smart Sustainable Cities – U4SSC', set up by the International Telecommunications Union (ITU), which implements a set of indicators derived

from the United Nations Sustainable Development Goals.

Over and above the environmental aspects, economic and social factors also play a key role, and this could, for example, be addressed through the following questions:

- Does our society aspire to greater cohesion or are wider gaps appearing because of the varying incomes, nationalities and ages of the population?
- To what extent is the child daycare centre system developed and does it allow parents to continue with their professional careers should they wish to do so?
- Is the data collected in the cities also accessible to the public?

To meet these challenges, we will need people who are prepared to tackle them effectively, give a platform to their creativity and use the technologies in a targeted manner. We cannot wait to get involved with other municipalities and cities like Pully along the way.



Chaesub Lee

Director of the Telecommunication Standardization Bureau

Citizens are at the centre of Pully's smart city strategy. This is an approach that ITU is pleased to support, recognizing that citizens will drive the behavioural change required to achieve smart city objectives.

Human, friendly, efficient and practical – these are the values at the core of Pully's smart city strategy. Practical innovation is Pully's priority. Pully sees technology as a means to strengthen relationships between citizens and help them to lead simpler, happier lives.

This case study of Pully's smart city journey shares valuable lessons on how to engage citizens in smart city innovation, engagement that is essential to the development of a citizen-centric smart city.

Learning from experience is one of the main objectives of the United for Smart Sustainable Cities (U4SSC) initiative. U4SSC offers valuable support to international standardization work of ITU-T Study Group 20 (Internet of Things and Smart Cities and Communities).

U4SSC is supported by 16 United Nations bodies. The collaboration driven by U4SSC has led over 100 cities to adopt *Key Performance Indicators for Smart Sustainable Cities* based on ITU standards.

U4SSC promotes the adoption of international standards and the reporting of associated experiences. This information exchange is enabled by the Key Performance Indicators, which offer a common format to report the progress of smart city strategies. These indicators also enable cities to measure their progress against the United Nations Sustainable Development Goals.

We see prime examples in this Pully case study as well as prior case studies of Dubai, Singapore and Moscow. These case studies share empirical knowledge of great value to other cities around the world. This reporting also solicits feedback that helps cities to refine their smart city strategies.

I would like to applaud Pully for its contribution to international collaboration in support of smart sustainable cities. This Pully case study is certain to provide a valuable reference point to other cities around the world.



INTRODUCTION



Context

The digitalisation of the cities and towns

With the arrival on the scene of the first personal computers in the 1980s, the launching of the internet and the mobile phone in the 1990s and, since 2007, their fusion in the form of the smartphone, today digitalisation reaches into every aspect of our society. And it continues to develop apace, with the appearance of new tools such as artificial intelligence, the blockchain, big data, machine learning, the internet of things, the driverless car, and, of course, drones. Cities are also at the centre of this evolution. Indeed, almost all services being provided are susceptible to reconsideration in light of the advent of digitalisation, starting with the relationship with the citizen, mobility, energy or safety.

As regards Pully...

How then to prepare and manage the development of Pully, taking into account the changes brought about by the digital revolution? This is the question the municipality has been asking itself. Over and above reflection on the characteristics of Pully vis-à-vis digitalisation and the creation of the www.smart.pully.ch website, one of the responses has been to measure the level of digitalisation of the city of Pully. Indeed, as Peter Drucker, a former professor at the University of New York and a specialist in management affairs: 'You can only manage what you can measure'.

The 'United 4 Smart Sustainable Cities (U4SSC)' method¹

To address this state of affairs, the chosen path was the 'United for Smart and Sustainable Cities (U4SSC)' method developed by the

International Telecommunication Union (ITU), a United Nations (UN) specialised agency responsible for information communication technologies (ICT). The originality of this method lies in the fact that it regards ICT not as an end in itself but rather as a tool with which to make a meaningful contribution to achieving the United Nations Sustainable Development Goals (SDG). As such, it forms a bridge between digitalisation and sustainable development.

Objectives

The objectives of this project are as follows:

- To test the set of U4SSC initiative indicators in the context of a Swiss city, in order to evaluate its suitability for measuring the level of digitalisation and sustainable development.
- To evaluate the strengths of this system of indicators and identify any areas for improvement.
- For Pully, to profit from this exercise, in order to find its place within this system of indicators and evaluate its use over the long-term as a contribution to the management of the city.

Execution of the project

Having submitted its application to the ITU in April 2017, the city of Pully – working closely with Swisscom within the framework of a public-private partnership – undertook collecting the data needed to calculate the value of the indicators. This was completed in September 2017. In February 2018, an audit was carried out by the ITU and the certification was granted in April 2018 at a ceremony in Malaga (Spain), at which the cities of Singapore and Bizerte (Tunisia) also received their certification.

1 www.itu.int/en/ITU-T/ssc/united/Pages/default.aspx



Certification 'United for Smart and Sustainable Cities' granted on 26 April 2018 by Mr F.-M. de la Torre Prados, Mayor of Malaga, to Mr A. Bosshard, Coordinator of the DTSL, and Project Leader for the city of Pully.

United Nations Sustainable Development Goals² and U4SSC

In order to reduce inequalities, meet environmental challenges such as global warming and stimulate economic growth, the United Nations' member states, including Switzerland, committed themselves in 2015 to achieving 17 Sustainable Development Goals (SDG). The U4SSC method provides a measuring tool for Objective 11, which aims to make cities inclusive, safe, resilient and sustainable. U4SSC is the sole international standard³ arising from the United Nations Sustainable Development Goals.



The 17 United Nations Sustainable Development Goals. U4SSC measures Objective 11: 'Sustainable Cities and Communities'

² <https://sustainabledevelopment.un.org/?menu=1300>

³ Standard international (ITU-T Y.4903/L.1603)






Methodology

The indicators

The U4SSC initiative is described in a publication of the ITU U4SSC-Collection-Methodology⁴. It measures 87 criteria or 'indicators'. One third of these indicators concern digitalisation, for example *Student ICT Access*, and two-thirds concern sustainable development, for example *Noise Exposure*.

The indicators are categorised in accordance with the principles of sustainable development in 3 dimensions: environment, economy and social. Each of these dimensions is itself divided into the following themes:












ENVIRONNEMENT

	Air pollution
	Energy
	Public Space and Nature
	Environmental Quality
	Waste
	Water and sanitation

SOCIETY & CULTURE

	Culture
	Education
	Food security
	Health
	Housing
	Safety
	Social Inclusion

ECONOMY

	Buildings
	Drainage
	Electricity Supply
	Employment
	ICT Infrastructure
	Innovation
	Public Sector
	Transport
	Urban Planning
	Waste
	Water and sanitation

The choice and format of the U4SSC indicators were decided in accordance with the following 4 principles:

Exhaustivity

The indicators attempt to cover all aspects of an intelligent and sustainable city.

Availability

The data must be easy to collect.

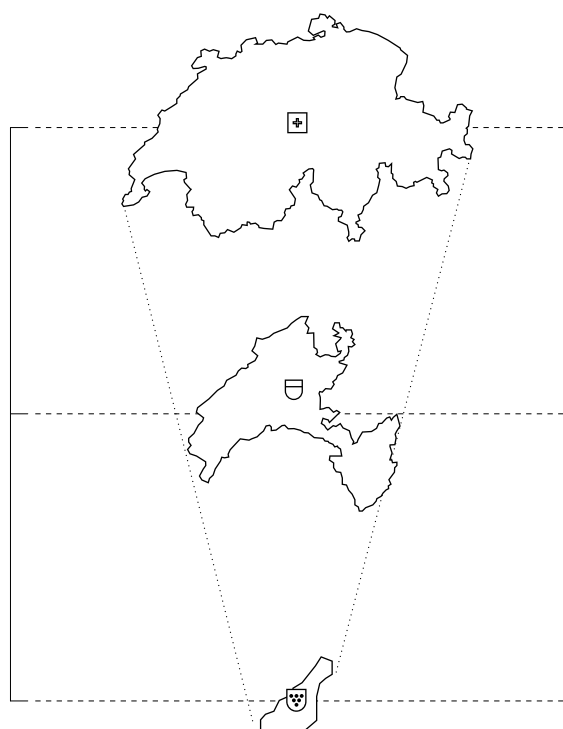
Simplicity

The indicators must be simple to understand.

Topicality

The indicators must be in phase with the issues of the moment, in order to properly guide intelligent and sustainable cities.

In general, the data for calculating the indicators are at the level of the city of Pully. However, it may be that for certain indicators the data are available only at the level of the canton or the confederation. Given the influence of the level on the representativeness of the results, in this report the partners chose to use a logo to indicate the level of precision with which each indicator is measured. To make an analogy with photography, these levels correspond to the following image resolutions:



✚	Measured at the national level (Swiss Confederation Low-quality resolution)
🛡	Measured at the regional level (Canton of Vaud) Medium-quality resolution
🏰	Measured at the local level (City of Pully) Good-quality resolution

To continue with the metaphor of the photograph, a comparison could also be made with the application of the U4SSC initiative to a photograph taken:

- According to a given angle (the 87 indicators)
- At a given moment (in 2016)

The target values

The U4SSC method does not set any objectives to be achieved for the different indicators. Nevertheless, the working group deemed it important to compile the list and thus compare the Pully values with the reference values: the target values. For example, for the indicator *Water Supply Loss*, 11% of the water distributed in Pully is lost because of leaks. The detailed water distribution plan (PDDE) set the acceptable water loss at 7%, a loss that corresponds to the target value for this indicator. Therefore, Pully will have to reduce its leaks from the network by a further 4% in order to reach the target.

In setting the target values, the working group chose to take the following two specific cases:



The target value is available because it derives from Pully's 2016-2021 legislative programme or the federal, cantonal or communal legislation (laws, statutes and regulations).



The target value is not available and a statistic has been used to give an indicative value with which the Pully indicator can be compared. Hence it is more of a general indication than an objective to be achieved. For example, for the indicator *Police Service*, in the absence of a target value, the Swiss average of the number of police officers per inhabitant has been taken, in order to give a comparative value to the number of police officers operating in Pully.

‘Sustainable development, which embodies social, environmental and economic dimensions, is a fundamental concept that must guide our projects and lead us into new investments, and enhance our experience as we keep a watchful eye over the global balance of our finances.’

Lydia Masmejan

City Councillor responsible for Areas, Buildings Agencies and Sport

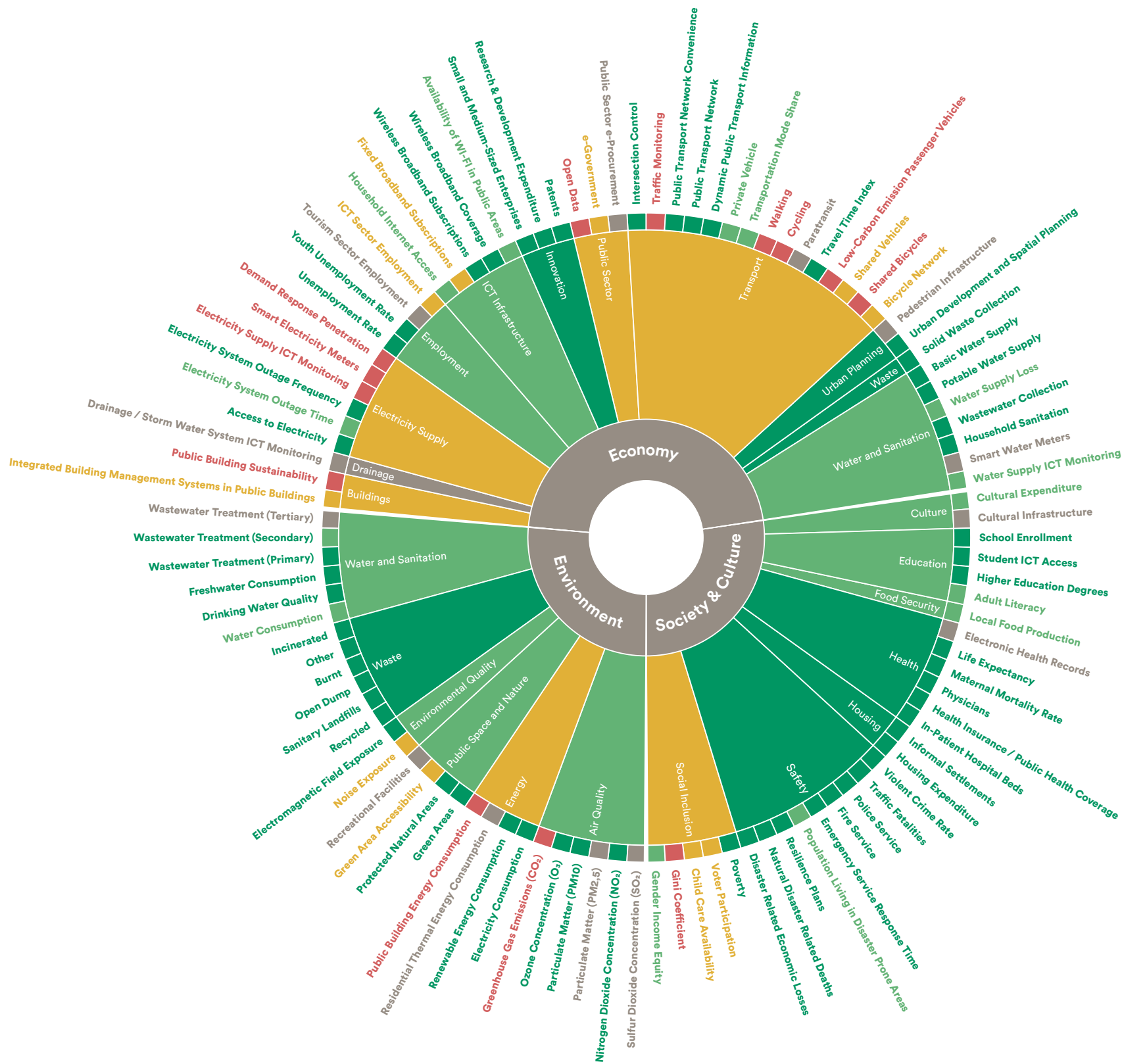


RESULTS



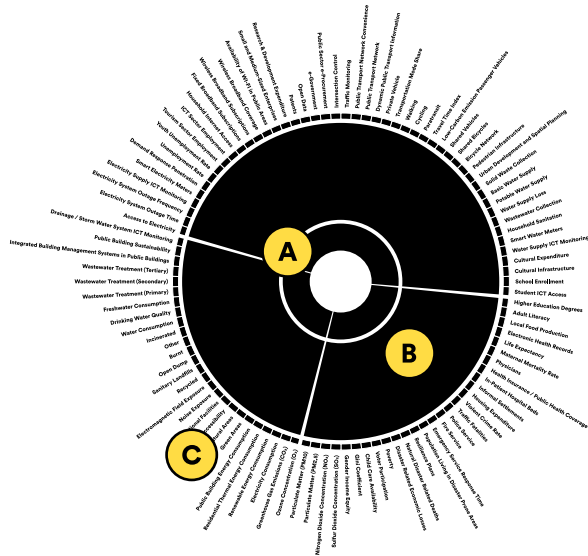
Overall findings of the measures of the indicators

Achieving the target values	
<div></div>	95 to 100 %
<div></div>	66 to 95 %
<div></div>	33 to 66 %
<div></div>	Less than 33%
<div></div>	Data target values not available



Summary

- A THE CENTRE OF THE WHEEL**
This illustrates the 3 dimensions of sustainable development (economy, society and culture & environment)
- B THE INNER CIRCLE**
This represents the major themes (for example: quality of the environment, transport, culture)
- C THE OUTER CIRCLE**
This lists the U4SSC indicators, arranged by theme



Findings in detail

Lying at the heart of the report, this chapter presents the measurement findings of the indicators and compares them with the target values for Pully. In doing this, particular care has been taken to present the findings in the most understandable and succinct way possible.

1

TERMINOLOGY

The name of the theme, as well as its reference terminology in English to make the link with the U4SSC method

2

PICTOGRAMME

A pictogramme that represents the theme and enables the rapid and intuitive identification of the indicator

3

GLOBAL EVALUATION

The global evaluation is an average of the scores achieved by the indicators of the theme (cf. 9 Evaluation of the indicator)

4

THE STATE OF PLAY

A text that provides a succinct summary of the state of this theme in Pully

5

MUNICIPALITY ACTIONS

The actions undertaken by the municipality on this theme. These may be planned, ongoing, achieved or permanent

6

INFOBOX

An 'infobox', which illustrates a concrete project implemented in Pully in relation to an indicator

7

THE INDICATOR

8

TERMINOLOGY

The name of the indicator

9

EVALUATION OF THE INDICATOR

Degree of achievement of the indicator, divided into 4 classes:



Target value exceeded
(at least 95.1 % of the target value)



Target value achieved
(between 66 % and 95 %
of the target value)



Target value partially achieved
(the value of the indicator is between
33 and 66 % of the target value)



Target value not achieved
(the value of the indicator is between
0 and 33 % of the target value)

10

VALUE

The value achieved by the indicator, as well as the date on which it was measured

11

THE TARGET VALUE

⊙← Defined in law
←← Estimate based
on statistics

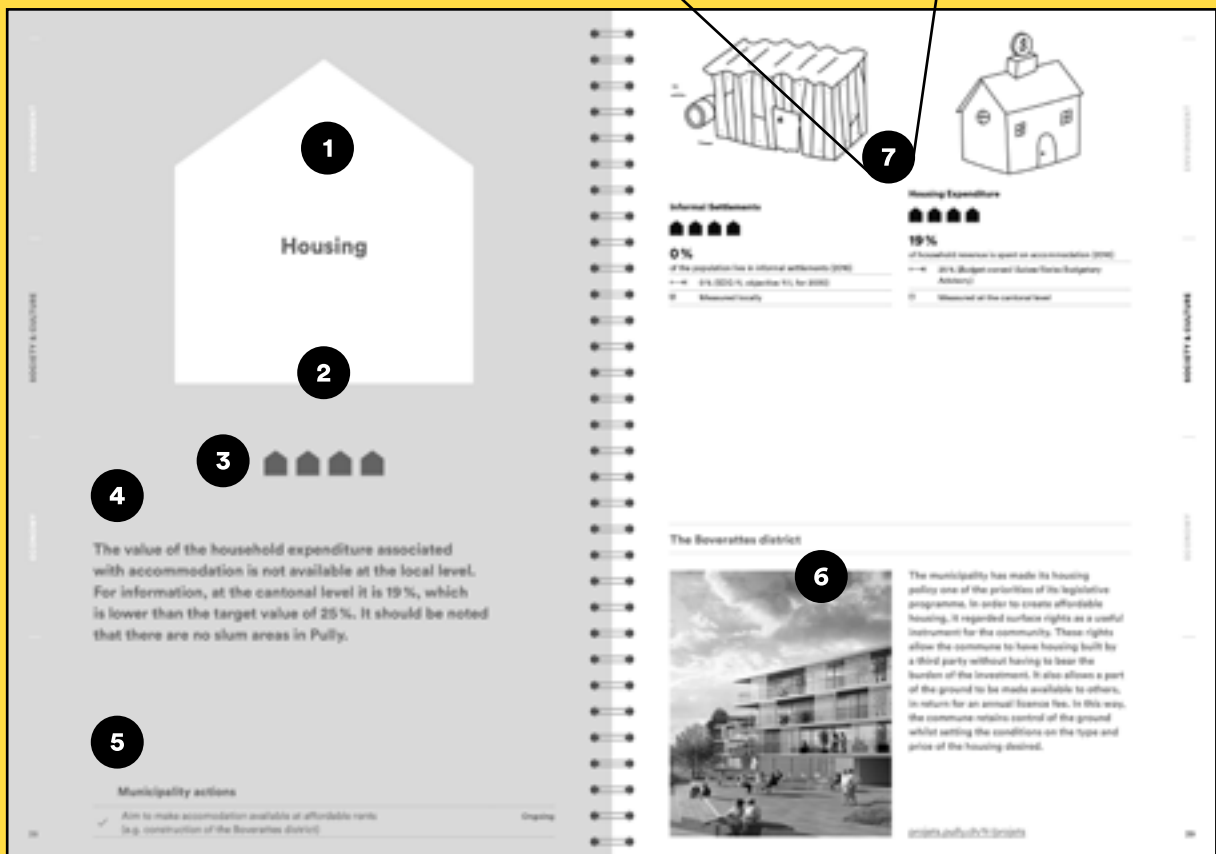
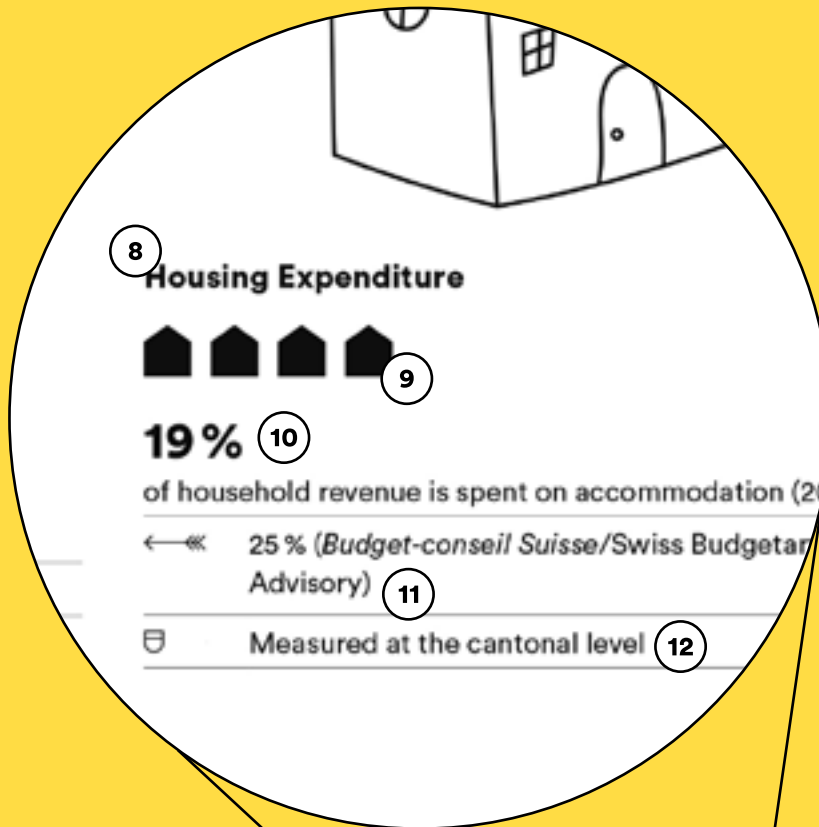
The sources are given in brackets.
A glossary can be found on the inside
back cover.

12

THE LEVEL

The level of indicator measurements:

⊙ Local (Pully)
⊞ Regional (Canton of Vaud)
⊞ National (Switzerland)



Air quality

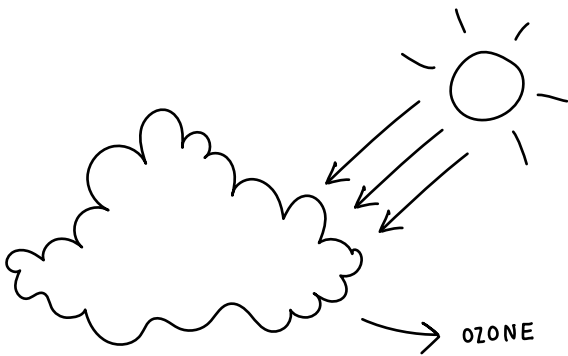


The air quality meets the target values. At the national level, the emission of greenhouse gases greatly exceeds the standards. The data for calculating the indicators *Particulate matter (PM 2.5)* and *Concentration of sulfur dioxide (SO₂)* are not available.

Municipality actions

- ✓ Participation in the 'Energy City' programme, which indirectly improves the quality of the air (for example, by providing recharging points for electric vehicles or creating financial incentives for insulating buildings)

Permanent



Ozone concentration (O₃)

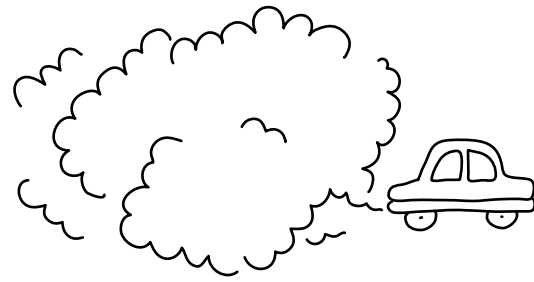


47.3 µg

per m³ (2016)

☉☞ 100 µg per m³ (OPair)

☐ Measured regionally



Nitrogen Dioxide Concentration (NO₂)

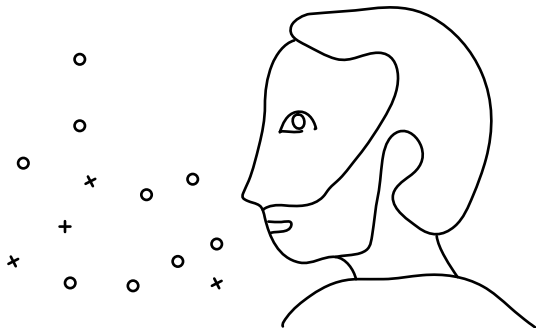


21.3 µg

per m³ (2016)

☉☞ 30 µg per m³ (OPair)

☐ Measured locally



Particulate Matter (PM₁₀)

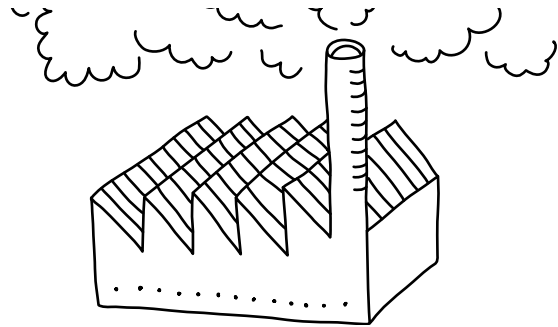


15.8 µg

per m³ (2016)

☉☞ 20 µg per m³ (OPair)

☐ Measured regionally



Greenhouse Gas Emissions (CO₂)

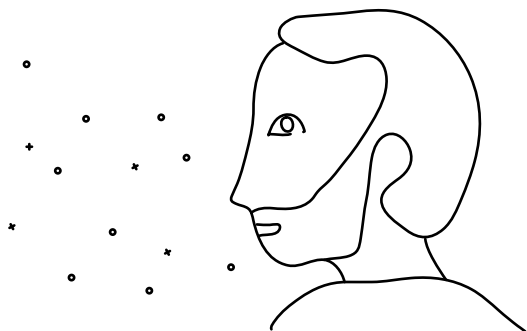


6.63 t

CO₂ per inhabitant and per year (2015)

☉☞ 3 t CO₂ (CO₂ Law, COP 21 Climate Agreement)

☑ Measured nationally

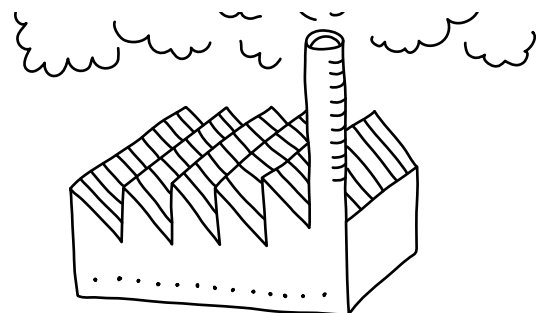


Particulate Matter (PM_{2.5})

Value of the indicator not available

☞ Target value not available

– Not measured



Sulfur Dioxide Concentration (SO₂)

Value of the indicator not available

☞ Target value not available

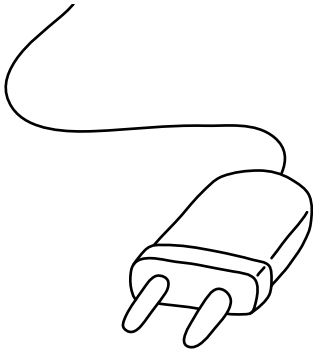
– Not measured



Electricity consumption per inhabitant is lower than the objectives require. This is because the city is primarily residential in nature. The renewable electricity proportion has reached 60 % and largely consists of hydraulic energy. As regards the public buildings, their current energy state leaves plenty of room for improvement. The data for calculating the indicator *Residential Thermal Energy Consumption* are not available.

Municipality actions

✓	Establish EcoWatt, a financial energy efficiency support programme for the population	Achieved
✓	Draw up a technical and financial planning tool to manage the communal building heritage	Ongoing



Electricity Consumption

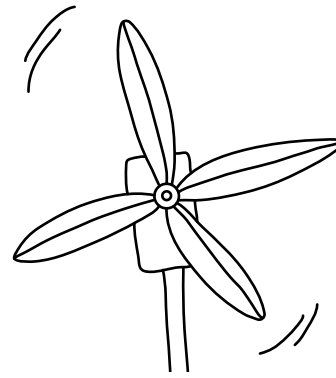


2'838 kWh

per inhabitant and per year (2016)

🕒 6,325 kWh by 2035 (LEne)

🏠 Measured locally



Renewable Energy Consumption

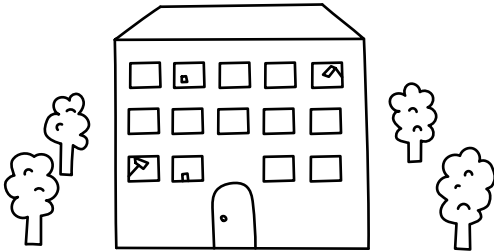


59.8 %

of the energy comes from renewable sources (2017)

🕒 17 % (Legislative programme of the State Council of Vaud 2017-2022, Objective 2022)

🏠 Measured locally



Public Building Energy Consumption

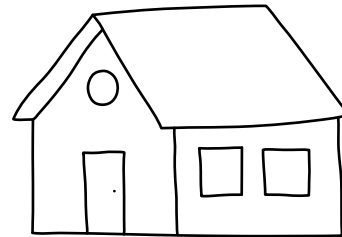


120.4 kWh

per m² and per year (2015-2016)

🕒 43 kWh/m² (standard SIA 380/1)

🏠 Measured locally



Residential Thermal Energy Consumption

Target value not available

🕒 Target value not available

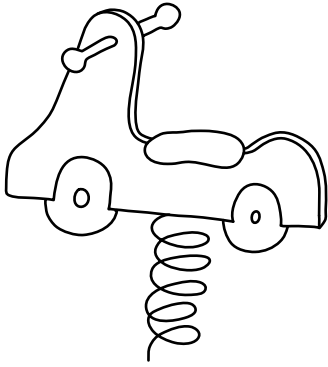
– Not measured



The provision of green spaces and the extent of protected areas greatly exceed the target values. The majority of the population (53 %) live fewer than 300 m from a green space of at least 0.5 ha.

Municipality actions

✓	Maintain and improve the quality of the existing public and natural spaces	Permanent
✓	Redeveloping the Quai Milliquet Park, and creating an urban fitness circuit	Ongoing



Recreational Facilities

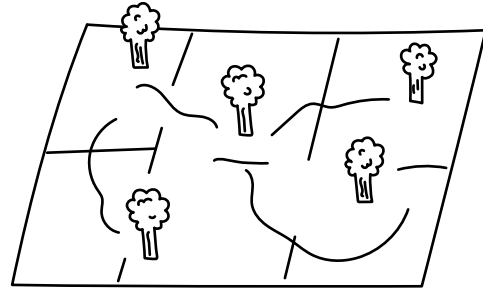
1,184,822 m²

per 18,000 inhabitants (at the Pully level)

≡ 6,582,346 m² per 100,000 inhabitants (U4SSC)

←« Target value not available

🏡 Measured locally



Green Area Accessibility

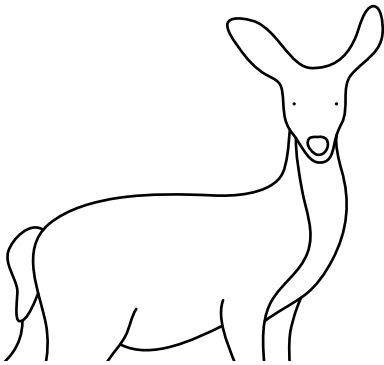


53.5 %

of the inhabitants living fewer than 300 m from a green area of at least 0.5 ha (2016)

←« 100 % (SDG 11.7, for 2020)

🏡 Measured locally



Protected Natural Areas

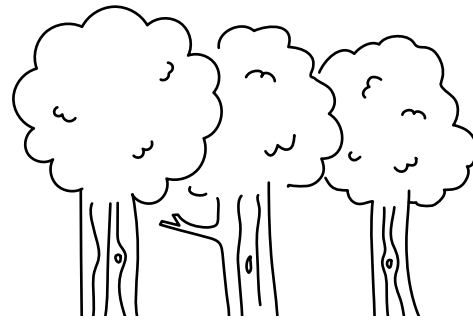


58 %

of the surface de Pully is protected (including forests)(2016)

←« 17 % (Aichi Objectives for 2020)

🏡 Measured locally



Green Areas



404 ha

per 18,000 habitants (at the Pully level, 2016)

≡ 2,245 ha per 100,000 habitants (U4SSC Value)

←« 90 ha per 100,000 inhabitants (Smart Cities Council)

🏡 Measured locally

‘We are ensuring that we develop an inclusive city by creating public and natural spaces that foster and encourage intergenerational activities.’

Nicolas Leuba

City Councillor responsible for managing urban planning and the environment

Environmental Quality



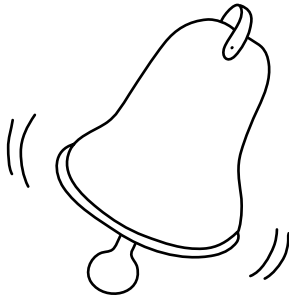
Whereas exposure to noise affects those citizens of Pully living alongside the main road and railway routes, all the Swiss phone masts do respect the threshold levels for exposure to electromagnetic radiation.

Municipality actions



Clean up those areas subjected to excessive traffic noise (erecting sound-absorbing coating, anti-noise windows and imposing speed limits)

Ongoing



Noise Exposure

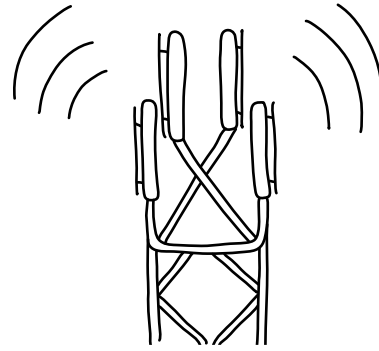


37.4 %

of the inhabitants are subjected to excessive noise (2016)

☉ 0 % (OPB)

🛡 Measured locally



Electromagnetic Field Exposure



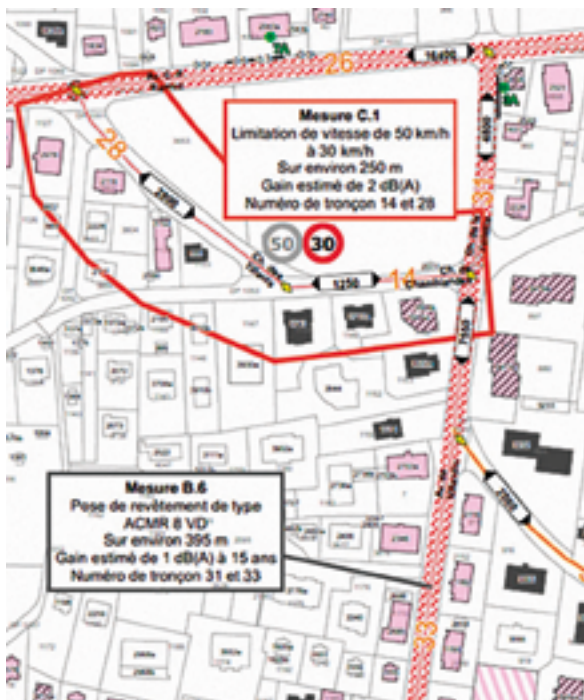
100 %

of the Swiss phone mast do respect the ORNI threshold

☉ 100 % (ORNI)

🇨🇭 Measured nationally

Reduction in traffic noise



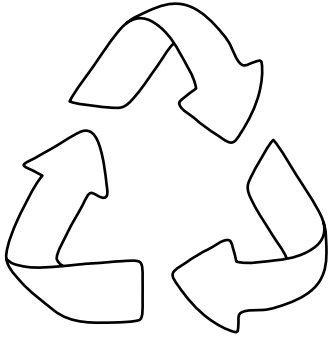
Example of a noise-reduction measure, reducing the speed limit from 50 to 30 kph and erecting sound-absorbing coating.



58 % of the waste is recycled, which is close to the target value of 60 %. The 42 % of waste that is not recycled is incinerated at the Tridel plant in Lausanne. The energy produced by this combustion is recovered in the form of heat by district heating and electricity production. It should be noted that outdoor incineration and fly tipping are no longer permitted in Switzerland.

Municipality actions

✓	Raise environmental awareness among schoolchildren	Permanent
✓	Monitor the quality of the selective sorting	Permanent
✓	Optimise collection infrastructure	Permanent



Recycled



58 %

of the waste is recycled (2016)

④— 60 % (Cantonal waste management plan)

🛡 Measured locally



Burnt



0 %

of the waste is incinerated in the open air (2016)

④— 0 % (LPE)

🛡 Measured locally



Sanitary Landfills

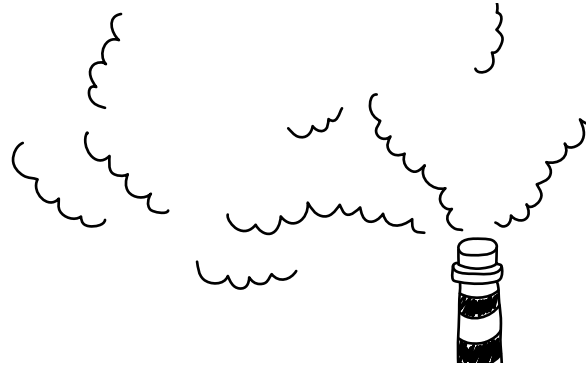


0 %

of the waste is dumped (2016)

④— 0 % (OLED)

🛡 Measured locally



Incinerated

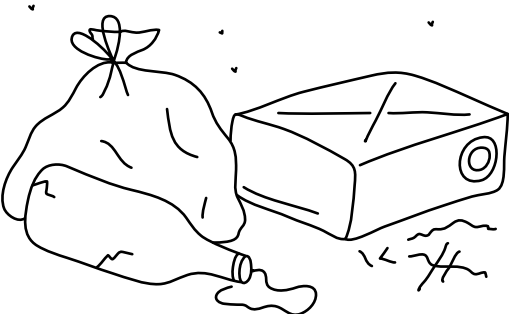


42 %

of the waste is incinerated (2016)

④— 40 % (Cantonal waste management plan)

🛡 Measured locally



Open Dump

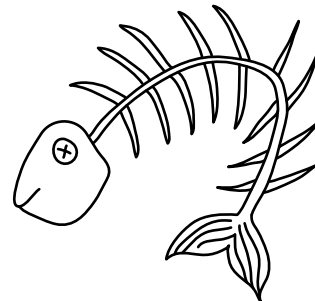


0 %

of the waste are disposed of through unauthorised dumping (2016)

④— 0 % (OLED)

🛡 Measured locally



Other



0 %

of the waste is eliminated in another way (2016)

④— 0 % (OLED)

🛡 Measured locally

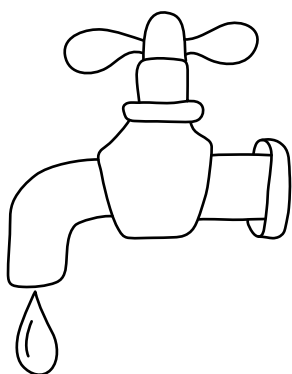
Water and sanitation



Being right next to Lac Léman (Lake of Geneva), the city of Pully has, on its own doorstep, a virtually unlimited potential source of potable water. The quality of the water distributed respects the threshold values for potable water. On the consumption side (217 l/hab/j), Pully is close to the target value (165 l/hab/j). All waste water is subjected to primary treatment and the vast majority (93 %) to secondary treatment. On the other hand, there is no treatment of micropollutants because the legislation does not require this for STEP (wastewater treatment plant) of fewer than 24,000 connected inhabitants.

Municipality actions

✓	Maintain the quality of the potable water and propose specific awareness-raising actions aimed at reducing consumption per inhabitant	Permanent
✓	Renovate the Pully STEP or connection to the Vidy STEP	Planned
✓	Phase in the treatment of micropollutants by 2035	Planned



Drinking Water Quality

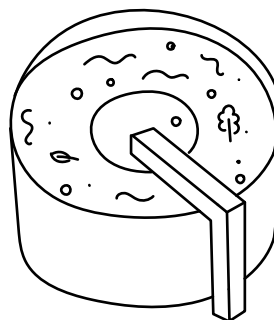


100 %

of the samples meet the quality requirements (2016)

☉ 100 % (LDAI)

🛡 Measured locally



Wastewater Treatment (Primary)



100 %

of the water is treated by primary purification (2016)

☉ 100 % (LEaux)

🛡 Measured locally



Water Consumption

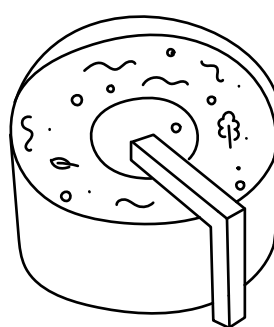


217 l

of water per day and per inhabitant on average (2016)

☞ 165 l per day (Swiss average, 2016, OFEV)

🛡 Measured locally



Wastewater Treatment (Secondary)

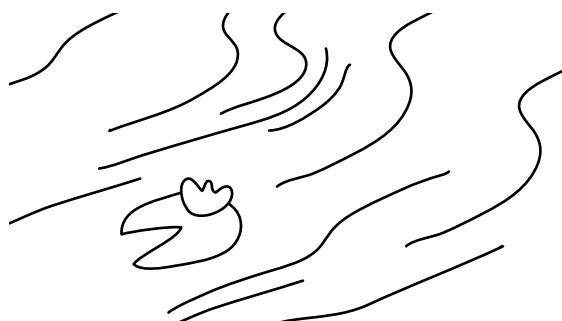


93 %

of the water is subjected to secondary treatment (2016)

☉ 100 % (LEaux)

🛡 Measured locally



Freshwater Consumption

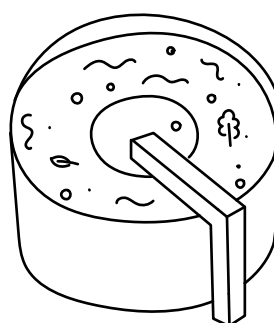


0.02 %

of the available freshwater resources are consumed (2016)

☞ 0.02 % (estimate)

🛡 Measured locally



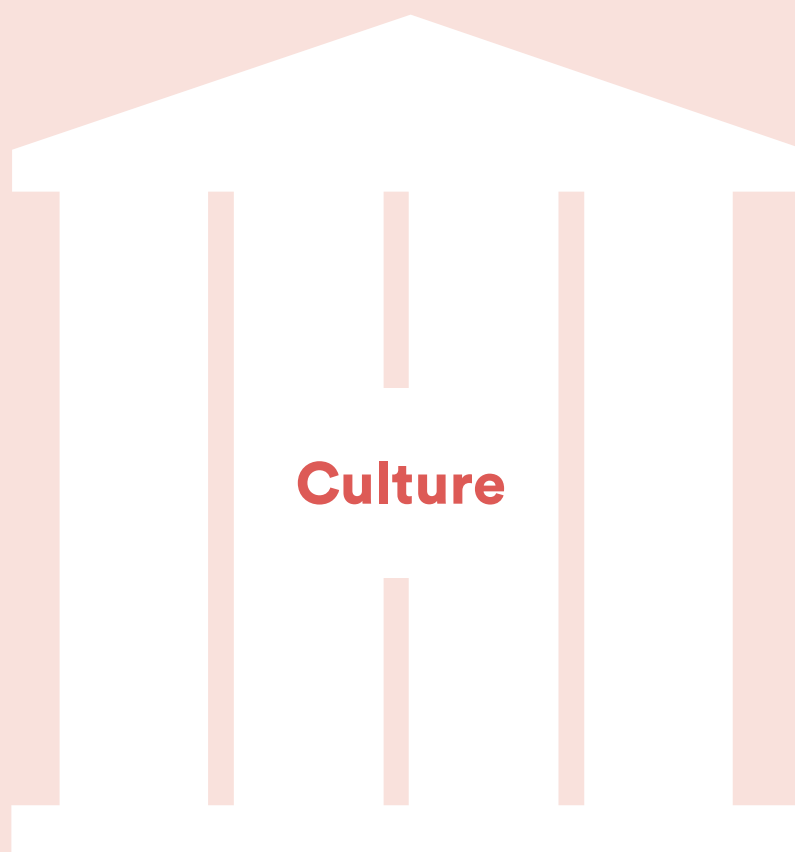
Wastewater Treatment (Tertiary)

0 %

of the water is treated for micropollutants (2016)

☉ 100 % (LEaux) if more than 24,000 inhabitants

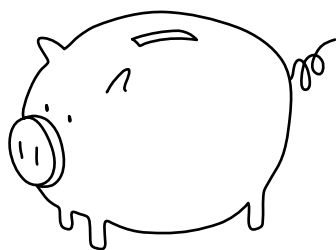
🛡 Measured locally



Only the physical infrastructures have been classified as cultural infrastructures, namely 2 theatres, 2 museums, 1 library/media library and 1 cinema. In addition to these infrastructures, the city of Pully supports a dance company, local and regional cultural events (*Festival Pully Lavaux à l'heure du Québec, Cully Jazz Festival...*) and several local organizations that are culturally active.

Municipality actions

✓	Maintain the quality and diversity of the current cultural offering	Permanent
✓	Create a museum space dedicated to the works of the writer C.F. Ramuz	Ongoing
✓	Adapt the infrastructure of the Octogone Theatre	Ongoing
✓	Develop a project to refurbish the Roman villa, and provide it with sanitation	Planned



Cultural Expenditure

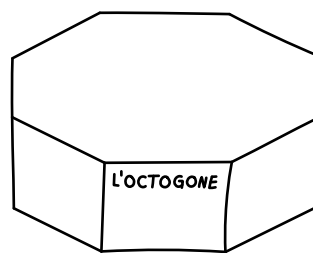


2.7 %

of the budget of the city (2018)

←« 3.3 % (Swiss average, OFS, 2016)

🏛 Measured locally



Cultural Infrastructure

6 infrastructures

cultural per 18,000 habitants (at the Pully level, 2018)

≡ 33 infrastructures per 100,000 inhabitants (U4SSC)

←« Target value not available

🏛 Measured locally

The Octogone



The Octogone Theatre in Pully has provided a stage for some of the most iconic figures from the world of live entertainment for more than forty years. Contemporary dance, concerts and plays together form an eclectic season of forty performances for people of all ages and from all backgrounds. The institution also helps to promote creativity in the local community.

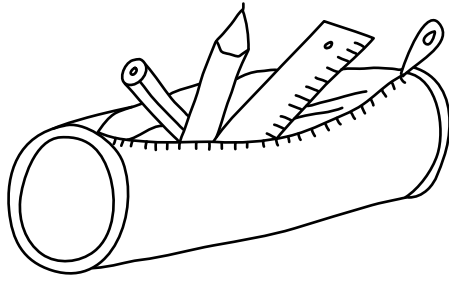
www.theatre-octogone.ch



Although education is the responsibility of the Canton of Vaud, the responsibility for the school buildings and infrastructure lies with the municipality. Access to education is excellent and every pupil has access to the internet and ICT. We should also point out that Pully boasts a very high rate of graduates holding further education diplomas. As for the adult population of readers and writers, it is at the national level and it transpires that 10 % of the Swiss population is illiterate.

Municipality actions

✓	Update and upgrade the furniture and equipment in the schools	Permanent
✓	Organise a Civic Study Day and provide environmental awareness-raising activities for the pupils	Permanent



School Enrollment

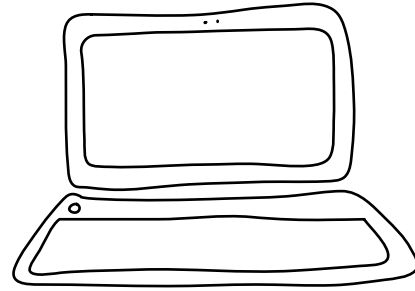


99.96 %

of children go to school (2016)

🏠 100 % (LEO)

🏫 Measured at the conurbation level



Student ICT Access

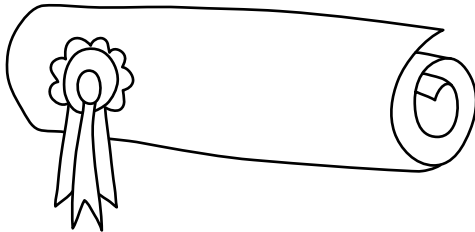


100 %

of students have access to ICT (2016)

🏠 100 % (SDG, objective 4.4, for 2030)

🏫 Measured locally



Higher Education Degrees

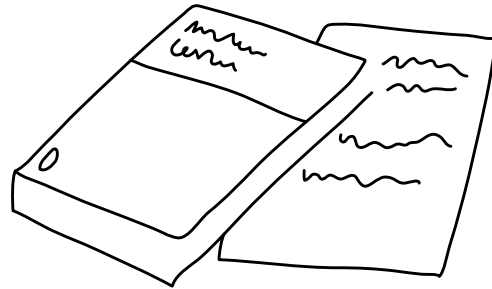


46.6 %

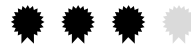
of the population aged 15 and over have a higher education diploma – Uni, EPF, HES (2011-2015)

🏠 47.7 % Swiss average, OFS (2015)

🏫 Measured locally



Adult Literacy



90 %

of the adult population are literate (2016)

🏠 100 % (SDG, objective 4.6, for 2030)

🇨🇭 Measured nationally

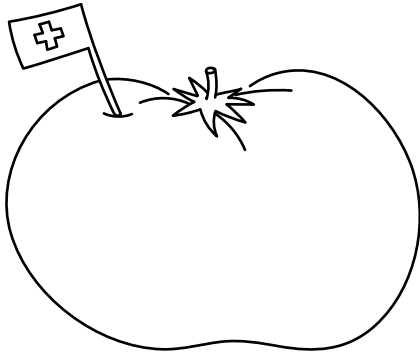


At the national level, 63 % of the food is produced in Switzerland, which is close to the target value of 70 %.

Municipality actions

✓ Provide ground for permaculture, as well as allotments

Achieved



Local Food Production



63 %

of food is produced in Switzerland (2016)

←« 70 % (Motion 06.3880, Federal Assembly)

▣ Measured nationally

Ecological and participatory vegetable garden



The city of Pully has set aside some ground where the *Permaculture Pully association* can develop an ecological and participatory vegetable garden.

www.permaculturepully.ch

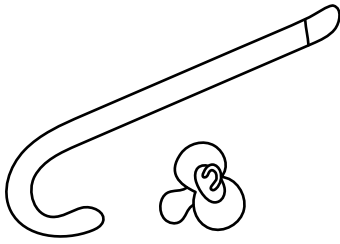


The issue of health is not the responsibility of the municipality but rather that of the canton and the confederation. Life expectancy (83 years) is comparable to the Swiss average and with 9 deaths per 100,000 births, maternal mortality is very low. Moreover, the number of doctors and hospital beds is higher than the national figure. As regards access to care, this is guaranteed for the entire population through medical insurance, which is compulsory in Switzerland. The data for calculating the indicator *Electronic Health Records* are not available.

Municipality actions

✓ Introducing urban fitness in the Quai Milliquet Park

Ongoing



Life Expectancy

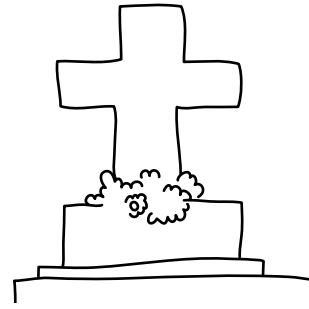


83 years old

(2016)

←« 83.4 Swiss average, OFS (2017)

☐ Measured at the cantonal level



Maternal Mortality Rate



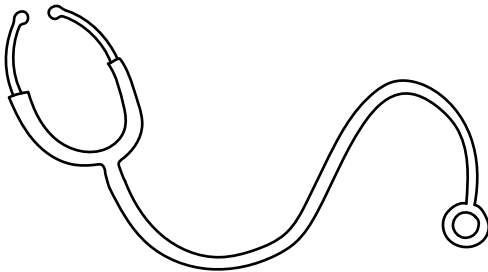
0,9 deaths

per 10,000 live births (2016)

≡ 9 deaths per 100,000 live births (U4SSC)

←« 70 deaths per 100,000 live births
(SDG, objective 3.1, for 2030)

☐ Measured at the cantonal level



Physicians



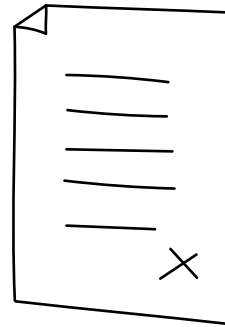
88 doctors

per 18,000 habitants (2016)

≡ 489 doctors per 100,000 inhabitants (U4SSC)

←« 430 per 100,000 inhabitants (Swiss average)

☐ Measured at the cantonal level



Health Insurance / Public Health Coverage



100 %

of the inhabitants have insurance (2016)

◎« 100 % (LaMal)

☐ Measured locally



In-Patient Hospital Beds



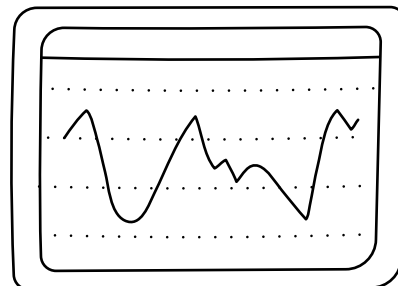
86 beds

per 18,000 habitants (at the Pully level, 2016)

≡ 476 beds per 100,000 inhabitants (U4SSC Value)

←« 470 beds per 100,000 inhabitants (OFSP)

☐ Measured at the cantonal level



Electronic Health Records

Value of the indicator not available

←« Target value not available

– Not measured

Housing



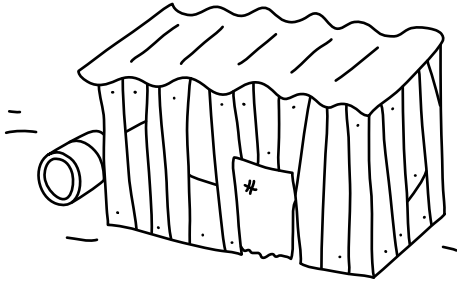
The value of the household expenditure associated with accommodation is not available at the local level. For information, at the cantonal level it is 19 %, which is lower than the target value of 25 %. It should be noted that there are no informal settlements (slum areas) in Pully.

Municipality actions



Aim to make accommodation available at affordable rents
(e.g. construction of the Boverattes district)

Ongoing



Informal Settlements



0 %

of the population live in informal settlements (2016)

← 0 % (SDG 11, objective 11.1, for 2030)

Measured locally



Housing Expenditure



19 %

of household revenue is spent on accommodation (2016)

← 25 % (*Budget-conseil Suisse*/Swiss Budgetary Advisory)

Measured at the cantonal level

The Boverattes district



The municipality has made its housing policy one of the priorities of its legislative programme. In order to create affordable housing, it regarded surface rights as a useful instrument for the community. These rights allow the commune to have housing built by a third party without having to bear the burden of the investment. It also allows a part of the ground to be made available to others, in return for an annual licence fee. In this way, the commune retains control of the ground whilst setting the conditions on the type and price of the housing desired.

projets.pully.ch



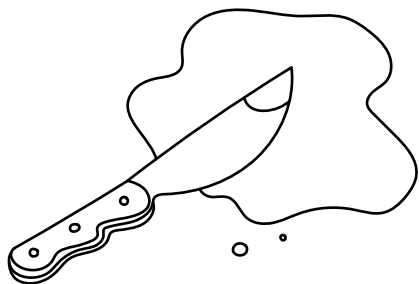
ACCIDENTS AND VIOLENT INCIDENTS

The police and fire brigade are part of the intercommunal associations. Their presence is higher than the national average. As regards fatal accidents and violent incidents, they are lower than the Swiss average by a factor of two.

Municipality actions

✓ Renovation of the police station

Ongoing



Violent Crime Rate



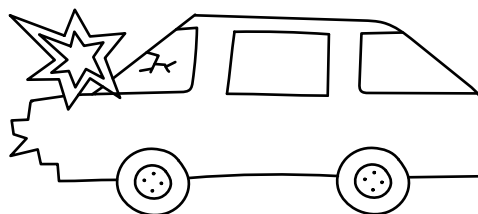
1.2

per 18,000 habitants (at the Pully level, 2016)

≡ 6.7 per 100,000 inhabitants (U4SSC Value)

←≡ 15.6 (Swiss average, OFS)

🛡 Measured locally



Traffic Fatalities



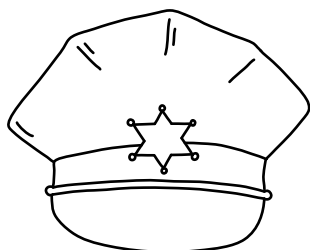
0.2

per 18,000 habitants (at the Pully level, 2016)

≡ 1 per 100,000 inhabitants (U4SSC Value)

←≡ 2.7 per 100,000 inhabitants and year (Swiss average, OFS)

🛡 Measured locally



Police Service



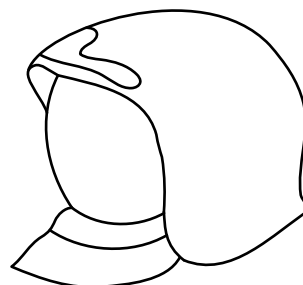
51 police officers

per 18,000 inhabitants (at the Pully level, 2016)

≡ 285 per 100,000 inhabitants (U4SSC Value)

←≡ 220 per 100,000 inhabitants (Swiss average, statista.com)

🛡 Measured locally



Fire Service



69 firefighters

per 18,000 inhabitants (at the Pully level, 2016)

≡ 384 per 100,000 inhabitants (U4SSC Value)

←≡ 133 per 100,000 inhabitants (US Fire Department)

🛡 Measured locally

‘In addition to the standard interventions for disturbances and nuisances, accidents, thefts, etc. the police are carrying out a significant number of interventions of a social nature in support of the population. To this we can add preventive education in the schools and among the general population. Consequently, it would be very useful to identify and add an indicator that might allow the quality of the relationship between the police and the population to be evaluated.’

Jean-Marc Chevallaz

City Councillor in charge of the Directorate of Youth,
Social Affairs and Public Safety

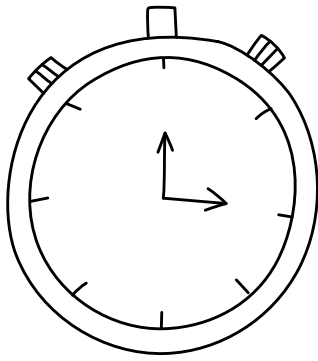


NATURAL DANGERS AND EMERGENCY RESPONSE

Pully is susceptible to a number of small-scale threats (floods and landslides). The emergency services provide their coverage based on a set of contingency plans. Their intervention times are very good

Municipality actions

✓	Keep the map of possible dangers up to date and, where necessary, adapt the construction regulations	Permanent
✓	Analyse the protection measures to be put in place should the River Vuachère burst its banks	Ongoing



Emergency Service Response Time

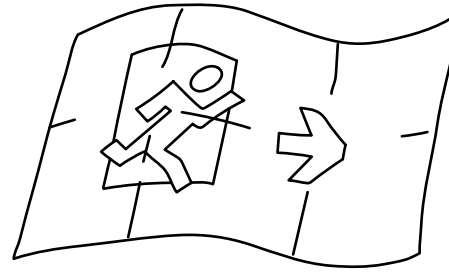


5 minutes (estimate)

(2016)

⌚ 15 minutes (city of Pully)

🛡️ Measured locally



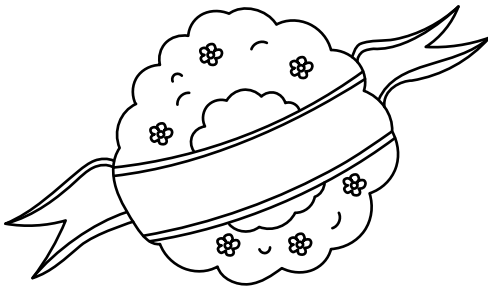
Resilience Plans



Yes

⌚ Yes (LAT)

🛡️ Measured locally



Natural Disaster Related Deaths



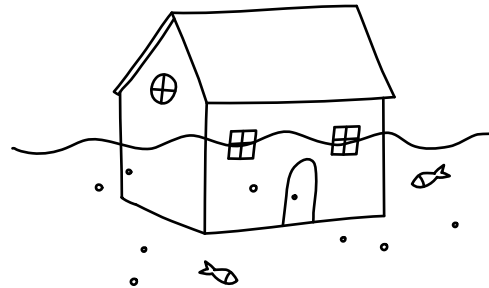
0

per 18,000 inhabitants (on the level of Pully, 2016)

≡ 0 per 100,000 inhabitants (U4SSC Value)

⬅️ < 0.05 people for 100,000 inhabitants
(Swiss average, OFEV)

🛡️ Measured locally



Population Living in Disaster Prone Areas



16%

of the population are living in disaster-prone areas (2016)

⬅️ 0 % (estimate)

🛡️ Measured locally



Disaster Related Economic Losses



< 0.06%

of the budget is set aside for natural disasters (2016)

⬅️ 0.13 % (Swiss average, OFEV)

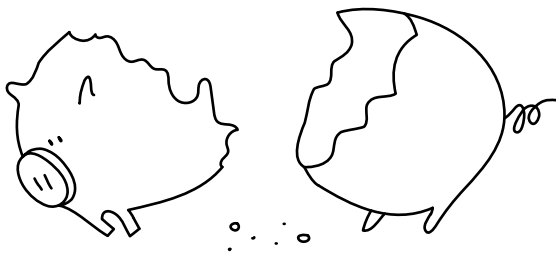
🛡️ Measured locally



The poverty line is half the national average. Nevertheless, the redistribution of wealth is lower than the cantonal and national average. Finally, at the cantonal level, salary equality is not being respected.

Municipality actions

✓	Set up the Children and Youth Foundation, in order to develop day-care centres	Achieved
✓	Support the 'Solidarity neighbourhoods' in their efforts to improve the quality of life and the integration of old people	Achieved



Poverty

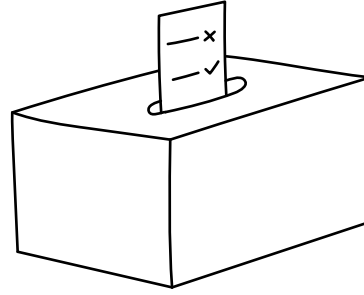


3 %

of the inhabitants live below the poverty line (2016)

← 7.9 % Swiss average, OFS (2010)

Measured locally



Voter Participation

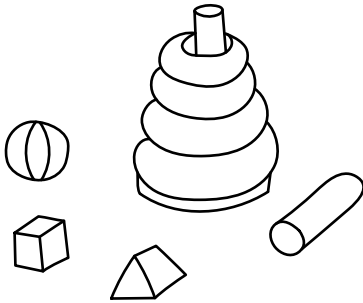


46 %

participation rate (2016)

← 100 % (estimate)

Measured locally



Child Care Availability

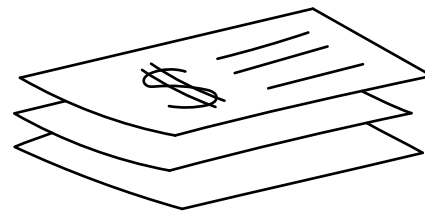


29 %

of pre-school-age children have a child care place (2016)

← 37 % (20 % public and 17 % private child care places)

Measured locally



Gini Coefficient

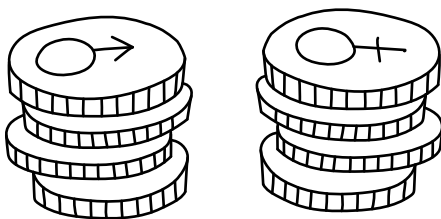


0.51

A Gini coefficient of 0 means that the revenue is split evenly among all inhabitants (2016)

← 0.3 (Swiss average, OFS)

Measured locally



Gender Income Equity



81 %

of the salary earned by a woman in relation to the salary of a man for the same work (2016)

← 100 % (Leg)

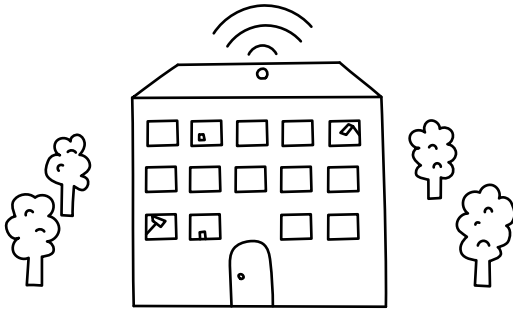
Measured at the cantonal level



The majority of building surfaces are covered by an ICT monitoring system, primarily for fire detection and heating regulation. Nevertheless, at present no public building has been certified according to a recognised sustainable development standard.

Municipality actions

✓	Carry out specific actions under the 'Energy City' label	Permanent
✓	Refurbish the tennis clubhouse	Achieved
✓	Refurbish football pitch and changing rooms	Achieved
✓	Draw up a general plan for the maintenance and renovation of the commune's residential buildings, including energy-related aspects	Planned
✓	Enhance the site of the Priory	Planned
✓	Refurbish the Nautical Club	Planned



Integrated Building Management Systems in Public Buildings

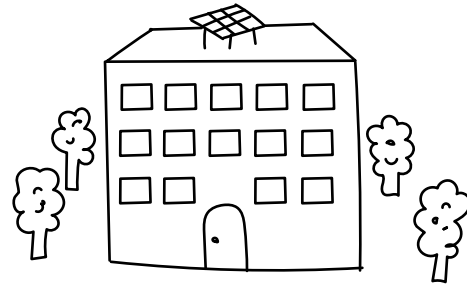


64.5 %

of the public building surface has a building management system TIC (2016)

← 100 % (Energy City)

Measured locally



Public Building Sustainability



0 %

of the public building surface is certified according to a recognised standard – e.g. Minergie (2016)

← 100 % (European Union, Directive 2010/31/UE)

Measured locally

Enhancement of the Priory site



The enhancement of the Priory site is a major project in the renovation of the commune's property assets. Partly comprising of protected structures, which require significant amount of work, this is a magnificent challenge for adding value to the buildings and public spaces. From an environmental point of view, it will considerably improve the residential buildings' current energy performance and enable the intelligent management of the technical installations. The Priory site will be occupied by the commune's administration and will include a centralised reception area, in order to provide the citizens with a better reception experience.

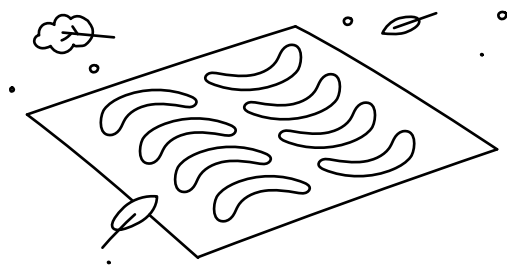
projets.pully.ch

Drainage

The quality of the water drainage network is primarily assured by the progressive separation of the rain water and waste water networks, as well as by cameras inspecting the state of the collectors and by bringing the properties into conformity. Apart from a sensor to measure the flow at the entrance to the STEP (wastewater treatment plant), the city of Pully has no ICT installations to monitor its drainage network.

Municipality actions

✓	Check that private properties are brought into conformity	Permanent
✓	Progressively eliminate the mixed water networks by creating separate networks for waste water and rain water	Ongoing



Drainage / Storm Water System ICT Monitoring

0%

of the drainage water system is monitored by ICT (2016)

← Target value not available

Measured locally

Inspection by camera



The water drainage network is inspected by cameras, in accordance with a programme designed to provide optimum maintenance (deposits, roots, etc.) and identify possible damage (cracks, collapses, etc.).

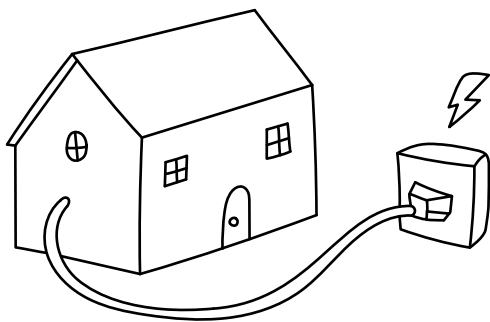


Access to electricity is assured throughout the city.

Although interruptions are less frequent than the Swiss average, they tend to last longer. As regards the new technologies, the ICT approach of the electricity network – with intelligent meters and the balancing of the network – has been put on hold pending the arrival of the future electricity law, which has to establish the implementation framework.

Municipality actions

✓	Obtain 'Energy City' certification	Achieved
✓	Implement the new energy law (LEne) under the provisions of the 'Energy 2050' energy transition programme	Planned



Access to Electricity

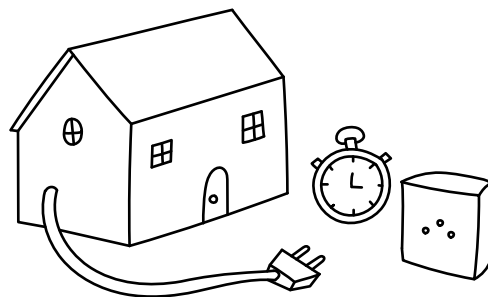


100 %

of households have access to electricity (2016)

⌚ 100 % (LapEL)

🛡 Measured locally



Electricity System Outage Time

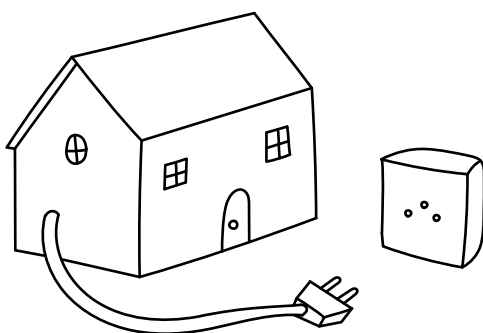


76 min

average annual duration of outages (2016)

⌚ 63 min (Swiss average, 2016, Elcom)

🛡 Measured locally



Electricity System Outage Frequency

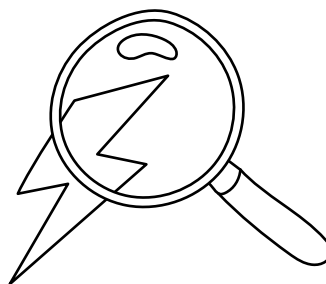


6 %

of customers have experienced an outage during the year (2016)

⌚ 30 % (Swiss average, 2016, Elcom)

🛡 Measured locally



Electricity Supply ICT Monitoring

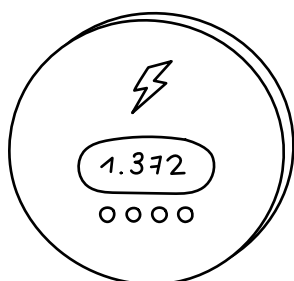


0 %

of the electricity supply is monitored by ITC (2016)

⌚ -

🛡 Measured locally



Smart Electricity Meters

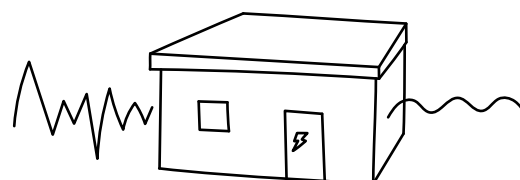


0 %

of the meters installed are intelligent (2016)

⌚ 80 % by 2027 (OApel)

🛡 Measured locally



Demand Response Penetration



0 %

of the network is balanced in real time (2016)

⌚ -

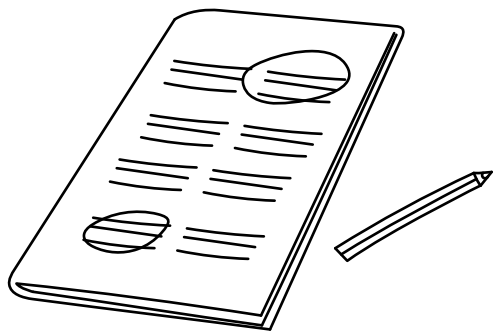
🛡 Measured locally



The unemployment rate, particularly among young people, is close to the incompressible rate. In comparison to the cantonal figures, the employment rate in ICT is lower in Pully.

Municipality actions

✓	Provide the administration staff with training and development programmes	Permanent
✓	Participate in the training of young people by welcoming apprentices (14 % of the commune staff)	Permanent



Unemployment Rate

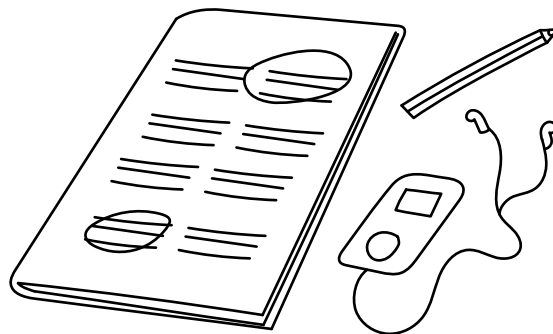


3.52 %

unemployment rate (2016)

←« 5 %, Swiss average, OFS (2016)

🇨🇭 Measured locally



Youth Unemployment Rate

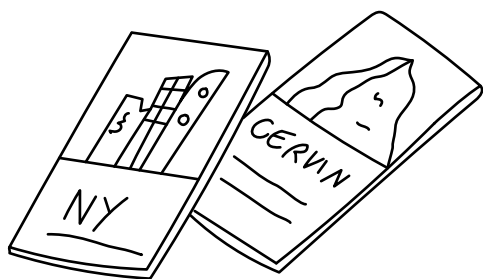


2.6 %

of those aged 15 to 24 years old are unemployed (2016)

←« 7.8 %, Swiss average, OFS (2016)

🇨🇭 Measured locally



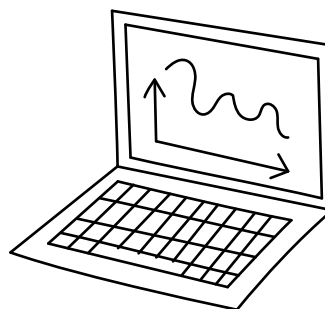
Tourism Sector Employment

4.2 %

of jobs are in the tourism sector (2016)

←« Target value not available

🇨🇭 Measured nationally



ICT Sector Employment



2.7 %

of jobs are in ICT (2016)

←« 4.2 % (Cantonal average, OFS & STATENT)

🇨🇭 Measured locally

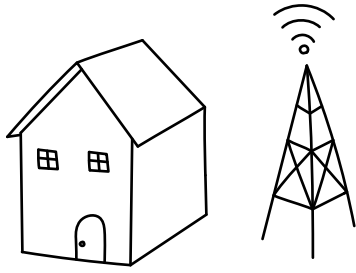


Pully boasts an infrastructure that is good for accessing the internet, the wireless network and broadband wireless internet (4G). Public Wi-Fi is available in several strategic locations and broadband internet – with a fibre optic connection to the street (FTTS), which is then fed into the households through the existing network – is currently being deployed.

Municipality actions

- ✓ Assure technological monitoring to support the deployment, by the various operators, of a very high-speed network with fibre optic into the households (FTTH)

Permanent



Household Internet Access

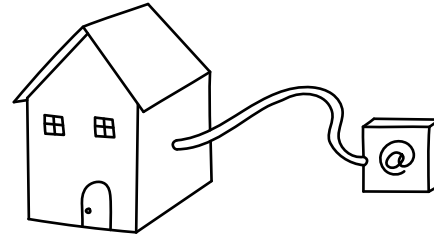
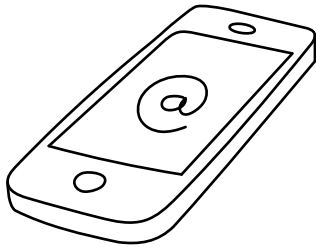


91%

of households have access to the internet (2016)

⌂ 100 % (LTC)

🇨🇭 Measured nationally



Fixed Broadband Subscriptions

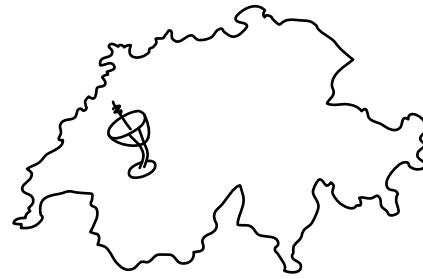


44.8 %

of households have fixed broadband access (2016)

← 100 % (DETEC)

🇨🇭 Measured nationally



Wireless Broadband Subscriptions



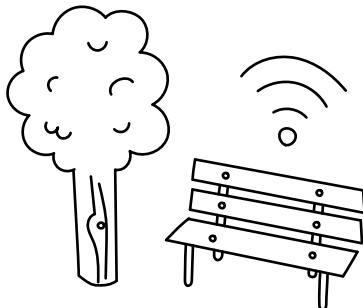
18,216

subscriptions per 18,000 habitants (at the Pully level, 2016)

≡ 101,200 subscriptions per 100,000 inhabitants (U4SSC Value)

← 100,000 subscriptions per 100,000 inhabitants

🇨🇭 Measured nationally



Availability of Wi-Fi in Public Areas



5 zones

are covered by public Wi-Fi (2016)

← 6 zones (city of Pully)

🇨🇭 Measured locally

Wireless Broadband Coverage



100 %

of the territory is covered by the wireless network (2016)

← 98 % (Swiss average, OFS)

🇨🇭 Measured nationally

Innovation



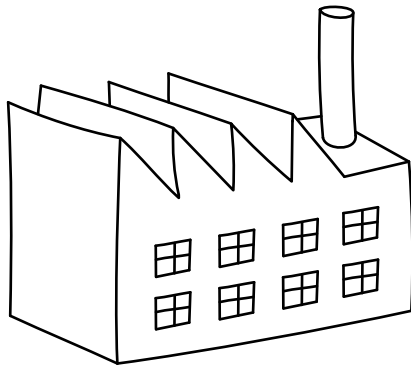
Pully has little information on its companies. The proportion of SMEs is close to the Swiss average. At the national level, 3.5 % of the PIB are set aside for research and development, which exceeds the target value of the European Union (3%). Moreover, with 46.3 patents per 100,000 inhabitants, Switzerland greatly exceeds the averages of the EU and the USA (5.3 and 3.7 patents per 100,000 inhabitants respectively).

Municipality actions



Step up the promotion of the city among companies and introduce and foster new activities

Planned



Small and Medium-Sized Enterprises

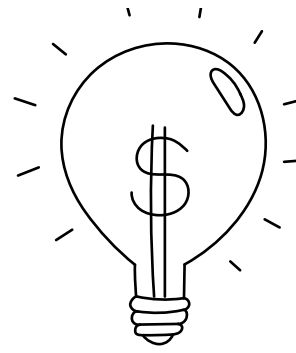


99 %

of businesses are SMEs (2016)

←« 99 % (Swiss average, OFS, STATENT)

🇨🇭 Measured locally



Research & Development Expenditure

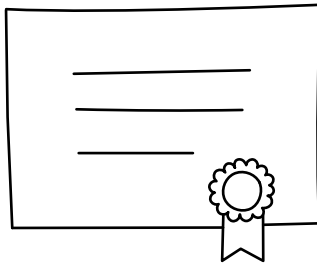


3.53 %

of GDP is set aside for R&D (2016)

←« 3 % (European Union, Objectives 20-20-20, for 2020)

🇨🇭 Measured nationally



Patents



8

patents per 18,000 inhabitants (at the Pully level, 2016)

≡ 46.3 patents per 100,000 inhabitants (U4SSC Value)

←« 6.8 patents per 100,000 inhabitants in the United States (2016)

🇨🇭 Measured nationally

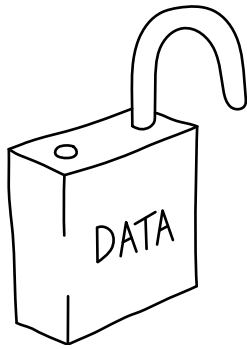
Public sector



With nine e-services online, Pully already has some expertise in cyber administration. As regards open data, none is currently available. The indicator *Electronic Payment* has not been surveyed because its definition remains unclear.

Municipality actions

✓	Pursue the deployment of e-services depending on the needs	Permanent
✓	Devise a 'Smart City' strategy	Achieved



Open data

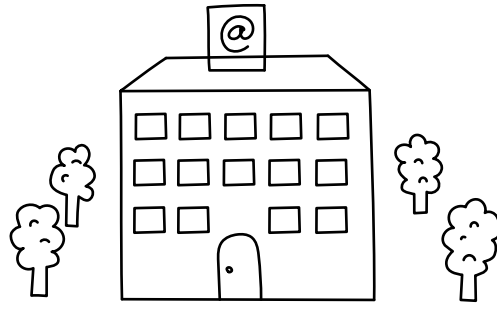


0 %

of data are public in Pully (2016)

← 100 % (Confederation)

Measured locally



e-Government



9

services available online (2016)

← -

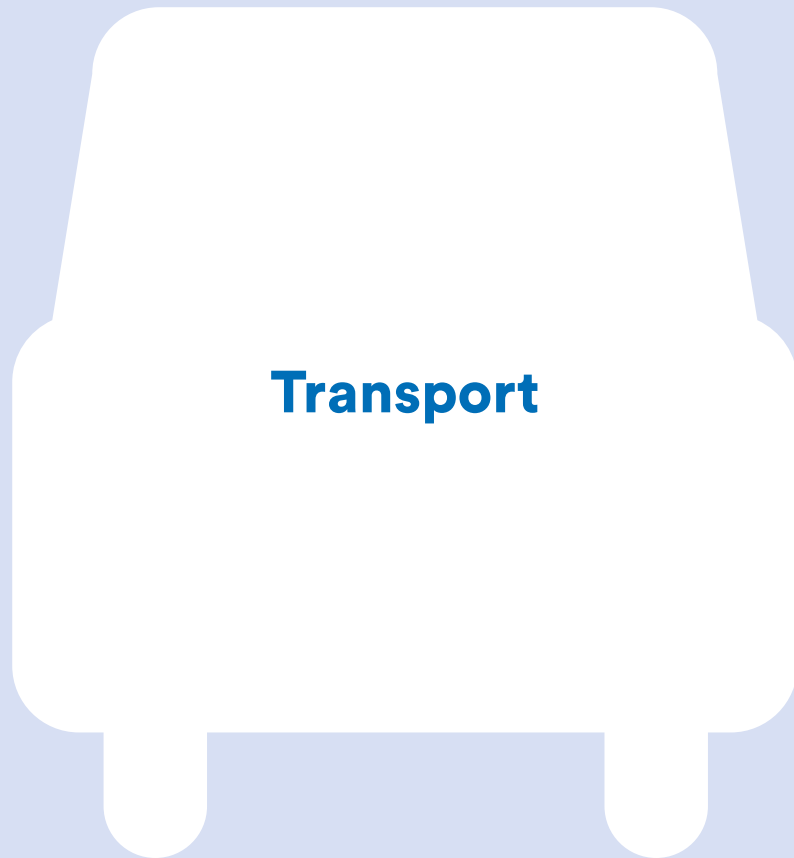
Measured locally

E-excavation permits



Every building site in a public area requires an excavation permit, a procedure that involves various administrative services: underground networks (potable water, sanitation and electricity), police, highways and land registry. Faced with an increase in requests to excavate on its territory, Pully decided to streamline the procedure for issuing the permits. Thanks to a close intercommunal working relationship, a cyber administration software was developed to digitalise and simplify the process. Since 2015, it has been possible to make requests online.

smart.pully.ch/en/projects



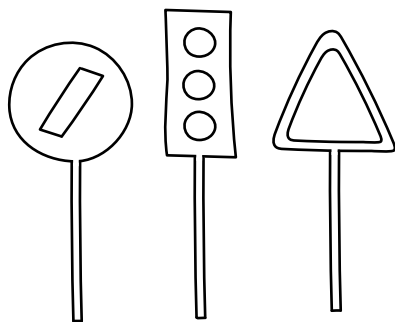
TRAFFIC MONITORING

The city has no real-time traffic monitoring. However, it has implemented the 'Urban Mobility Observatory' project, which uses Big Data technology to measure the traffic in the city center and its attractiveness.

Municipality actions

- ✓ Press ahead with the 'Urban Mobility Observatory' project

Ongoing



Intersection Control

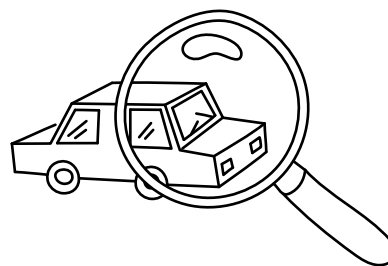


100 %

of the traffic lights at intersections operate according to the volume of traffic and the rule of priority (2016)

←« 100 % (estimate)

🛡 Measured locally



Traffic Monitoring



0 %

of the main routes are monitored (2016)

←« -

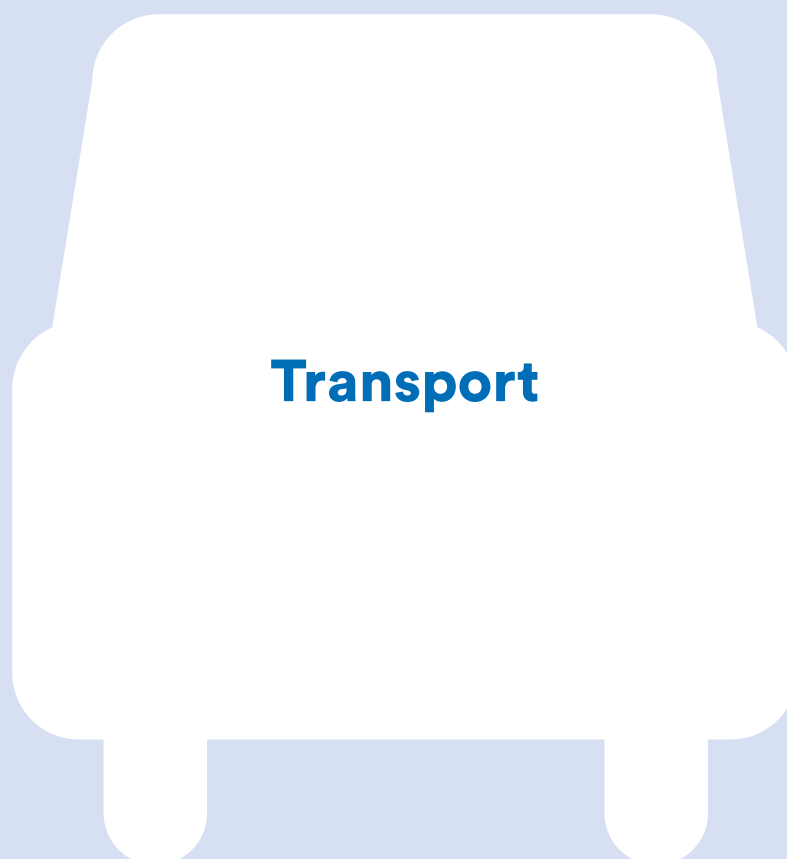
🛡 Measured locally

Mobility observatory



Since 2015, Pully has been conducting a pilot project, working closely with Swisscom and the EPFL. Receiving anonymised and aggregated mobile phone signals on the Swisscom antennas, the system enables the flow of the users' movements around the city to be visualised. A 'smart' tool with which to understand today's city and imagine the city of tomorrow.

smart.pully.ch/en/projects



PUBLIC TRANSPORT

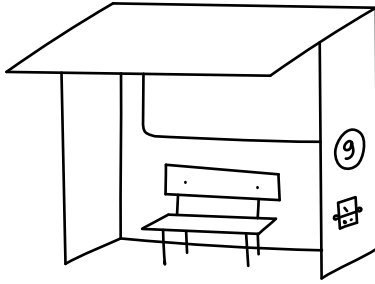
Overall, the quality of service provided by the public transport network is excellent, with virtually the entire population living close to a bus stop or a railway station. In addition, public transport users have dynamic, real-time information tools that provide them with a timetable that is permanently accessible and keeps them right up to date with the current state of the network.

Municipality actions



Continue the refurbishment of the bus stops in order to make them more comfortable

Ongoing



Public Transport Network Convenience

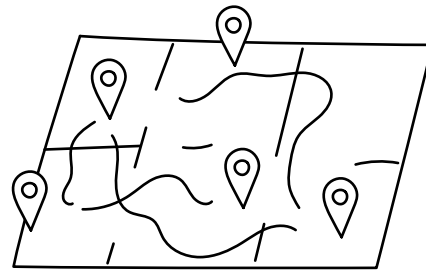


99.9 %

of inhabitants live at least 500 m from a bus stop or a railway station (2016)

←↩ 100 % (estimate)

🛣 Measured locally



Public Transport Network



24 km

Of PT network per 18,000 inhabitants
(at the Pully level, 2016)

≡ 134 km PT network per 100,000 inhabitants
(U4SSC Value)

←↩ 138 km per 100,000 inhabitants (city of Pully)

🛣 Measured locally

tL	
GEORGETTE	5'
PULLY GARE	2'
LUTRY CORNICHE	8'

Dynamic Public Transport Information

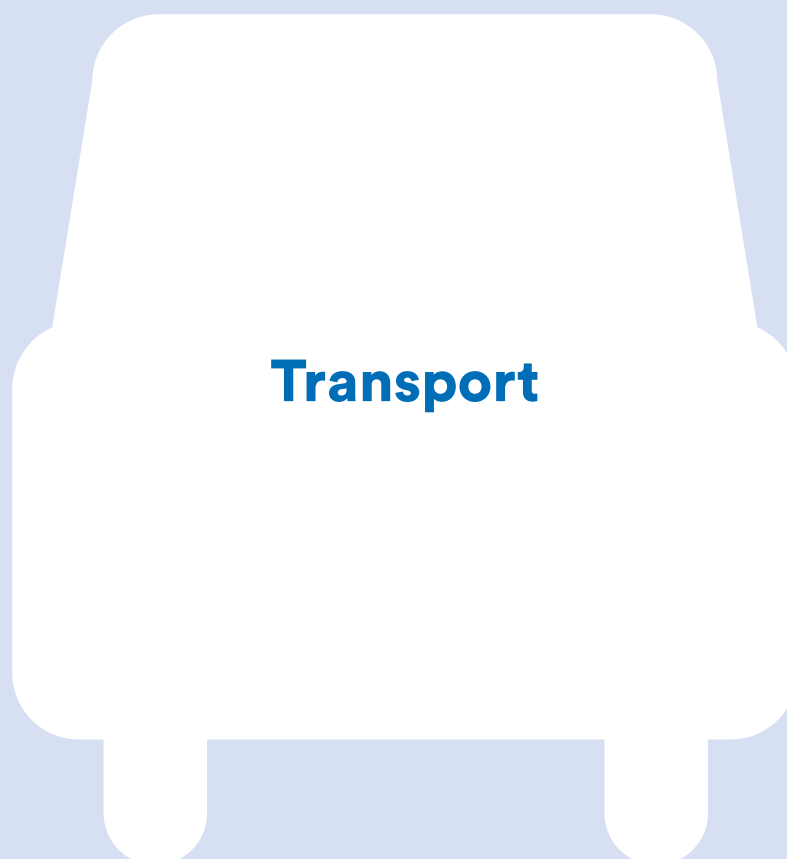


100 %

of bus stops and stations have a dynamic information system (2016)

←↩ 100 % (estimate)

🛣 Measured locally

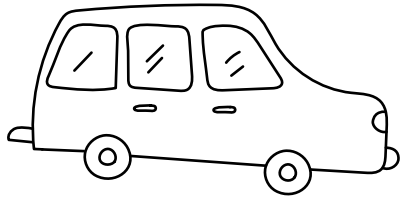


MODE OF TRANSPORT

Compared with the national figures, the modal share of private vehicles is higher in the Lausanne-Morges conurbation. Conversely, walking, cycling and using public transport constitute a minority of the transportation options being chosen.

Municipality actions

✓	Reconfigure the road network by giving priority to bus routes, pedestrians and bicycles	Ongoing
✓	Support the development of the public transport services, in particular the 'Strategic Axes' urban public transportation project	Ongoing



Private Vehicle

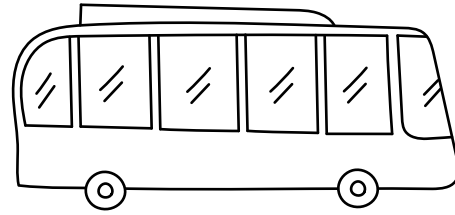


69 %

of the inhabitants use a private vehicle (2016)

←« 54 % (Swiss average, OFS)

☐ Measured at the conurbation level



Public transport

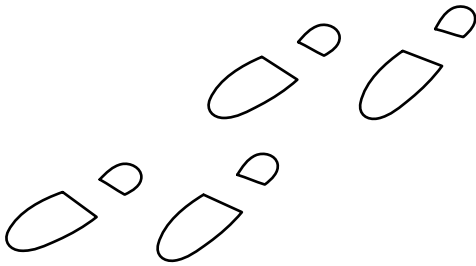


24 %

of the inhabitants use public transport (2016)

←« 30 % (Swiss average, OFS)

☐ Measured at the conurbation level



Walking

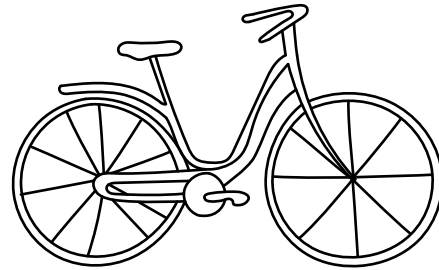


2 %

of the inhabitants walk (2016)

←« 9 % (Swiss average, OFS)

☐ Measured at the conurbation level



Cycling

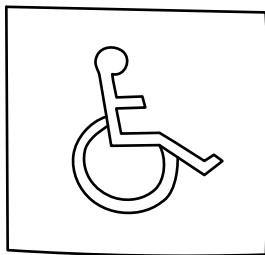


1 %

of the inhabitants ride a bicycle (2016)

←« 7 % (Swiss average, OFS)

☐ Measured at the conurbation level



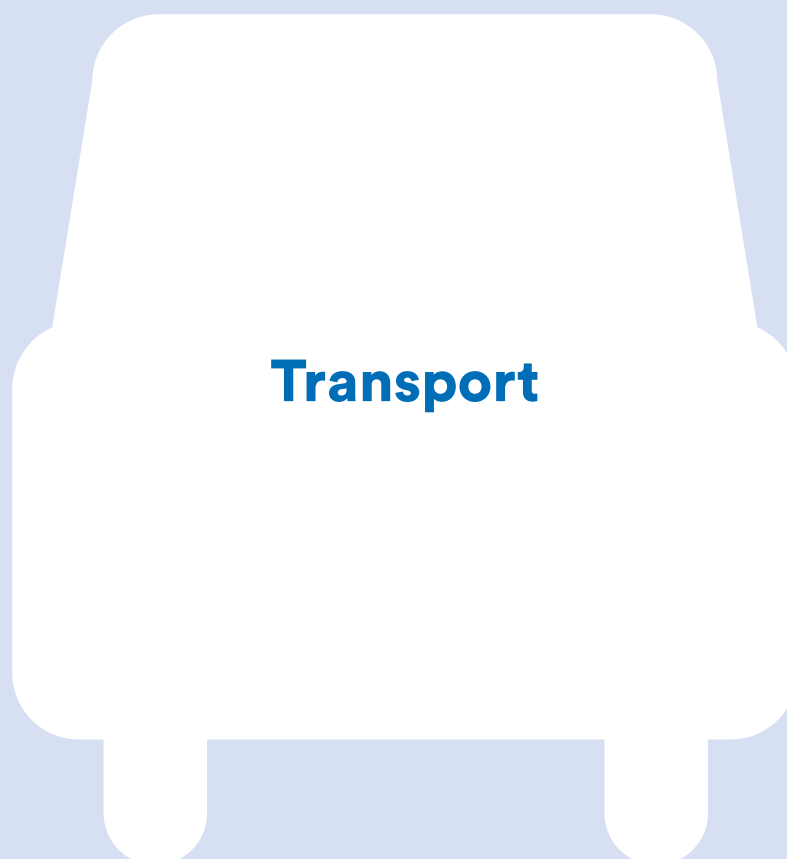
Paratransit

1 %

of the inhabitants use paratransit (2016)

←« Target value not available

☐ Measured at the conurbation level

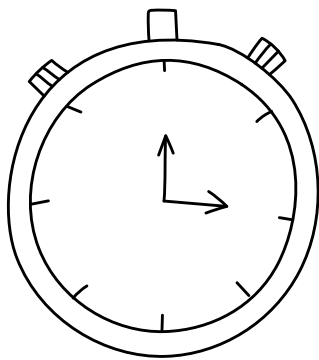


TRAFFIC FLOW, SHARED MOBILITY AND LOW-CARBON-EMISSION MOBILITY

The provision of self-service vehicles and bicycles is poor or non-existent, although the city has planned to make self-service bicycles available. Likewise, a further development of the cycle paths is desirable as these are only halfway towards the target set for 2030. As for low-carbon-emission vehicles, these constitute just a small fraction of the passenger vehicles.

Municipality actions

✓	Replace the administration's fleet of internal combustion vehicles with 100 % electric vehicles	Ongoing
✓	Study the mobility flows in the city center	Ongoing
✓	Provide self-service bicycles	Planned



Travel Time Index

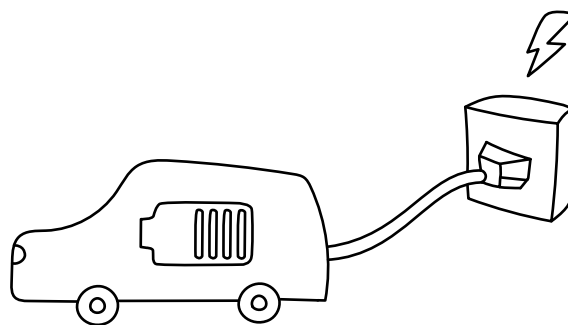


1.14

relationship between travel time during the rush hour and travel time in free-flowing traffic (2016)

← 1.5 (an index of < 1.5 indicates a good traffic flow, an index of between 1.5 and 2.5 is acceptable and an index of > 2.5 is less desirable)(ITU)

Measured locally



Low-Carbon Emission Passenger Vehicles

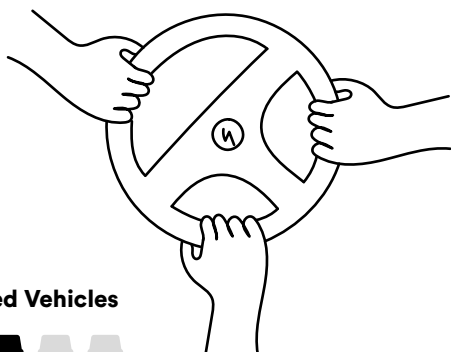


0.2%

of registered passenger vehicles are low-carbon-emission (2016)

← 100 % (estimate)

Measured locally



Shared Vehicles



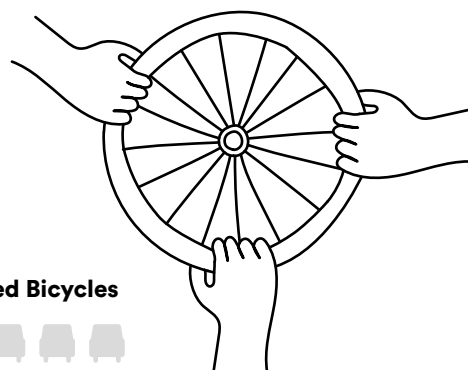
9

Vehicles shared per 18,000 inhabitants (at the Pully level, 2016)

≡ 50 vehicles shared per 100,000 inhabitants (U4SSC Value)

← 18 by 2030 (city of Pully)

Measured locally



Shared Bicycles



0

bicycles shared per 18,000 inhabitants (at the Pully level, 2016)

≡ 0 bicycles shared per 100,000 inhabitants (U4SSC Value)

← 492 bicycles per 100,000 inhabitants by 2030 (city of Pully)

Measured locally



Bicycle Network



4.5 km

of cycle paths per 18,000 inhabitants (at the Pully level, 2016)

≡ 25 km of bicycle network per 100,000 inhabitants (U4SSC Value)

← 49 km per 100,000 inhabitants by 2030 (city of Pully)

Measured locally

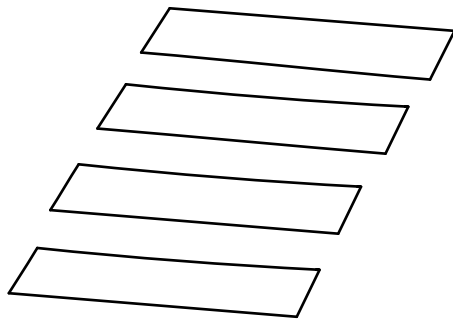
Urban Planning



The municipality must comply with federal and cantonal laws, and ensure the implementation of various guiding documents such as the Lausanne-Morges Conurbation Project (PALM), the map of natural dangers, the cantonal master plan, etc. At the commune level, this would be achieved by carrying out assignment plans or implementing measures to improve mobility, in particular the ‘Strategic Axes’ of urban public transport.

Municipality actions

✓	Complete the project to redesign Rue de la Poste	Ongoing
✓	Make detailed plans for strategic sectors	Ongoing
✓	Complete the Place de la Clergère redevelopment project	Planned



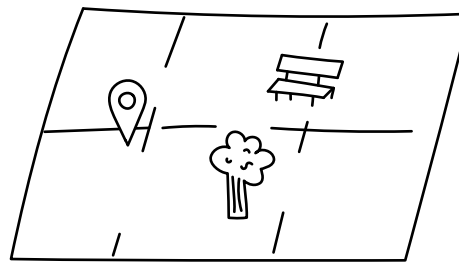
Pedestrian Infrastructure

2.9%

of the territory is pedestrianised (2016)

← Target value not available

Measured locally



Urban Development and Spatial Planning



A variety of plans are available (2016)

Yes (LAT)

Measured locally

Redesigning the Rue de la Poste



The Rue de la Poste is probably one of Pully's liveliest thoroughfares. The municipality wishes to make it even more attractive and friendly for the inhabitants. To achieve this, it suggests improving its layout and the quality of its public spaces.

projets.pully.ch

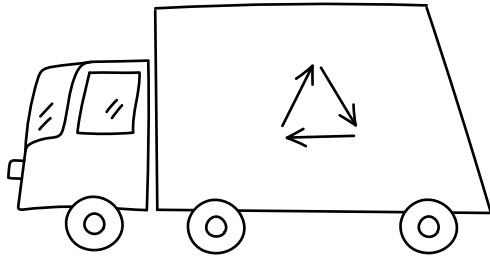


A public waste collection system serves the entire city and enables its inhabitants to recycle waste products. This involves collecting door to door and also from collection points (eco points and waste collection sites).

Municipality actions

- ✓ Modernise the eco points

Ongoing



Solid Waste Collection



100 %

of households have access to a waste-collection system (2016)

100 % (LPE)

Measured locally

Eco points



Eco points are small collection points with containers for different types of waste.

Water and sanitation

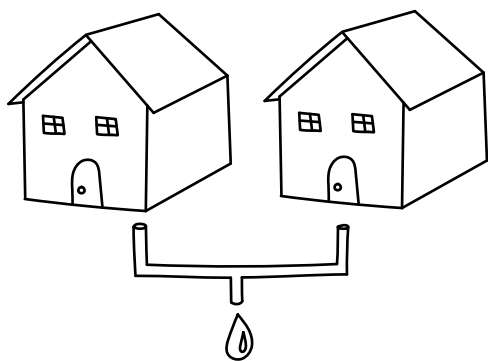


NETWORKS

Each of the city's households has firstly, a supply of potable water and secondly, a connection to a water drainage system connected to a water treatment plant (STEP). Water loss from the potable water network (11%) is close to the target value (7%).

Municipality actions

✓	Renovate the subterranean infrastructures in order to reduce leaks	Permanent
✓	Separate the sanitation network	Permanent
✓	Draw up a detailed potable water distribution plan (PDDE)	Achieved



Basic Water Supply

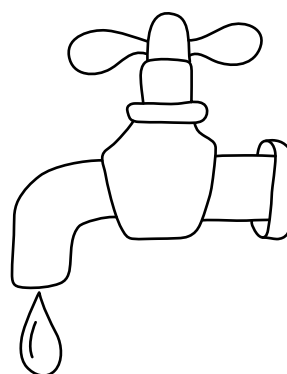


100 %

of the inhabitants have access to water (2016)

④— 100 % (LEaux)

🛡 Measured locally



Potable Water Supply

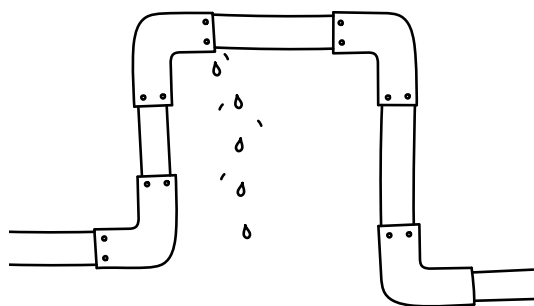


100 %

of the inhabitants have access to potable water (2016)

④— 100 % (LEaux)

🛡 Measured locally



Water Supply Loss

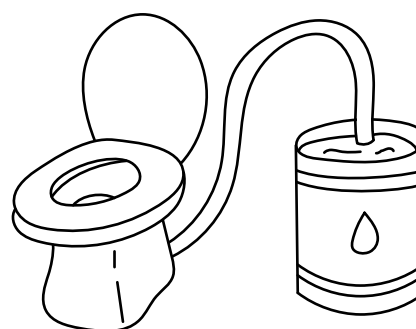


11 %

of the water distributed is lost (2016)

④— 7 % (PDDE)

🛡 Measured locally



Wastewater Collection

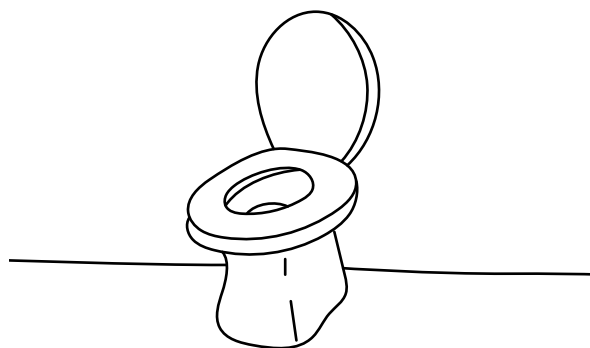


100 %

of the water used is collected and treated in a STEP (2016)

④— 100 % (LEaux)

🛡 Measured locally



Household Sanitation



100 %

of households have sanitation (2016)

④— 100 % (LPEP)

🛡 Measured locally

Water and sanitation



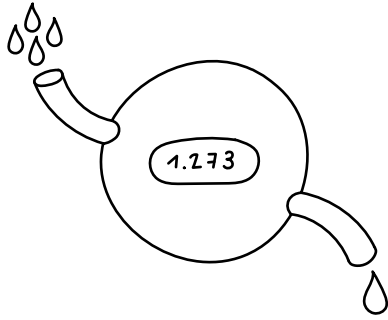
MONITORING SYSTEM

ICT system that monitors leaks of potable water, installed in 94 per cent of the network, helped reduce water leaks. On the other hand, households are not equipped with remotely-operated water meters.

Municipality actions

- ✓ Develop OpenSource solutions to manage the water networks

Ongoing



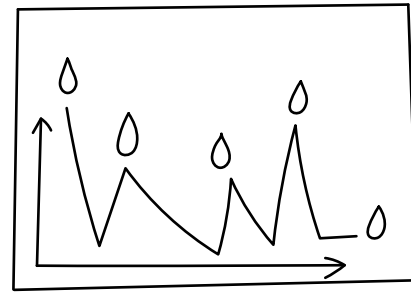
Smart Water Meters

0 %

of the water meters are smart (2016)

← Target value not available

Measured locally



Water Supply ICT Monitoring



94 %

of the water network is monitored by ICT (2016)

← 100 % (estimate)

Measured locally

Tool for managing the potable water network (QWAT)



Potable water pipes, sewage pipes, electricity and fibre optic cables: the cellars of the citizens of Pully play host to a multitude of things requiring maintenance, renovation and development. With the aim of improving the management of their potable water networks, Pully and several other Romande cities, towns and communes have joined forces to develop a visualisation and exploitation tool based on OpenSource technologies.

smart.pully.ch/en/projects



CONCLUSION



Discussion

The working group decided to discuss the results of the U4SSC method through 7 questions, as detailed below.

Question 1

What is the quality of the indicators?

As the indicators were determined according to a method that guarantees the reliability and precision of the findings, their quality is linked to the level at which they are measured. The following four scenarios can be seen:

①

The indicator is measured at the level of the city of Pully. The measurements of this type of indicator may be regarded as good.

②

In rare cases, the city level is not appropriate for measuring the indicator and it is the cantonal level that is valid, as is the case for the *In-Patient Hospital Beds*. The measurements of this type of indicator may be regarded as good.

③

The indicator should be measured at the Pully level, but this measurement is not available. By default, the data sources are measured at the regional or national level.

- Regional level: for example *Housing Expenditure*;
- National level: for example *Greenhouse Gas Emissions*.

The representativeness of these indicators is approximately at the level of the city of Pully but tends towards the higher level. Therefore, it can be considered average (if regional/cantonal level) to weak (if national level).

④

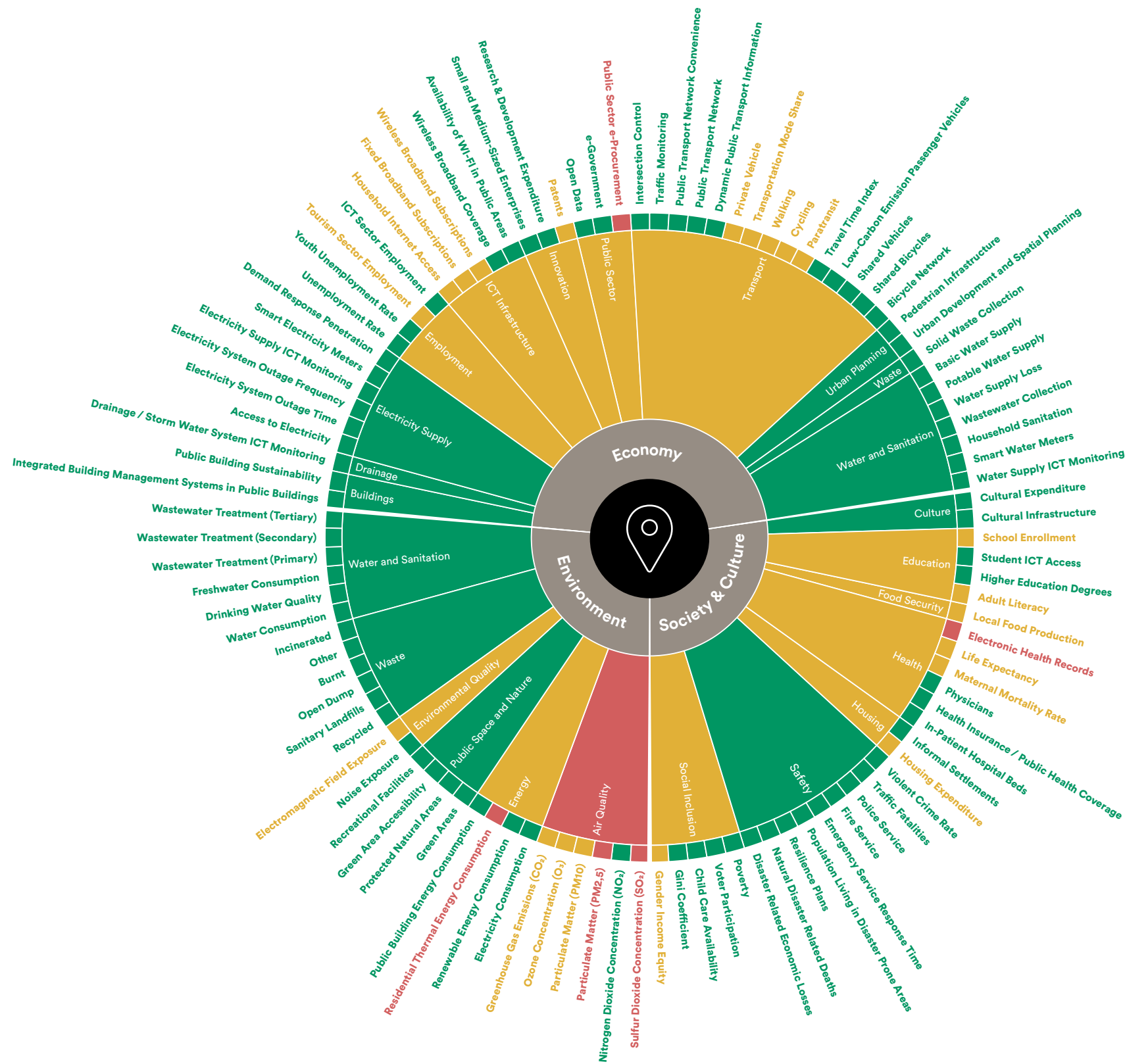
The data for calculating the indicator are not available. For example: *Fine Dust Concentration (PM2.5)*.

Various insights can be taken from the question of the levels:

- 75 % of the indicators are measured at the proper level, which can be regarded as a good result;
- The appropriate level of measurements is local (city of Pully) and, in some rare cases, regional (Lausanne-Morges conurbation or Canton of Vaud);
- Although the collection of the internal city indicators was relatively quick, this was not the case for the identification of the external indicators (Lausanne-Morges conurbation, Canton of Vaud, Swiss Confederation, international).

Based on these observations, and if this model were to be extrapolated to the whole of Switzerland, one proposal would be for the confederation to take the lead in collecting the data for those indicators external to the cities, towns and communes, and place them at the latter's disposal. This would make it easier to use the U4SSC initiative on a national scale, thus making it possible for the cities to compare themselves with one another and foster and develop close working relationships. On the other hand, this would provide the confederation with a set of standardised, communal data to which it does not usually have access today

Wagon wheel depicting the quality of the indicators



- Indicators measured at the proper level (Pully or Canton of Vaud)
- Approximate indicators, i.e. those measured At an inappropriate scale (Conurbation, Canton, Confederation, International)
- Indicator not calculated

Question 2

How pertinent are the target values?

Although the U4SSC certification ensures that the city of Pully has measured indicators linked to digitalisation and sustainability according to standardised criteria, which is a necessary first step, it does fail to propose a target to be reached in order to establish Pully's effective level of digitalisation and sustainability. To illustrate this, the U4SSC initiative may be compared to a thermometer that measures the body's temperature perfectly without indicating that the temperature to be in good health is 37 degrees.

Consequently, to be able to evaluate the performance of its indicators, the city of Pully carried out a survey of the target values. The wheel below established the quality of these values, collected for each indicator.

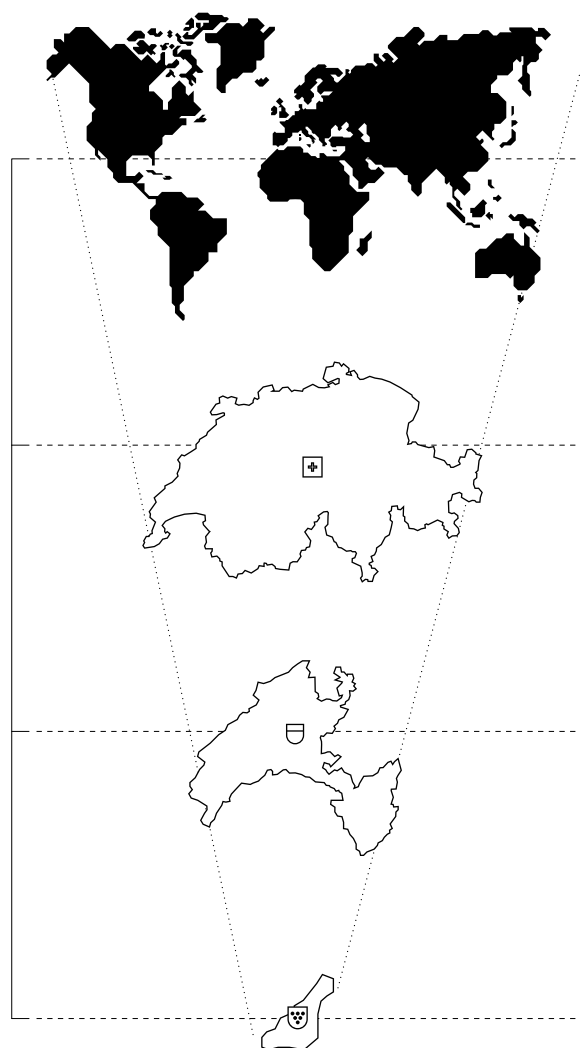
A number of insights may be drawn from the survey of the target values:

- Given the sheer quantity of laws, regulations and statutes, the survey of the target values is an arduous task and there is no guarantee that it will be exhaustive.
- Only 38 % of the target values can be classed as 'high quality'.

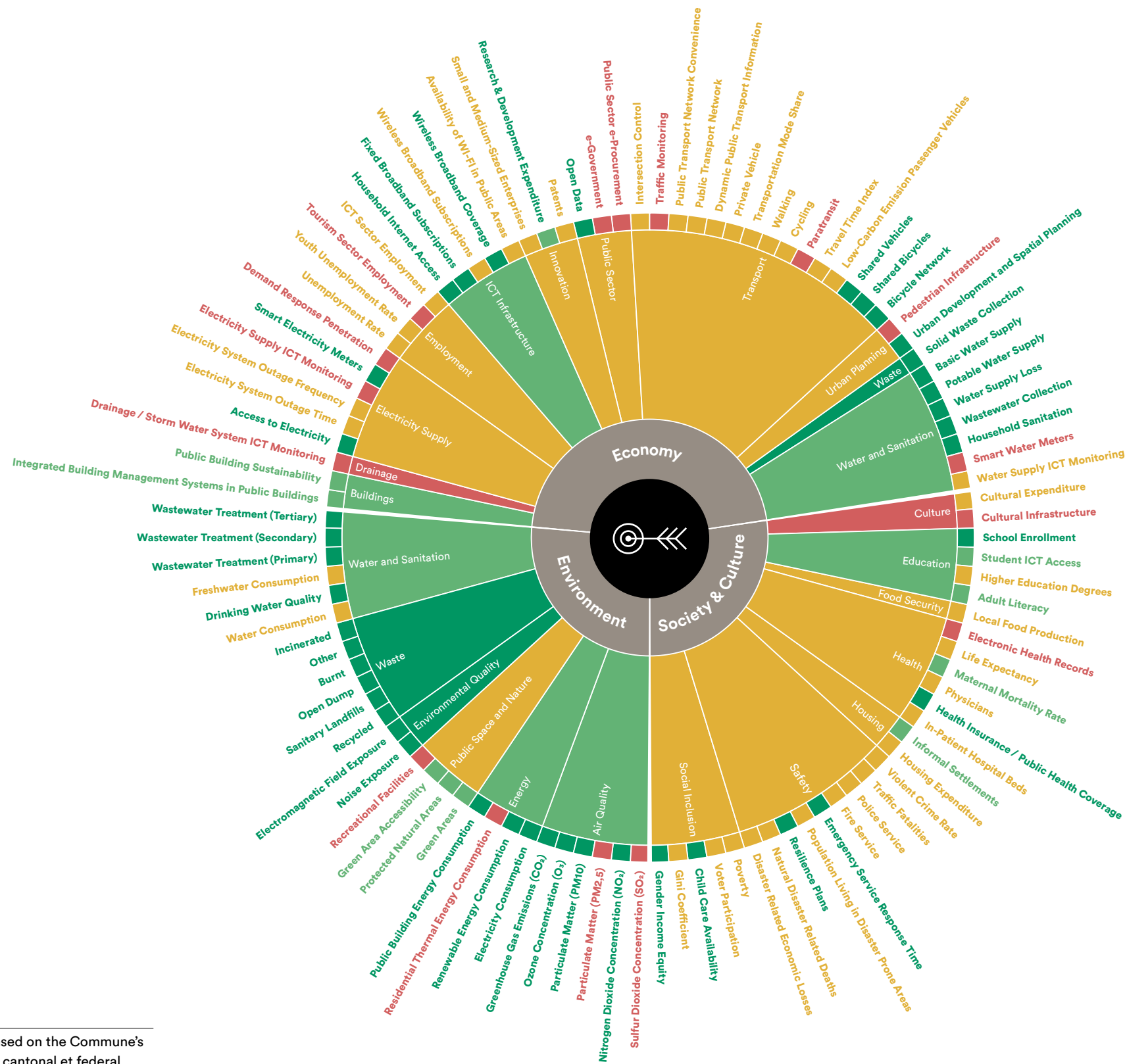
Based on this observation, the following proposals have been formulated:

- The confederation could issue a catalogue of the target values based on Swiss laws, statutes and regulations.
- The U4SSC initiative could issue a catalogue of target values, for example those of the United Nations SDG.

This would help to formulate a common representation among the cities, which would improve the chances of establishing a close working relationship.



Wagon wheel depicting the quality of the target values



- Good quality target value based on the Commune's legislative or the communal, cantonal et federal laws, programme statutes and regulations
- Medium-quality target value since it comes from international bodies (European Union, United Nations, etc.)
- Low-quality target value since it is estimated on the basis of statistics
- Target value not available

Question 3

Does the U4SSC initiative take proper account of local, regional and national characteristics?

The U4SSC initiative provides a set of indicators that addresses a broad diversity of cities, based on size, environmental factors, politics, culture and the various local, regional or national characteristics.

To illustrate this, we shall take the Wi-Fi public indicator, which allows us to measure the provision of universal and affordable internet access. Here, Pully has made Wi-Fi available in the most frequented areas of the city. And yet, for some time now, a reduction in the use of Wi-Fi networks has been observed and this has been confirmed by Swisscom at the national level. The probable causes are excellent 4G coverage and the generalization of 4G subscriptions, which means that users are less inclined to take advantage of Wi-Fi provision. Consequently, this indicator no longer seems to be particularly relevant in the Swiss context.

One proposal would be for each city to complete the set of U4SSC indicators with appropriate indicators at the national or local level, for example in conjunction with their legislative programme. In this way, the strategic management of Pully could hook up with the international system U4SSC, which it would complement by taking into account various local characteristics.

Question 4

Are the indicators sufficiently standardised?

In the U4SSC method, the rating of the indicators is one of two types:

- Target value achieved when at 0%.
For example, for the *Noise Exposure*.
In other words, the fewer people exposed to excessive noise, the better the indicator;
- Target value achieved when at 100 %.
- For example for *Adult Literacy*. In other words, the more people are literate the better the indicator.

To obtain a better understanding, one proposal would be to switch the way the indicators are measured so that their value corresponds to 100 % when the target value is achieved. In this way, if we take the example of the indicator on the *Noise Exposure*, the measures would be related to the number of people who are not being subjected to excessive noise (and not to the number of people who are being subjected to excessive noise).

Question 5

Does the city really have full control over all the indicators?

No. Although the majority of the indicators emanate from the city of Pully, a certain number are from the canton, including the *In-Patient Hospital Beds*, or from the confederation, as in the example of *Household Internet Access*.

Question 6

Are the proposed indicators appropriate and sufficient?

One of the strengths of the U4SSC initiative is that it submits a limited number of indicators. Nevertheless, we do believe that some additional indicators are required, for example:

- Given the implementation of the ICT, indicators on *Protection of Personal Data* and *Cybersecurity* could be added, e.g. in the *Safety* category.
- An indicator of the provision of sport could be proposed in the same way as the provision of culture.

Question 7

What insights can be drawn from an indicator that has already reached its target value?

When an indicator fails to reach its target value, this can help to trigger the implementation of a project, with an allocation of financial and human resources designed to improve the performance.

However, when an indicator achieves its target value or even exceeds it, it becomes an operational normality. In other words, resources must be allocated continuously, in order to keep it running and to maintain its performance. For example, Potable Water Supply reaches 100%. The potable water network will have to be maintained and renovated, a standby service will have to be provided and the network will have to be expanded as the population increases.

Consequently, it is important not to underestimate the costs of maintaining the performance of an indicator. In the words of the popular saying, ‘the hardest part is not reaching the summit, but remaining there’.

‘Since the beginning of the 2000s, the intention of the municipality has been to set a benchmark in order to monitor the activities of the commune. The U4SSC initiative provides an opportunity to obtain a set of indicators based on an international standard. Consequently, we did not have to develop the measurement criteria ourselves. Moreover, this initiative gives us the opportunity to work closely with other cities. It would be very much appreciated if the confederation or the canton were to propose standardised target values.’

Situation report

Strengths

The U4SSC initiative provides a global vision of the diversity of the city's activities. The limited number of indicators enables this method to be implemented in a few months, which is relatively fast. Another interesting element is the proclivity of the International Telecommunication Union to regard information technologies and communication tools as existing to serve the objectives of the United Nations Sustainable Development Goals and not as an end in itself. To do this, a prior dialogue involving some 16 United Nations agencies was needed to reach a consensus on the indicators to implement in order to achieve Objective 11 'Cities and sustainable communities'. This approach is probably an indication of the sustainability of the method. In addition, it gives rise to an international ITU-T standard, Y.4903/L.1603, which provides a common reference base for all the cities, and at the global level.

This method has significant potential for promoting the exchange of ideas among the cities to help them identify current best practices, and pool their intellectual and financial resources so helping to improve the services being provided to the citizens – and perhaps even to develop new ones.

The U4SSC initiative allows the Municipality of Pully to take a step back from its day-to-day activities by identifying the key trends and providing a guidance tool for its medium- and long-term actions. For example, the results of this study could be used in drawing up the content of the next legislative programme.¹

Finally, for Pully this report is also a tool for communicating with the population, as well as with other cities, at the cantonal, national and international levels, and within the administration itself.

Limits and potential for improvement

First and foremost, like a map, which is essentially an image of a piece of ground, we must remind ourselves that a set of indicators is actually a representation of reality rather than reality itself. In other words, for each indicator there is not only what is being measured but also the bias of how that is being measured. There are also elements that are not being measured, such as the Protection of Personal Data. It is, therefore, essential to cast a critical look at each of the indicators and to view them in the context of the city, region or country. Let us take, for example, the indicator Availability of Wi-Fi in Public Areas, which implies that the greater the provision of a public network, the higher the rating. In Switzerland, the excellent mobile phone coverage, with rapid internet connection (4G), is causing a significant drop in the use of public Wi-Fi.

In time, this observation might persuade Pully to stop providing this service. However, in such a case, the indicator *Availability of Wi-Fi in Public Areas* would find itself poorly evaluated even though, in reality, the citizens would have high-performance, mobile internet access via 4G.

Next, the global approach of the U4SSC initiative is ill-suited to the day-to-day management of the city. Moreover, it struggles to take into account the local, regional and national contexts. It is also important to note that the indicators do not measure the impact of the city beyond its territorial limits. For example, for the indicator *Electricity Consumption* – excellent in Pully – the electricity consumption of the national and international industries providing the goods consumed locally by the citizens of Pully would also need to be taken into account. In such a case, the figure obtained would certainly be lower.

Finally, the initiative does not propose any target values to be achieved, which makes any comparison between cities difficult, and limits their potential for working together and pooling their resources.

Follow-up

According to Pully, to follow up this initial assessment of the situation, the set of indicators could be updated periodically, for example every 5 years, around 2 years before the end of the legislative term. This would allow a preliminary assessment to be made by the legislature and would provide guidance for the next legislative programme.

Furthermore, to improve the guidance in the short term, and to take the local characteristics into account, certain indicators complementary to the U4SSC initiative could be integrated, in order to monitor the objectives of the legislative programme. During this possible periodic updating of the set of indicators, it would be useful to add a symbol illustrating the evolution of the various indicators.

Finally, Pully could, on the one hand, suggest to the Confederation and the ITU that a set of target values for cities on the national and international levels be compiled. On the other hand, that the various national initiatives (Monet, Cercles de qualité, etc.) be articulated with that of the U4SSC.

The publication of the present report aims to reinforce communication and exchange with the population, as well as with the other cities, the cantonal, national and international bodies, experts, and within the administration itself.

These reflections will facilitate the continual improvement in the way the indicators are measured, and will assist in choosing the target values. This should also lead to the optimisation of the city management, the ultimate aim being to provide its citizens with ever more practical, efficient, convivial and humane services and benefits.

‘We must also be aware of the limits of the “global vision” type of indicator, and it is important to place their use in its proper context. There is a risk that some people might interpret these elements as either black or white. For me, the main benefit of these indicators is to obtain an overall appreciation, in order to provide a trend.’

Gil Reichen
Mayor

The last word



Gil Reichen
Mayor

‘Although the link between the U4SSC initiative indicators and the day-to-day management of the city is not evident, I do think that this tool enables us to “lift our noses out of the handlebars” and reach for the sky. It provides some direction for medium- and long-term guidance with more general orientations, such as drafting the legislative programme, and enables us to identify the areas where we have to make a greater effort.’



Lydia Masmejan
City Councillor
responsible for Areas,
Buildings Agencies
and Sport

‘The use of indicators like those of the U4SSC is extremely useful because it provides a solid platform from which we can establish where we stand today, and thus helps us to take political actions that are firmly grounded in facts.’



Nicolas Leuba
City Councillor in charge
of the Directorate of
Urban Planning and the
Environment

The U4SSC initiative is a tool that fosters and encourages reflection and enables us to feed the future legislative programmes. Although this is a snapshot of what currently exists, regular updates will be needed if there is to be meaningful follow up. In addition, this tool promotes communal, cantonal and confederal complementarity and thus avoids the duplication of tasks’.



Jean-Marc Chevallaz
City Councillor in charge
of the Directorate of Youth,
Social Affairs and Public
Safety

‘Although comparison does not always bear the test of logic, we must conclude that the findings of the indicators from the U4SSC initiative do allow us to see where we are right now. Getting to know ourselves allows us not only to put the emphasis on what has to be improved but above all to highlight the strengths, so that we can improve the service for the population. Although we must take great care in interpreting the findings, the great merit of the U4SSC initiative is that it bridges the differences between our cities. Think globally and act locally!’



Marc Zolliker
City Councillor in charge of
the Directorate of Technical
Office and Industrial
Services

‘One source of great satisfaction for me is that this will be understood by a very wide audience. Over and above the actions taken by the municipality, it will enable the citizens to work out what they can do themselves. For example, the indicator “On Foot” may inspire them to walk more and so reduce the level of atmospheric pollution, and at the same time keep them healthy.’

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The study's Steering Committee comprised:

Marc Zolliker | Director of the DTSI
 Thierry Lassueur | Head of the DTSI
 Alexandre Bosshard | DTSI Coordinator and Project Leader
 Gérald Pittet | Head of the IT Service
 Res Witschi | Swisscom
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Neil Livingstone

Contact

Ville de Pully – Direction des travaux et services industriels (DTSI)
 Chemin de la Damataire 13, 1009 Pully, Switzerland
smart.pully.ch/en

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Index of abbreviations and acronyms

DAJF	General Administration Directorate of Finance and Cultural Affairs of the City of Pully
DDGS	Directorate, of Areas, Building Agencies and Sport of the City of Pully
DETEC	Federal Department of the Environment, Transport, Energy and Communication
DJAS	Directorate of Youth, Social Affairs and Public Safety of the City of Pully
DTSI	Directorate of Works and Industrial Services of the City of Pully
DUE	Directorate of Urban Planning and the Environment of the City of Pully
EICom	Federal Electricity Commission
EPFL	Swiss Federal Institute of Technology in Lausanne
ICT	Information communication technologies
ISO	International Standards Organisation
ITU	International Telecommunication Union, a specialised agency of the United Nations (UN)
LaMal	Federal Health Insurance Law
LApEL	Electricity Supply Law
LAT	Land Use Planning Law
LDAI	Federal Law on Food Trade and Certain Consumer Products
LEaux	Federal Water Protection Law
LEg	Federal Gender Equality Law
LEne	Energy Law
LEO	Compulsory Education Law
LPE	Federal Environmental Protection Law
LPEP	Law on the Protection of Water Against Pollution
LTC	Telecommunications Law
OApEI	Electricity Supply Statute
ODD	Objectifs du développement durable des Nations Unies
OFEV	Federal Office of the Environment
OFS	Federal Office of Statistics
OFSP	Federal Office of Public Health
OLED	Statute on Limiting and Eliminating Waste
OPair	Air Protection Statute
OPB	Noise Protection Statute
ORNI	Statute on the Protection Against Non-Ionising Radiation
PEL	East Lausanne Police
PDDE	Master Plan for the Distribution of potable water in Pully
SDG	United Nations Sustainable Development Goals
SECO	Economic Affairs Secretariat
STATENT	Structural Business Statistics
STEP	Waste water purification station
U4SSC	United 4 smart and sustainable cities

	Air quality	ENVIRONMENT
	Energy	
	Public space and nature	
	Environmental quality	
	Waste	
	Water et sanitation	
	Culture	SOCIETY & CULTURE
	Education	
	Food Security	
	Health	
	Housing	
	Safety	
	Social inclusion	ECONOMY
	Building	
	Drainage	
	Electricity supply	
	Employment	
	TIC Infrastructure	
	Innovation	
	Public sector	
	Transport	
	Urban planning	
	Waste	
	Water et sanitation	