Bordeaux

aims to achieve mobility that is smooth running, intelligent and deliberately chosen

ITS World Congress
Bordeaux, France
5 to 9 October
2015

TOWARDS INTELLIGENT MOBILITY
Better use of space

Organised by Co-organised by Hosted by On behalf of Supported by

BORDEAUX MÉTROPOLE

751,415
inhabitants

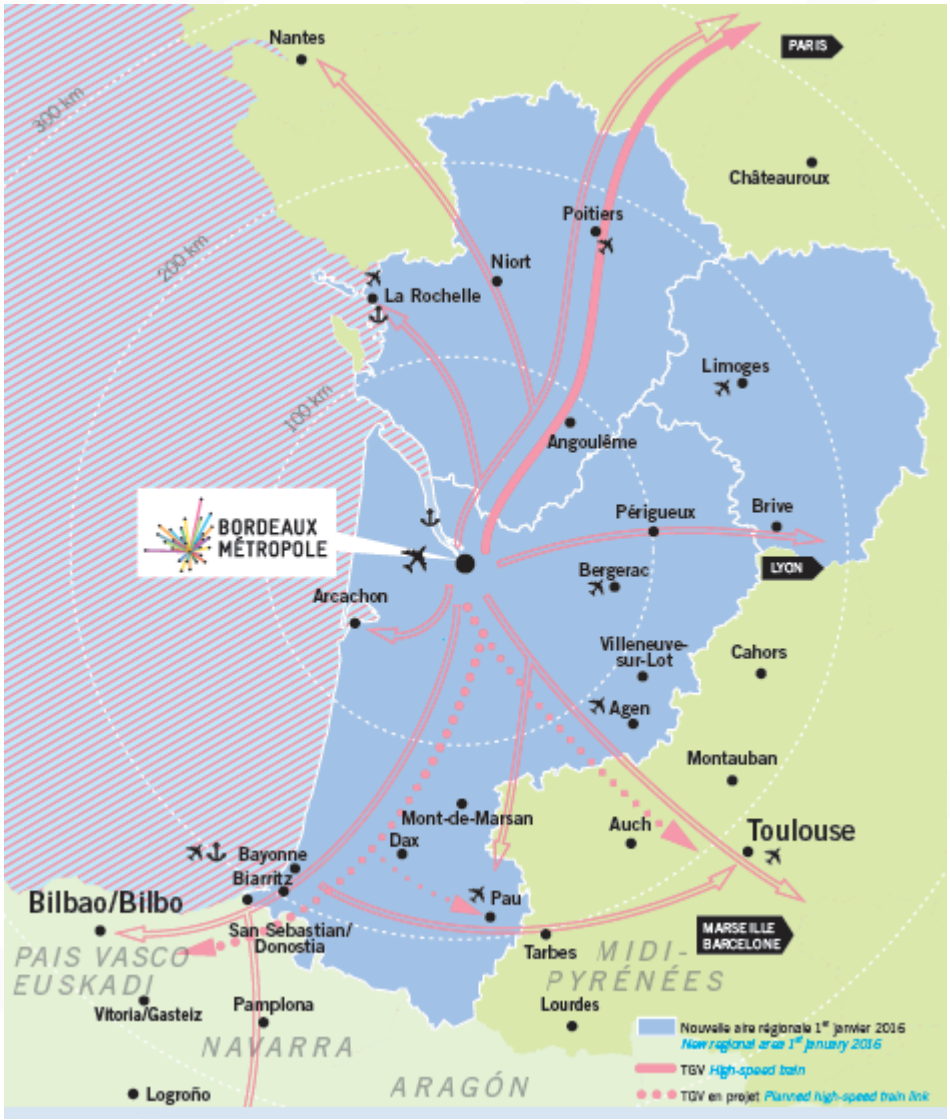
58,000
hectares

A Reference Metropolis in the EU

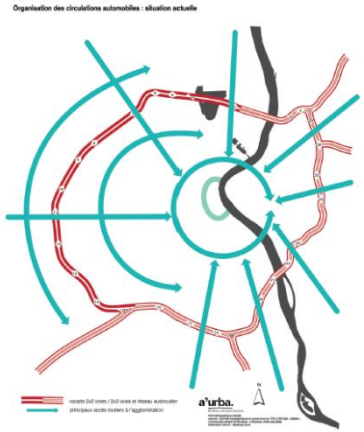
6th largest French urban area (1.1 M inhabitants)

28 municipalities

Bordeaux, a connected metropolis



- ☞ Completion of the LGV High Speed Rail Line in 2017
- ☞ Bordeaux Merignac International airport
- ☞ An international port
- ☞ 4 national and international motorways and a ring road
- ☞ two new bridges over the Garonne river



GERTRUDE, a centralised traffic regulation system

☞ Creation of GERTRUDE (1973) : Real Time Electronic Management of Traffic Lights against Jams :

- ✓ a global solution in order to manage traffic and travel flows, deployed at first along the Garonne river and on main roads crossing the river,
- ✓ based on real-time processing of recovered sensor information and orders down to the junction lights,
- ✓ 610 totally adaptive intersections linked with the traffic centre out of a total of 910 intersections (9000 sensors).

☞ Evolution towards GERTRUDE 2.0 : Electronic Management of Real-Time Regulation for Urban Planning, Transport and the Environment

= to take into account, for example, the priority given to separate-lane public transport, with strategies that adapt to actual conditions.

☞ In the 1990s the French State completed the local system with the ALIENOR system for traffic management and safety on the ring road.

Bus priority

☞ Technology based on hyper frequency transmission with receivers on traffic lights linked with GERTRUDE :

- ✓Bus Line 3, 15 km with 10,000 travellers per day
- ✓Redesigned 1.7 km of road with bus lane
- ✓45 cross roads equipped out of 49

☞ Consequences after one year experimentation

- ✓ Travel time reduced from 1 hour to 50 minutes
- ✓ 10% more users since 2010
- ✓ Bus frequency upgraded from 12 minutes to 10
- ✓ No measurable impact on energy consumption

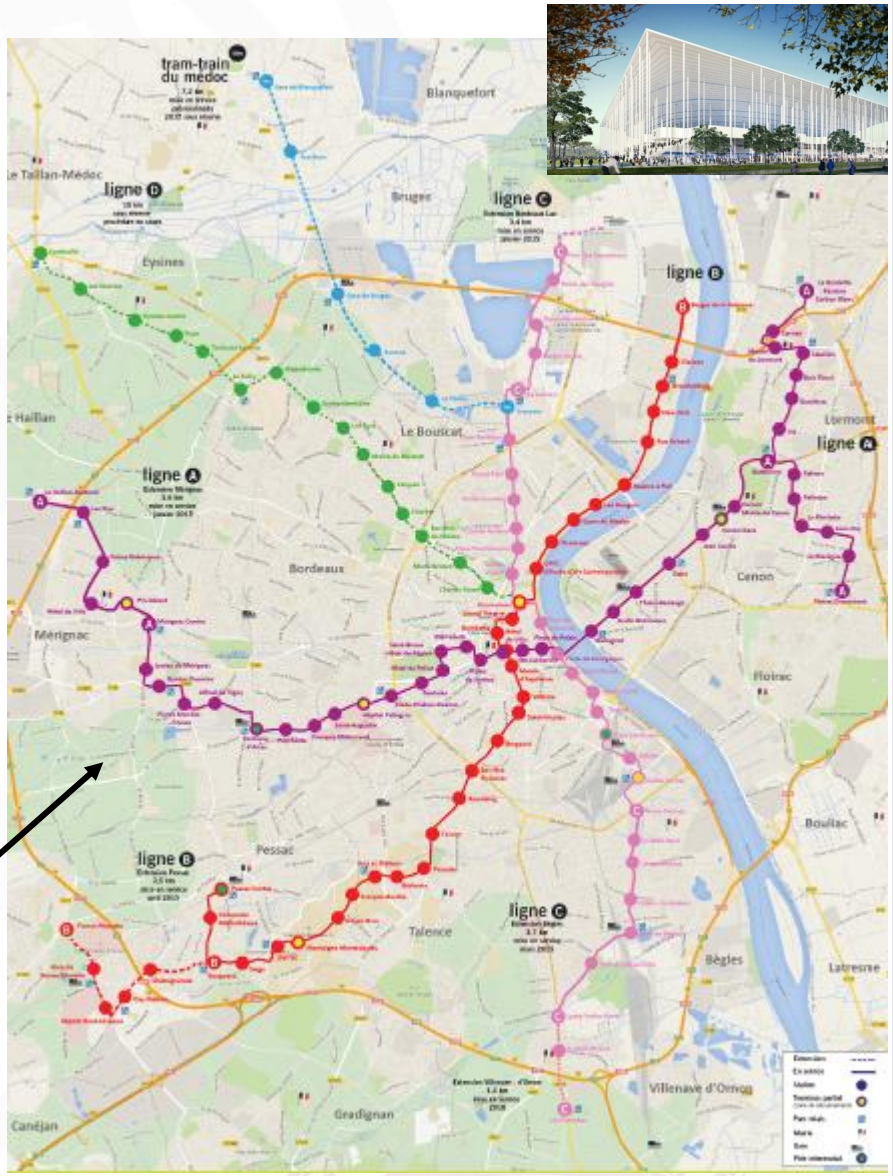
☞ Decision to extend to 2 other lines

A modern public transport network

- 3 tramway lines (60 km)
  + 79 bus lines

  - ✓ Number of public transport users increased by 30% over the last five years (& 126 M in 2014)

21 décembre 2004 : le tramway bordelais souffle sa première bougie, cours de l'Intendance à Bordeaux.L'INTENDANC © *Photo Theillet Laurent*



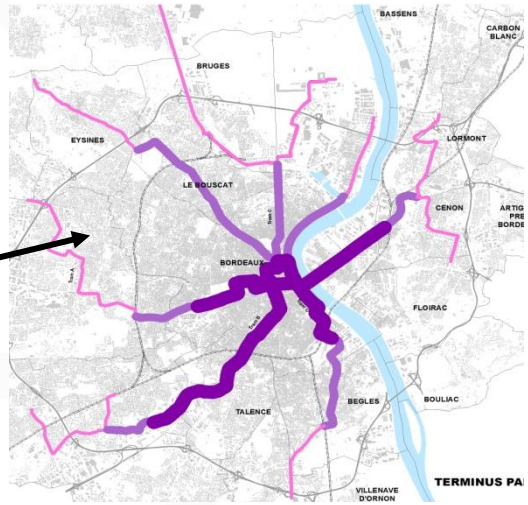
- objective :

  - ✓ Urban multimodal transport network: 5 tramway lines (nearby 80 km) by 2020.

Mobility made in Bordeaux

☞ designed around several tramway lines and restructured bus lines

☞ with a new operating mode for the tram network (intermediate terminus): Increased rush hour frequency every 3’30



☞ complemented by several parts of the chain of mobility: Vcub (bicycle), Batcub (river shuttle), Bluecub (electric car sharing)

☞ car-sharing (Koolicar and Citiz)

☞ car-pooling

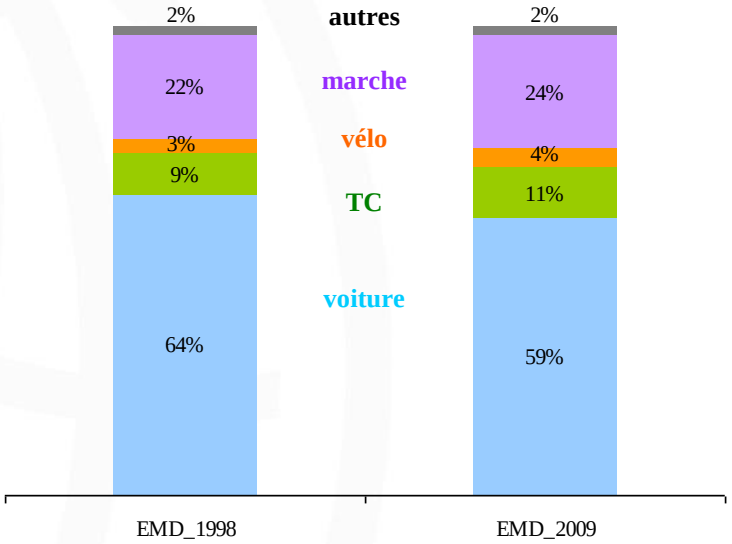
Lessons to be learnt from the latest household/transport survey

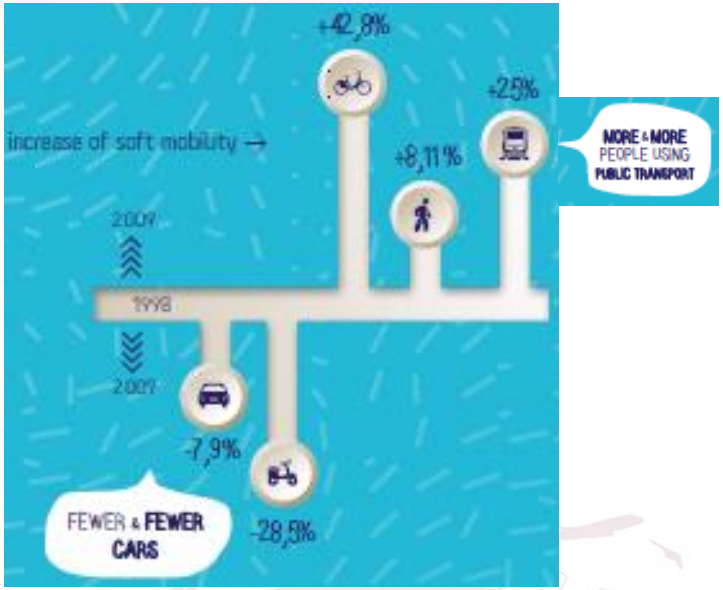
☞ upper limit of 4 journeys/day/person (with a total of 2.5 million journeys)

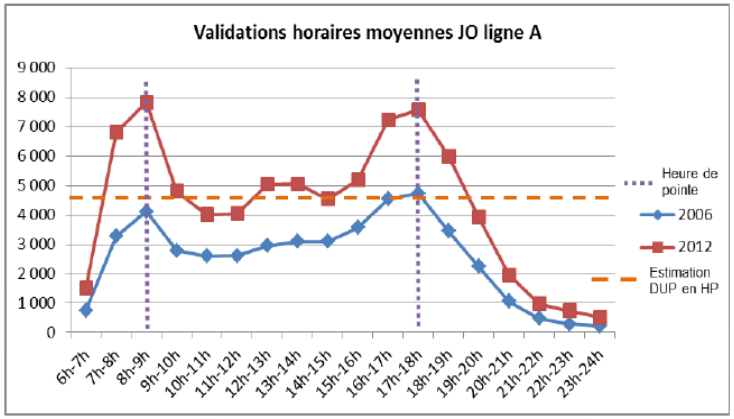
☞ alternative means of transport are increasing within the city

☞ the use of personal cars is still preferred for 59% of daily journeys

☞ the “tramway effect” is noticeable in the city centre







TOWARDS INTELLIGENT MOBILITY
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Characterisation of traffic

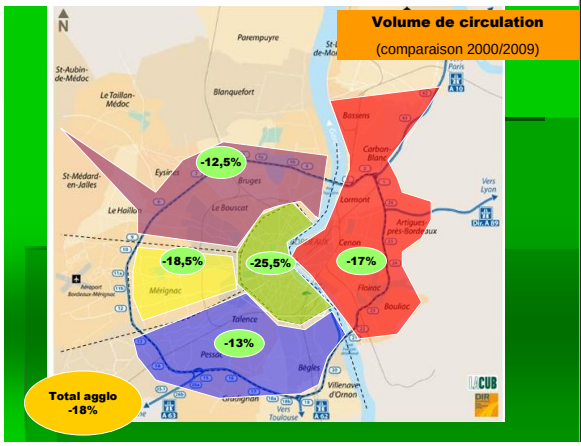
☞ significant shift in car traffic within the city ring-road over the last ten years (-30 % inner city)

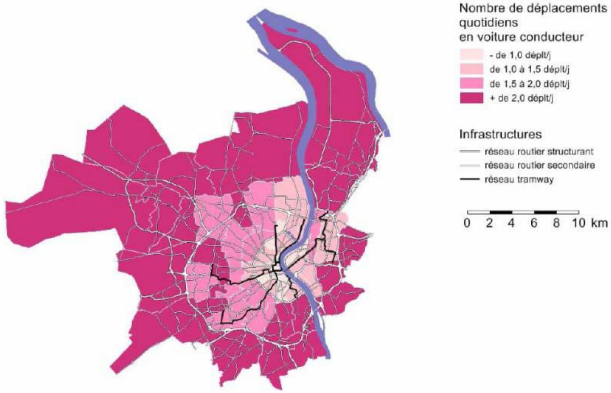
☞ the distribution of inner-city daily travel: car (14%), public transport (22%), walking (54%), cycling (8%)

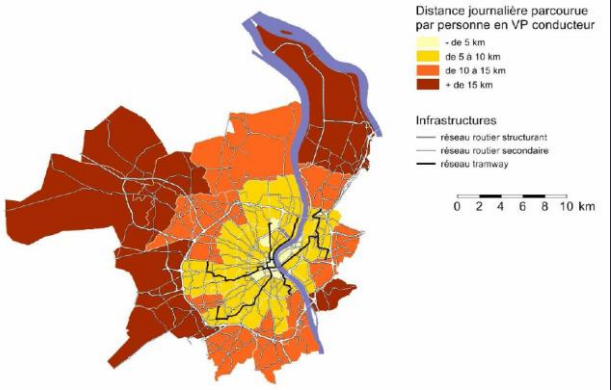
☞ Bordeaux Metropolis is still facing congestion problems:

- ✓as a comparison, the volume of rush-hour traffic 30 years ago was the same as it is at midday now.
- ✓outside of the city centre and the ring road, a majority of inhabitants still rely on their cars.

☞ 66% of journeys under 2km are still made by personal car.





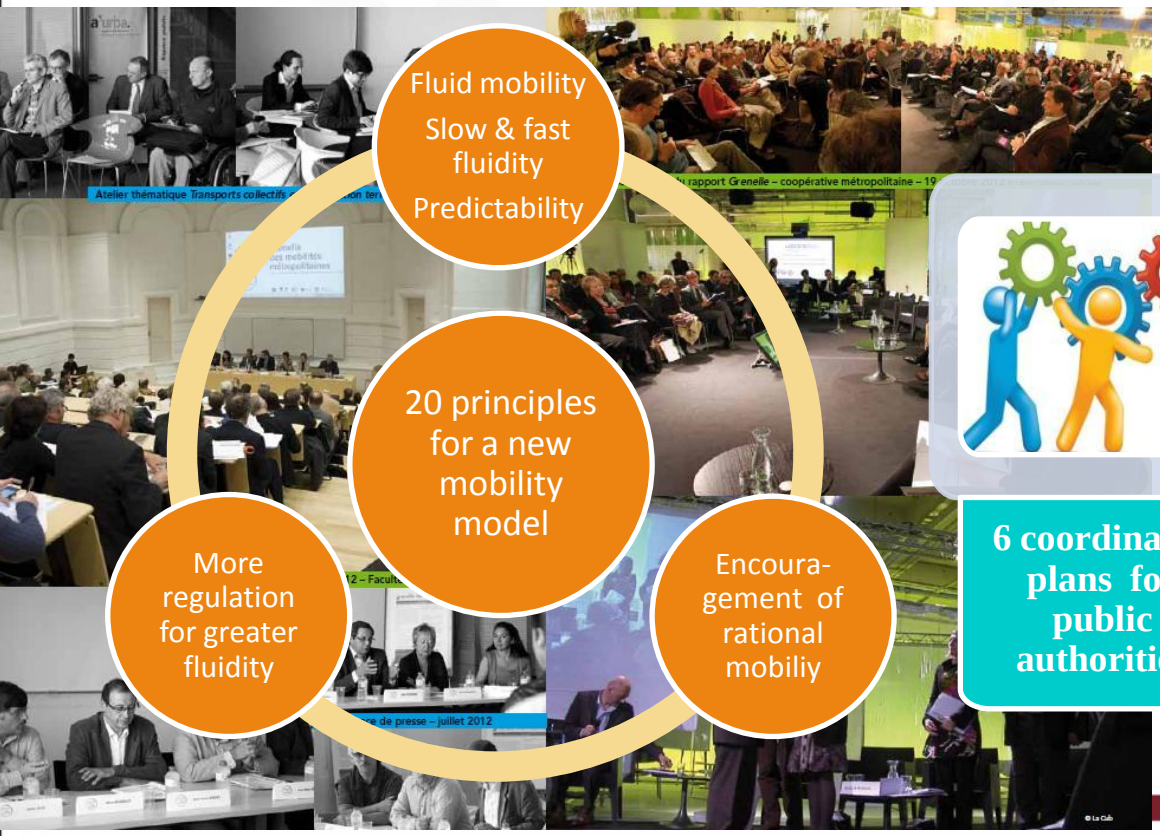


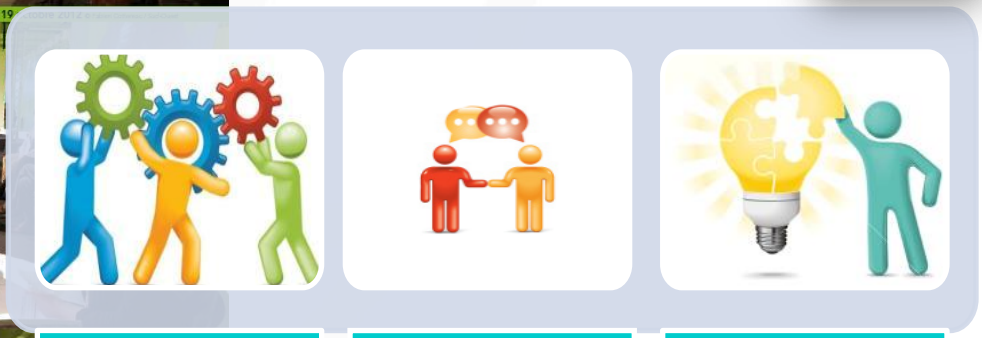
Bordeaux “partnership mobility charter”

- The need of a new mobility model for the next 20 years

- a mobility forum: a collaborative and participatory approach
- a partnership charter: 20 principles & a 17-action programme

- mobility part of local town plan will take into account some of these proposals





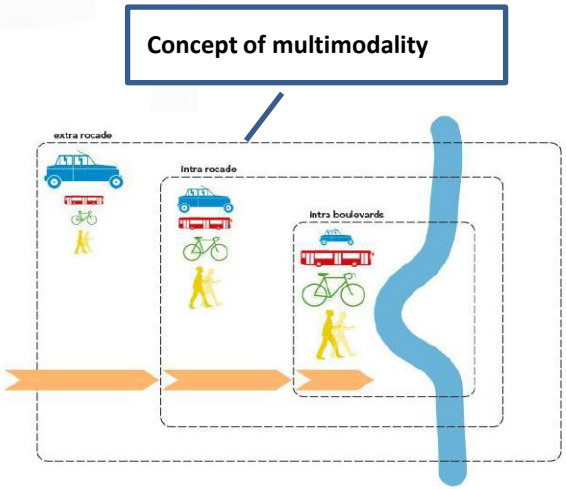
6 coordinated plans for public authorities

6 strategic partnership programs

5 innovations for change

From a transport policy to a mobility policy

- AXIS 1: Make public transport more efficient
- AXIS 2: Optimize road infrastructure and share the public space
- AXIS 3: Manage parking to change practices in planning and mobility
- AXIS 4: Encourage other modes
- AXIS 5: Develop a planning document to preserve the future



Toward a smooth-running, intelligent, sustainable and deliberately chosen mobility

☞ The foundations of a new mobility model

✓ Concerning the transport network, to maximise existing infrastructure, smoother flows with more real time information, predictable travel times, and a wider range of services for customised mobility.

✓ To continue to restrict the use of cars in the city centre and offer a broader range of solutions for users to be able to choose and customise their own mobility.

✓ The aim is to improve the quality of life of inhabitants, but also the workings of economic activity, and hence the attractiveness of our territory.

☞ To develop both technological and user-based innovation

✓ In order to rise to these challenges, we need to assure complementarity between investments in the transport infrastructure and the development of technological and user-based innovations serving intelligent mobility.

ITS world congress, “35 demonstrations”

ITS Challenge at stake

Autonomous & connected vehicle demos

- Autonomous electric vehicle (without any driver)
- Automated parking demos
- Automated electric vehicles in traffic on open roads

Digital revolution

Toward a more intelligent, fluid and selected mobility :

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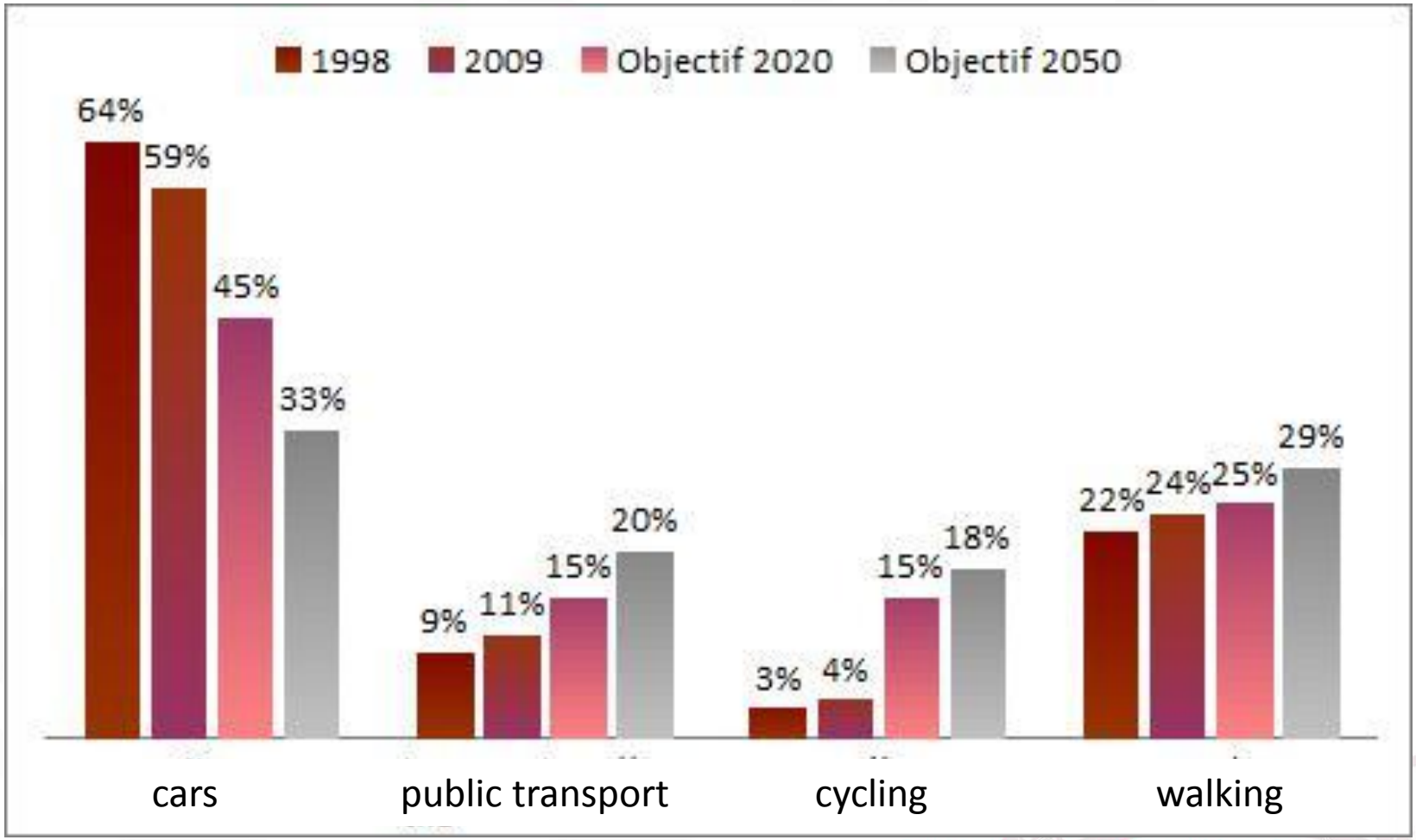
Challenge at stake

Climate Plan (approved in February 2011)**:**

"Reduce the modal portion of the car in favour of alternative modes "

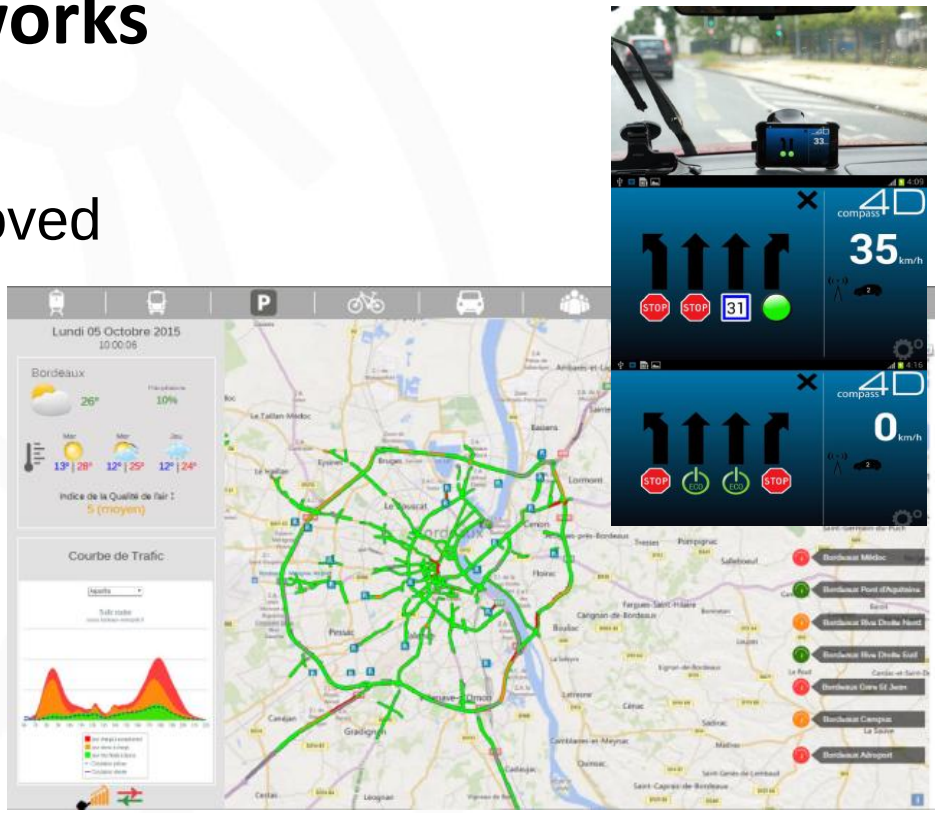


optimisation of existing networks

Innovation & developments

☞ a multimodal dashboard for improved coordination

- ✓ Intended at first for operators
- ✓ Supplemented by Floating Car Data (experimentation)



☞ Compass4D: connected Vehicles

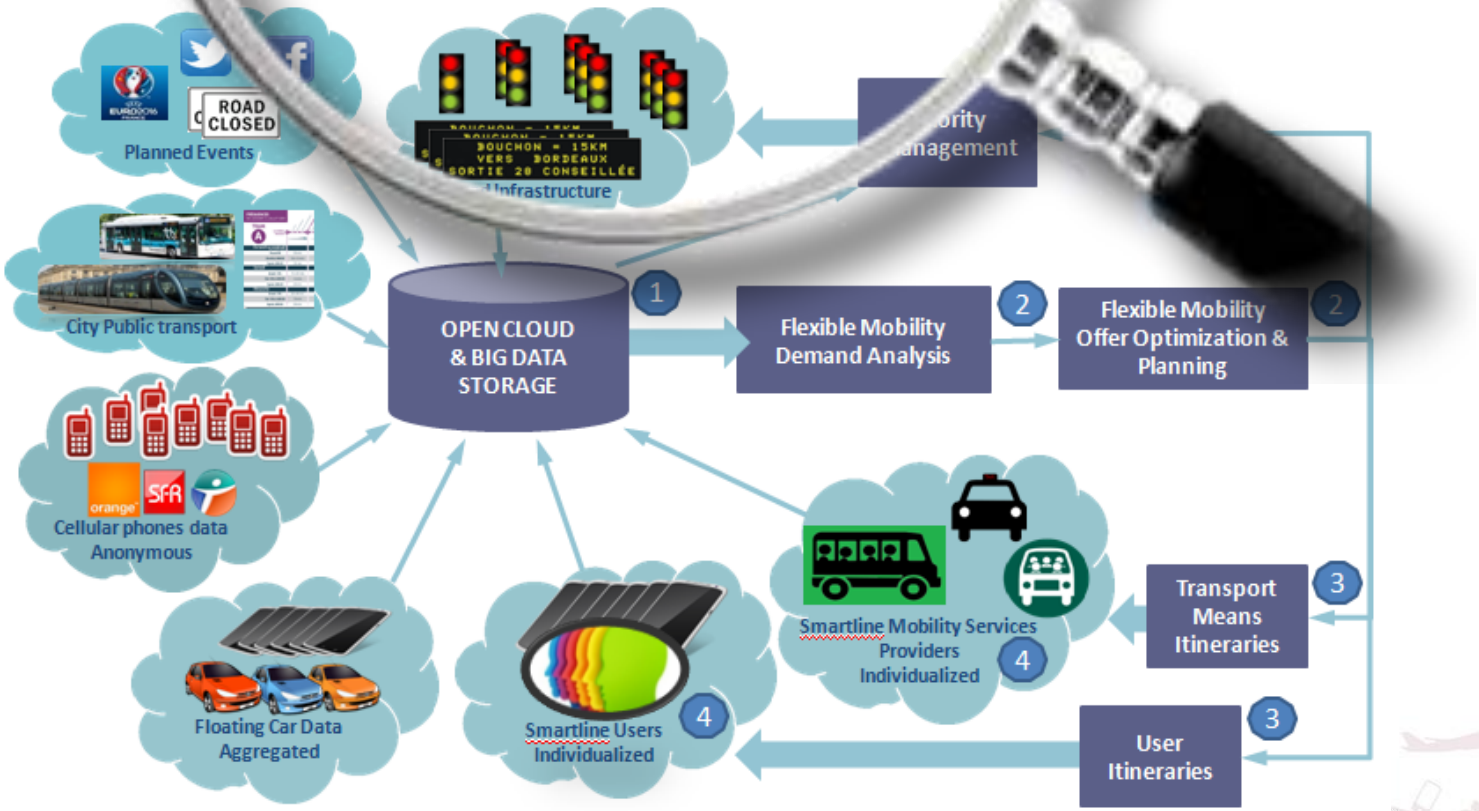
☞ Possible new ring-road uses:

- ✓ Making the ring road 2x3-lanes constitutes an innovation opportunity
- ✓ Study by the State to experiment a high-level bus service on the hard shoulder
- ✓ Alienor 2 / traffic regulation devices and to promote public transport services, car-sharing and modal shift (P+R)

Estimated impact on CO2 emissions

Smartline

Solution for **M**etropolitan **A**reas **R**ising commuting **T**raffic,
Leveraging **I**nhabitants **N**etworking and **E**cological aspirations



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Thank you for your attention

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