CERN MOBILITY
Mobility Working Group

ACCU 118 Meeting – Mobility Report

Cristina Biino – INFN Torino

5 December 2017
Agenda

- CERN Master Plan 2030
- CERN Mobility mandate and context
- Mobility WG activity
- Surveys and completed studies
- CERN Mobility services summaries
- Potential upcoming actions
The GS Department is working on a long-term plan for the urban planning of the CERN sites. There is a need of a more coherent development and this concerns all aspects of urban planning: buildings, mobility, environment, energy.

Use of external consultants to help develop CERN mobility plan, action list with cost benefit analysis and provisional schedule.
Taking Action on Mobility

With increasing numbers of people at CERN, challenging commuting conditions across the border, inter-site trips and surging demand for parking, mobility is becoming a pressing concern.

**Working Group on Mobility** is looking at all aspects of mobility: safety, parking, green mobility, public transport, site access...

The activity is aligned with the objectives set out for Mobility in **CERN’s 2030 Master Plan** strategy: optimising the supply and management of CERN cars, CERN parking spaces, optimising traffic safety and fluidity within and around the CERN sites, promoting alternative modes of transport.

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**CERN mobility Working Group**

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<tr>
<th>ACCU</th>
<th>Cristina Biino</th>
<th>Soft Mob.</th>
<th>Jens Vigens</th>
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<tr>
<td>AP</td>
<td>Olivier Boettcher</td>
<td>TE</td>
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<td>BE</td>
<td>J-J Gras</td>
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<td>EN</td>
<td>Ingo Ruehl</td>
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<td>EP</td>
<td>Martin Gastal</td>
<td>SMB</td>
<td>Gilles Bollinger</td>
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<td>FHR Sector</td>
<td>Jerome Pierlot</td>
<td>SMB</td>
<td>Frédéric Magnin (Chairman)</td>
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<td>HSE</td>
<td>Carine Piviodi</td>
<td>SMB</td>
<td>Ana Lacárcel (Technical secretary)</td>
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<td>IT</td>
<td>Wayne Salter</td>
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✓ 11 meetings (oct.2016-dec.2017)
The Mobility WG is currently engaged in fact-finding and then prepare an operational action list.

- **Topics:** Parking policy, CERN Carpool, CERN car/bikes fleet, CERN access inter/intra sites, Soft mobility, Safety
- **A few actions already undertaken:** automation of CERN’s entrances, establishment of the CERN Mobility Centre, construction of a cycle path between Meyrin and Prevessin sites, road marking and safety improvements for cyclist and pedestrians, installation of bicycle repair stations ...
- **Several new ideas under study:**
  - increase of traffic flow at entrance E (west gate to French part of Meyrin site)
  - introduction of cycle paths
  - introduction of one-way streets on the CERN sites
  - introduction of CERN ride-sharing scheme
  - ...

The WG is OPEN to NEW IDEAS: anybody should contribute, just contact the representatives
Mobility activity – collecting data

Collection of reliable indicators:
- GPS trackers on cars and shuttles
- Data analysis of parking usage in main building areas
- Improve service usage & asset management data through improved informatics tools

| Improve the service for users | • Immediate availability status of cars through a portal  
|                             | • Better follow-up for car fleet managers / GS-IS  
|                             | • CERN access card is enough to open a car (if linked to a card reader) |
| Reduce costs                | • Optimise fleet usage  
|                             |  • Sharing  
|                             |  • Fleet size can be adjusted from accurate data  
|                             |  • Operation costs  
|                             |  • No usage of CERN resources outside the pre-defined rules |
| CERN rules compliance       | • Adequacy between service usage and management objectives is possible  
|                             | • Enforce OC4 rules. Ex: who is using the car when  
|                             | • Track unadapted usage of CERN resources  
|                             |  • Private usage  
|                             |  • Outside boundaries  
|                             |  • Monitor petrol consumption (litters vs kms done) |
| Security/Safety             | • In case of emergency intervention, the car is already localised  
|                             | • Help recover a stolen car |
Survey on home-work trips (2014)

Plan de mobilité des Organisations Internationales : Le CERN

Contexte

Objectifs
- Anticiper les projets d’infrastructures dans le quartier
- Garantir une bonne accessibilité des sites à long terme
- Connaître les déplacements des collaborateurs et leurs attentes
- Favoriser toutes les alternatives à la voiture individuelle

Participation
Nombre de collaborateurs : Total du site : 13938 Géolocalisés : 7957 Répondants à l’enquête : 2368 (42% des collaborateurs CERN)

Collaborateurs
Déplacements des collaborateurs

<table>
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<tr>
<th>Voiture individuelle</th>
<th>Vélo</th>
<th>Bus, tram</th>
<th>Covoiturage</th>
<th>Moto, scooter</th>
<th>Marche</th>
<th>Train</th>
<th>Vélo électrique</th>
<th>Autres</th>
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<tr>
<td>59%</td>
<td>15%</td>
<td>13%</td>
<td>6%</td>
<td>3%</td>
<td>2%</td>
<td>2%</td>
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Satisfaction des trajets domicile-travail

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<thead>
<tr>
<th>Vélo, VAE</th>
<th>% 5 et 4</th>
<th>% 2 et 1</th>
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<tr>
<td>68%</td>
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<table>
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<tr>
<th>Voiture</th>
<th>% 5 et 4</th>
<th>% 2 et 1</th>
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<tr>
<td>48%</td>
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<table>
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<tr>
<th>Marche</th>
<th>% 5 et 4</th>
<th>% 2 et 1</th>
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<tr>
<td>40%</td>
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Collec<ve transport: tram from Cornavin extended to reach CERN in 2011

Transport publics en minutes*

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<tr>
<th>Marche</th>
<th>Vélo électrique</th>
<th>Vélo</th>
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<tr>
<td>16%</td>
<td>17%</td>
<td>32%</td>
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Mobilité douce en 15 minutes*

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<tr>
<th>10'</th>
<th>20'</th>
<th>30'</th>
<th>40'</th>
<th>50'</th>
<th>60'</th>
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<tr>
<td>16%</td>
<td>17%</td>
<td>4%</td>
<td>3%</td>
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...better to repeat the survey
Despite the partial saturation of the road network at peak times, the car is currently the best option for large-scale accessibility.

- Much of the French side is reachable in ~10-15 minutes and Geneva city center is ~20 minutes away. The limit of ~40 minutes includes the city of Annemasse.
  
  NB This is a theoretical accessibility that does not take into account the possible congestion of traffic. Incentives could be proposed to develop carpooling for home-work commuting.

- Public transport accessibility at the Meyrin site has improved significantly since the tram was commissioned in April 2011, with a 25’ journey from Cornavin station. It takes about 20’ and a change to come from Cointrin Airport.

- From St-Genis-Pouilly, the journey time is 10 minutes with the Y bus (Ferney-Mairie - Val-Thoiry), but the frequency (two buses at rush hour) does not allow to speak of an attractive service.

- Finally, the Prévessin site is not served by public transport.

- In addition, there are many inter-site business trips (Meyrin, Prévessin but also peripheral sites throughout the accelerators) throughout the day requiring the use of a motorized vehicle (CERN vehicle but also vehicle private). These business trips often involve the transport of equipment, tools or equipment.

- All this has an impact on global behaviours.
The Meyrin site enjoys excellent accessibility by bike. However, the safety and comfort aspects that are currently lacking will have to be carefully worked to encourage cycling.

In France, apart from the bike path along the Meyrin site from the roundabout "Porte de France", and the new path connecting Meyrin site and Prevessembie site, the facilities devoted to soft mobility to access the sites are almost non-existent.

The use of soft modes of travel, however, remains dependent on weather conditions, which are unfavorable several months a year in the region.
Current Mobility Services at CERN

- Management of CERN shuttle service (10 shuttles, ~132,000 people transported in 2015)
- Management of bus rentals (>500 transactions in 2015)
- Management of CERN car pool (~800 cars, fleet renewed every 3-4 years)
- Management of CERN bikes (~520, ~2000 rentals/year)
- Management of CERN car sharing (~35 cars)
- Management of CERN short term rental pool (~70 cars)
- Management of short term rentals with SIXT (~600/yr)
- Management of fuel delivery and fuel stations (2)
- Management of Bikes & Cars repairs & Maintenance
Bike rental service at CERN

Offering...

Fleet of ~520 bikes

Free rental
(except during period Jun 1st – Sep 30th → 1CHF/day )
(Students free rental the whole year)
-Student peak in June/July
-User peak in September/October

Free Helmet and Safety Vest

Storage capacity with new bikes racks (Globe parking) & containers (Prevespin site)

Repair and maintenance

Considering increasing # of bike sharing stations replacing CERN bike fleet...

20 bikes, 450 members

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e-learning module "Road Traffic: Bike Riding": The "Road Traffic: Bike Riding" e-learning module offered by the Safety Training Section of the HSE Unit is designed for anyone who uses a bike on the CERN site. It is therefore necessary to follow this course before renting a bike (https://sir.cern.ch/). A computer is available in the Car pool (building 124-R-001) for this purpose.
Green mobility equipment at CERN

Six bike repair stations as well as various shower points have been installed at strategic locations on the Meyrin and Prévessin sites

On the initiative of the CERN Mobility Services team (SMB department), six bike repair stations have been acquired and were installed across the Meyrin and Prévessin sites on Wednesday, 25 October.

On the Meyrin site, you can find the repair stations at entrances A, B and C. On the Prévessin site, they are located at the main entrance, the entrance on Route du Maroc, and the entrance on Chemin du Moulin des Ponts. The stations provide basic repair tools and a manual pump that can be used for daily maintenance of both personal and CERN bikes. Please help us to keep the repair stations in shape by using them with care! If you have any questions, contact Gilles Bollinger.

The SMB department has also made an effort to install shower points at strategic locations. You can find the list of showers available for use here.

The aim of these initiatives is to encourage the use of sustainable transport by supporting those who commute by bike in and around CERN.

*CERN Mobility Services*
Mobility Center – Globe Parking

Opening hours: 08h00-12h00 & 13h00-17h00 (from Mondays to Fridays)

- Strategically located (close to tram, and CERN reception)
- Single point of contact (SPOC) for:
  - Collecting and returning CERN cars
  - Collecting and returning CERN bicycles
  - Collecting and returning SIXT rental cars
  - Formalities for Mobility and Bike Sharing activities
- Activity started 29th of February

Collection and return of cars possible outside working hours using safety deposit box system for SIXT and key management system for collection and return of CERN cars (with CERN access card).

Car sharing:
2 parking places with Mobility cars available at Globe P&R

Under discussion to add 2 Globe parking places (P&R) for “Catchacar” car sharing.
On average per car:
- <3000km/year
- <800trip/year
- Average trip distance < 4km
- #Trips/day < 4
- @ 30km/h, 220 days and 8hrs/day → Utilisation = 5%

**Objectives**
- Define mobility profile of the users – Demand side
- Analyse car usage – Supply side

**Steps**
- Structure data for GIS treatment
- Definition of key indicators (trip distance/duration/frequency, preferred trips...)
- Statistical and cartographic analysis
- Presentation of the car fleet usage
- Optimisation proposals

Car rental
- Long term 695 cars – relatively low usage
- Short term 72 cars – higher usage

Car sharing
- 35 cars – free of charge

Improve service usage & asset management data through improved informatics tools
CERN Shuttle service

Offering public transport service to facilitate CERN community mobility between all CERN sites:

- 2 regular circuits (5 days per week) (~53,000/year)
- 1 airport shuttle service (5 days per week) (~18,000/year)
- 1 circuit dedicated to LHC/SPS shifts (7 days/week)
- Transport of visitors for the visit service (~19,000/year) and VIP visitors (~3,000/year).

In 2011 ~100,000 person have been transported by CERN shuttle service

- External contract for shuttles starting 1 February 2018 (same cost)
- Request: shelters for people waiting and more visible signs
- Request: better correlation between TPG time schedule and shuttle service → studied but considered too complicated

Itch hiking program
Some Survey outcomes

- Pay for parking very unpopular
- Consensus on the need for specific infrastructure for soft mobility
- Consensus on increasing CERN shuttle service
- DH’s less keen on “exotic” measures (eg. PT subsidy, CERN car for home-work trip)
- Significant misalignment between surveyed groups on importance of:
  - Public transport
  - Mobility safety
Analysis of Entrance E traffic flow

Survey E Rond point Porte de France, on morning of 6-10 Feb. 2017, ~1500 car/day. Long queue in the direction of Thoiry and on the roundabout related to cars queing to entrance E.

Potential improvement requiring modification at gate E: double lanes at the controls at E Gate so that flux from Thoiry will enter by the usual access line, while flux from the roundabout will enter from the gate E exit way. Requires modification for the demi-tour of refused cars and for bikes and pedestrians entrance.
• Double lanes at site entrance for increased traffic flow
• Dedicated cyclist and pedestrian turnstile gate for improved safety
• Requires to take into account also the demi-tour of refused cars
I have been receiving complaints about the circulation rules for rental vehicles at CERN.

“Use of vehicles must comply with the authorisation issued and must take due account of the Organization’s interests. Use of vehicles for private purposes (e.g. for transporting family members or for shopping) is prohibited in all circumstances, including in the context of standby service. Any use of a vehicle in the work place-home must be authorised”


Many users come to CERN by train or airplane. They are renting through their institutions a vehicle belonging to CERN or a Sixth vehicle rented by CERN. With a mission order they are allowed to travel from the residency in the area and CERN. It is not possible to use the car to go to the doctor, pharmacy, food market, restaurant or to have dinner at the house of a colleague, not even within the circulation perimeter. These rules apply for all kind of cars rented at CERN (with/without CERN sticker, Sixth's rental through CERN, mobility cars).
### Operation Circular n. 4 and CERN users

For the moment I received different answers:
- the OC n4 is clear, and it is very hard to change a OC
- there are problems with the insurance
- this is against agreements between CERN and France/Switzerland about competition with rental cars
- these cars can get the fuel at CERN internal fuel stations

Some suggestions:
- Rent one of the 2 mobility cars present at the Globe parking
- Rent externally a Sixth car (at the airport) at the special rate for CERN users (but more expensive than the CERN rental).

Is it feasible? I am told that this can create other difficulties

I will continue to discuss this but it seems that the problem cannot be solved by the Mobility wg.
B107 circulation

Soft Mobility Analysis

option 1

option 2

option 3
Crossing entrance at Prevessin site

- New configuration of the traffic lights crossing – CERN Traffic capacity designed for the next 30 years
- Bike crossing on surface with dedicated light phase
- Protocoled between Ain Department and CERN in progress to finalise (CERN contribution – land session)
- Call for tender in preparation by the CD01-DDR
- Work execution planned between summer 2016 and beginning 2017
Roundabout R2

Soft Mobility Analysis
Modification of Meyrin West traffic plan

a proposal
Entrance B

Soft Mobility Analysis

Route PAULI