Transport and mobility strategy for the Conurbation of Bethlehem

Bethlehem Mobility 2030

الخطة المرورية لبيت لحم 2030

Key Figures

community development group
المجموعة الاستشارية للتنمية والاعمار
ARCHITECTS · ENGINEERS & PROJECT MANAGERS

VILLE DE PARIS

AFD
AGENCE FRANÇAISE DE DÉVELOPPEMENT

move mobility
smart moving cities

A laboratory for sustainable mobility

The Transport and Mobility Strategy for the conurbation of Bethlehem is an integral mobility study for the next 10 years. It is shortly called "**Bethlehem Mobility 2030**" and is the first of its kind in the area.

It sets the scene for changes and interventions that are needed in order to make Bethlehem Conurbation an accessible, liveable and attractive place for all its inhabitants, commuters and visitors from all over the world. Following the approval of the strategy, the Mobility Planning and Implementation is not finished: it is an ongoing and dynamic process with all and for all!

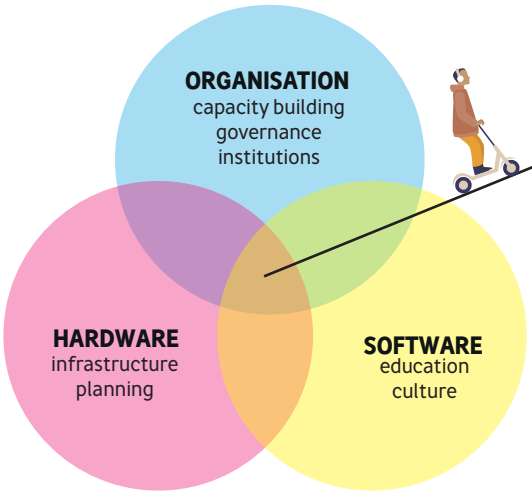
For the first time, the study brought all stakeholders together to develop a common vision for mobility in 2030. This collective process has been complex and challenging. It was all about the type of city people wanted for their children and their families. Mobility is a powerful tool to build strong and resilient communities. It is essential to provide opportunities to meet people, to connect to neighbors, to see friends and family.

Bethlehem is facing more and more traffic leading to more negative externalities: congestion, accidents, pollution and negative impact on tourism and the economy. **Today, priority is given to car traffic while the human scale of the city is ignored.**

In 2030, we envision that Bethlehem Conurbation benefits from an integrated mobility system that is people centered and environmentally friendly, contributing to a vibrant economy and to a connected, accessible and liveable urban environment. **This vision reflects a transport system that is socially, environmentally and economically sustainable and contributes to activate the economic and touristic potential of the territory.**

Bethlehem Mobility 2030 is translated in a list of 99 measures, mixing hardware, software and organization activities. Out of this list, **39 projects** have been already elaborated at a pre-feasibility stage.

An integrated strategy



Bethlehem Mobility 2030

Today, cars everywhere!

An extensive data collection and diagnosis were needed to set a good understanding of people's travel behaviors, the bottlenecks and possible solutions. 3 main categories of way of moving - and their own problems are clear.

Traffic jams
The vehicular traffic is the major mode of transport in Bethlehem conurbation. The increasing population goes along with a rising car ownership rate, mainly based on an old fleet. Traffic congestion is growing and the road network is weak: no proper marking and signaling, poor quality of pavement and faulty design of roundabouts and intersections. There is no road categorization in Bethlehem and illegal and disorganized parking are causing delays and reduced travel speeds. There is also a lack of parking areas for touristic buses.

A weak public transport system
Public transportation remains semi-informal with very poor or inexistent facilities and insufficient coverage. The system is not reliable due to lack of schedules and stops. Beyond the major constraints caused by the Israeli control and expansion, the Palestinian transportation sector suffers from fragmented responsibilities, insufficient budget and lack of enforcement. The private sector is not present.

A strong potential for walking
Pedestrian traffic remains very low (9% of the modal split) due to poor walking infrastructure : improper sidewalks or occupied by cars and goods, no markings, no furniture, no greenery, no shadow, etc.



Mobility figures in Bethlehem in 2020:

only
9% of citizens
travel by walking

89% of daily trips
are vehicle trips

49% in a private vehicle
+ 30% in shared cabs
+ 5% in private taxis
+ 5% in mini-buses

but for those vehicle trips:
75% are shorter than 2km
35% shorter than 1km

Target scenario: create a big shift towards walking and public transport

3 alternative scenarios have been developpe for Bethlhem Mobility 2030. The prefered scenariois to provide to citizens and visitors more attractive alternatives to private cars. The guiding principles of the strategy are:

1. **Improvement and categorization of the road network:** creation of a ring road wherever possible for higher speed traffic, 30 km/h zones in residential areas, car free zones and revitalization of city centres, creation of integrated mobility corridors, improvement of intersections and roundabouts, road rehabilitation.

2. **Expansion and optimization of the public transport network:** new routes and facilities, more efficiency and reliability, scholar buses, PRM accessibility, electrical and hybrid vehicles.

3. **Parking management:** paid parking, stricter application of regulations, freight strategy, Park & Ride at the main entrances, reducing external traffic and progressively turning into multimodal hubs.

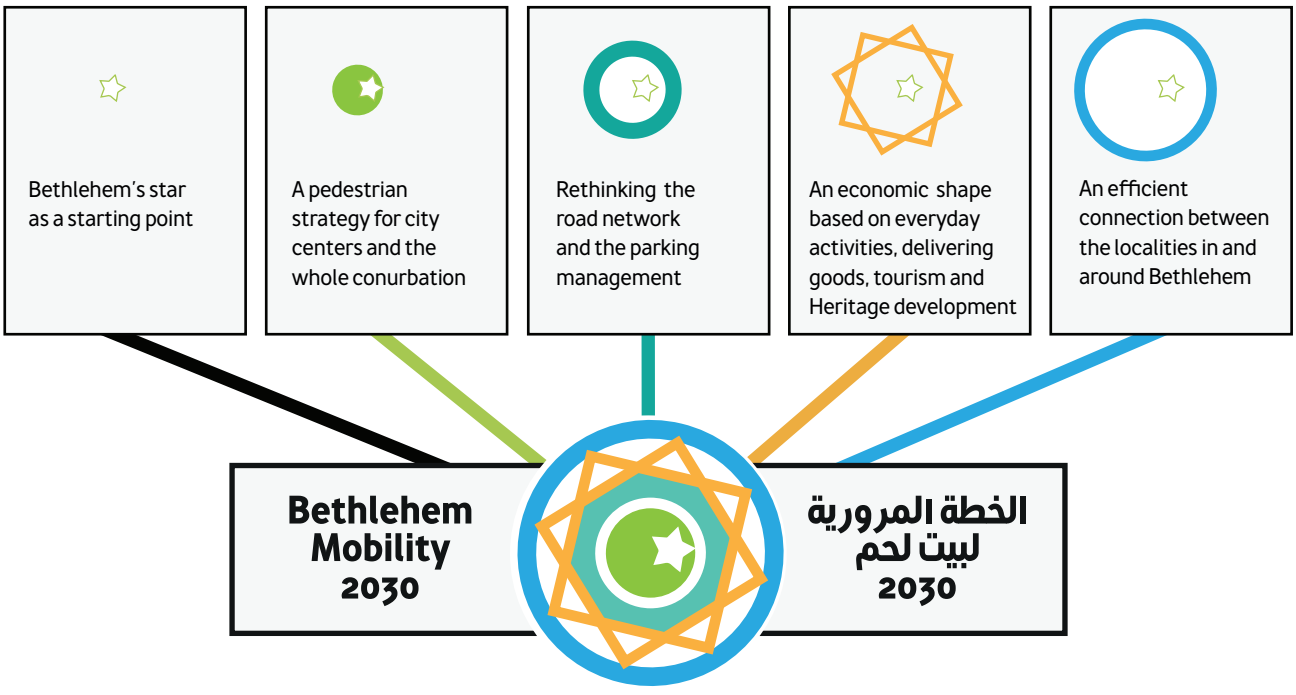
4. **Walking and street space:** safe and attractive public spaces, promotion of heritage sites, touristic routes.

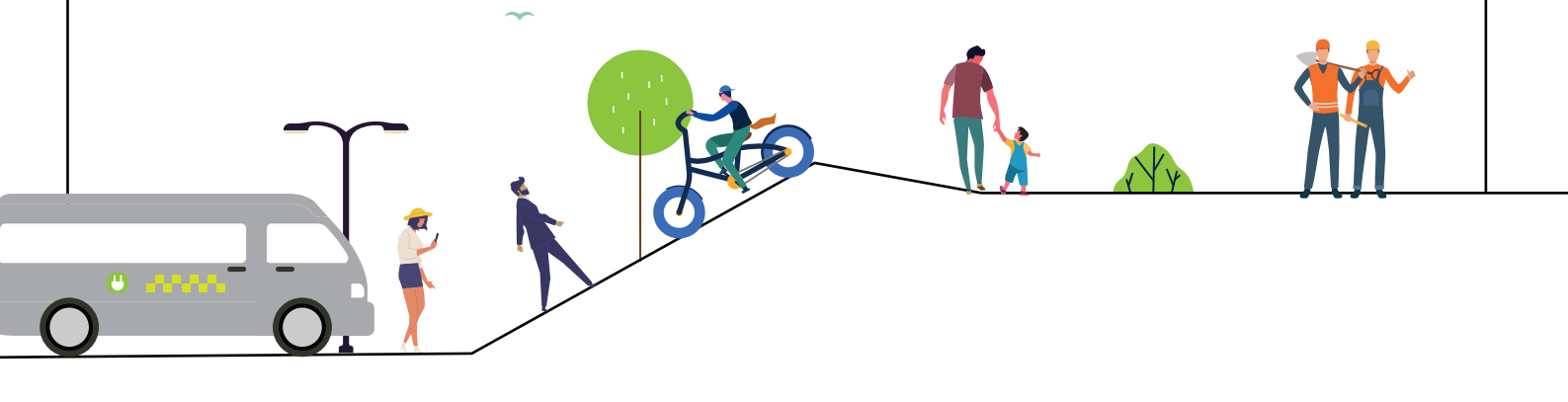
5. **Intensive communication, awareness and education campaigns:** traffic rules and safety, walking, cycling and PT promotion.

6. **New car modes and innovation :** car sharing system, electrical vehicles, car pooling.

7. **New financial and organisational models :** allocated funds from fees, taxes and fines, strengthened governance, capacity building and increased regional and international cooperation.

A star and the 4 axis of the strategy





Bethlehem Mobility 2030

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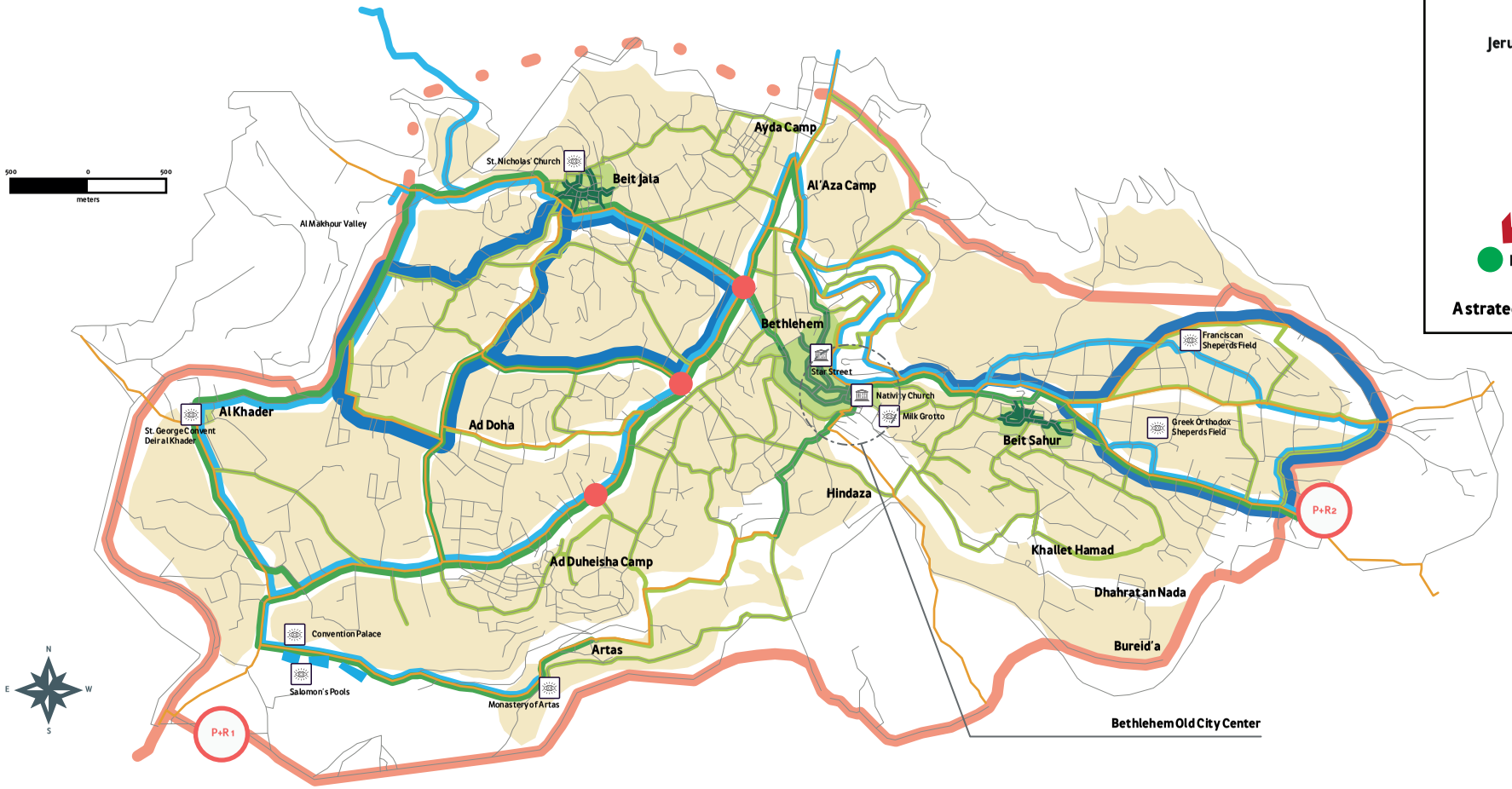
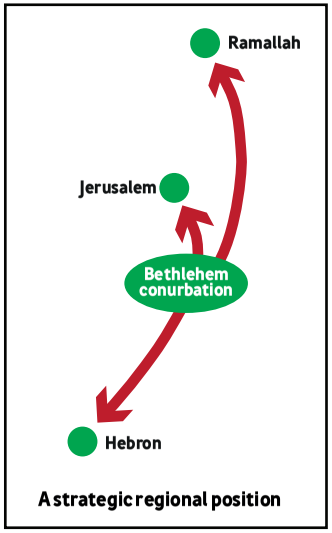
BETHLEHEM CONURBATION TRANSPORTATION & MOBILITY MAP





City center zones to be pedestrianized and revitalized

30 km/h zones

Pedestrian Streets - Car free zones

Main Pedestrian Roads

Secondary Pedestrian Routes

PT Lines

Improvment of roundabouts and crossing facilities

P+R (Park & Ride)

Activity Roads

Touristic Bus Route

UNESCO Heritage site

Point of interest

Ring Road

Ring Road future sections to be implemented after 2030

Bethlehem Mobility 2030

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BETHLEHEM OLD CITY CENTER TRANSPORTATION AND MOBILITY MAP

City center zones to be pedestrianized and revitalized

- Church
- Mosque
- UNESCO Heritage site
- Point of interest
- Traditional shop
- Shopping site
- Bank
- Bus Station
- Police Station
- Information
- Restaurant
- Hotel
- Toilets

A real change for everyone

ACCESSIBILITY	IF NOTHING CHANGES		BETHLEHEM MOBILITY 2030	
Vehicle-kilometres travelled (km)	50,730	+51%	39,400	-22%
Hours travelled (h)	1,360	+61%	1,070	-21%
Average trip length (km)	1.94	0%	2.2	0%
Number of internal trips generated	21,870	+35%	17,500	-20%
Number of external trips generated	3,610	+39%	3,420	-5%
Number of trips generated by PT	12,560	+ 9%	16,500	+31%

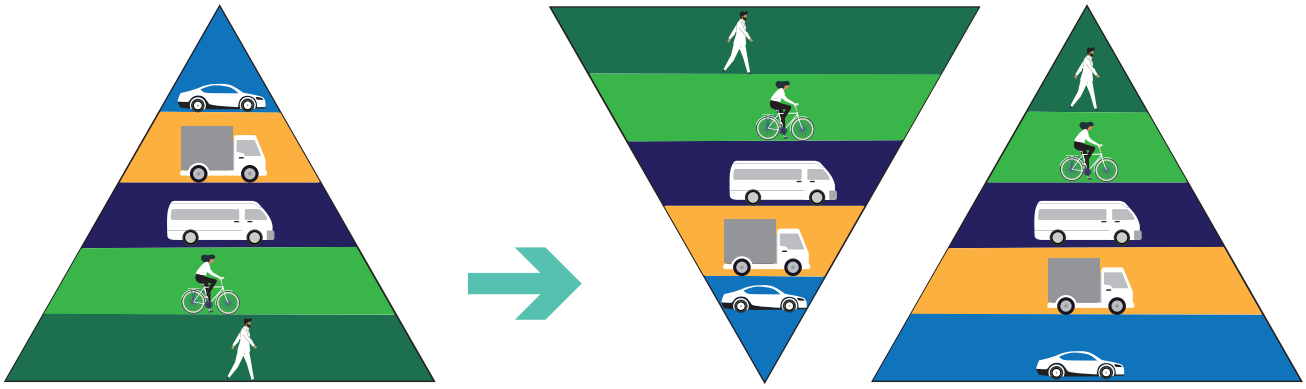

ECONOMIC EFFICIENCY	IF NOTHING CHANGES		BETHLEHEM MOBILITY 2030	
Total hours delay (h)	551,200	+128%	395,500	-28%
Cost of delays ($)	3.3M	+ 128%	2.3M	-28%

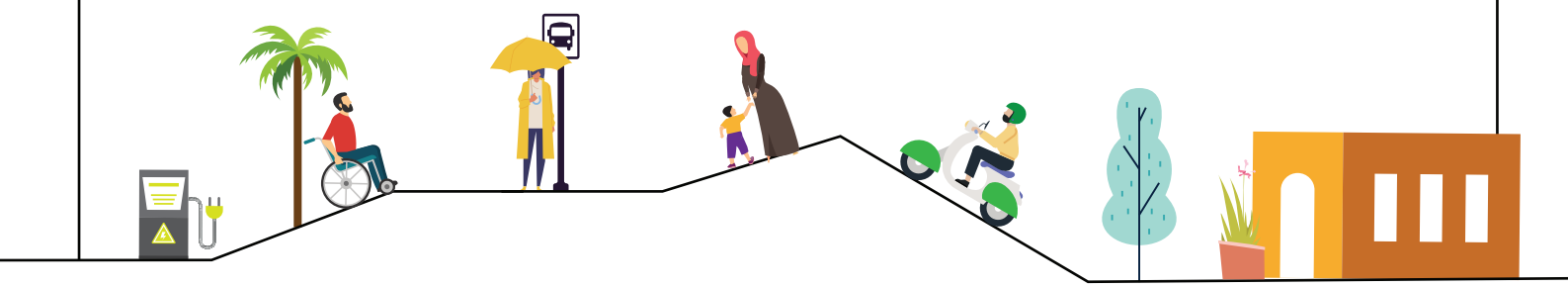

ECONOMIC EFFICIENCY	IF NOTHING CHANGES		BETHLEHEM MOBILITY 2030	
CO2 emissions (ton/day)	70	+43%	40	-42%
NOx emissions (ton/day)	0.02	+100%	0.002	-90%
CO emissions (ton/day)	0.34	+22%	0.05	-85%
PM emissions (ton/day)	0.72	+39%	0.37	-49%


SAFETY & SECURITY	IF NOTHING CHANGES		BETHLEHEM MOBILITY 2030	
Number of accidents per year	1,590	+92%	850	-47%
Number of injured per year	610	+14%	450	-26%
Number of deaths due to traffic accidents per year	21	+200%	4	-81%


LIVEABILITY	IF NOTHING CHANGES		BETHLEHEM MOBILITY 2030	
Modal split	54% cars	+5%	40% cars	-26%
	31% PT	- 4%	40% PT	+29%
	8% walk	-1%	20% walk	+150%


Inversion of the priority model for mobility planning





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List of the 39 projects identified in the strategy

GOVERNANCE, INFORMATION AND EDUCATION

1. Strengthen the Mobility unit at the scale of the Governorate
2. Increase capacity related to urban transport and mobility
3. Strengthen enforcement of traffic regulations
4. Establish a responsible body for local public transportation
5. Education and awareness activities

INTEGRATED MOBILITY CORRIDORS AND CROSS-SECTORAL INTERVENTIONS

6. Upgrade and modernise the integrated mobility corridor
   - 6A. North-South – Hebron-Jerusalem Road
   - 6B. Al Sahel Beit Jala
   - 6C. Beit Sahour
   - 6D. North-East – Manger Street
   - 6E. Dr. Gemeiner Street
11. Modernize and revitalize Bethlehem City Centre
12. Modernize and revitalize Beit Sahur City Centre
13. Modernize and revitalize Beit Jala City Centre

ROAD NETWORK AND NEW CAR MODES

14. Ring road_ Wadi Musalam
15. Ring road_ Irtas
16. Ring road_El-Amal road
17. Implement 30 km/h zones and home-zones in residential areas
18. Improve the quality of road, signaling and marking
19. Improve traffic safety conditions near schools
20. Develop a car sharing system with electrical vehicles
21. Encourage and support car-pooling

PARKING

22. Implement the parking strategy and pricing over the whole area
23. Park+Ride facility at the east entrance
24. Park+Ride facility at the southwest entrance
25. Build new off-street parking garages
26. Develop a city-wide parking information and management system

PUBLIC TRANSPORT

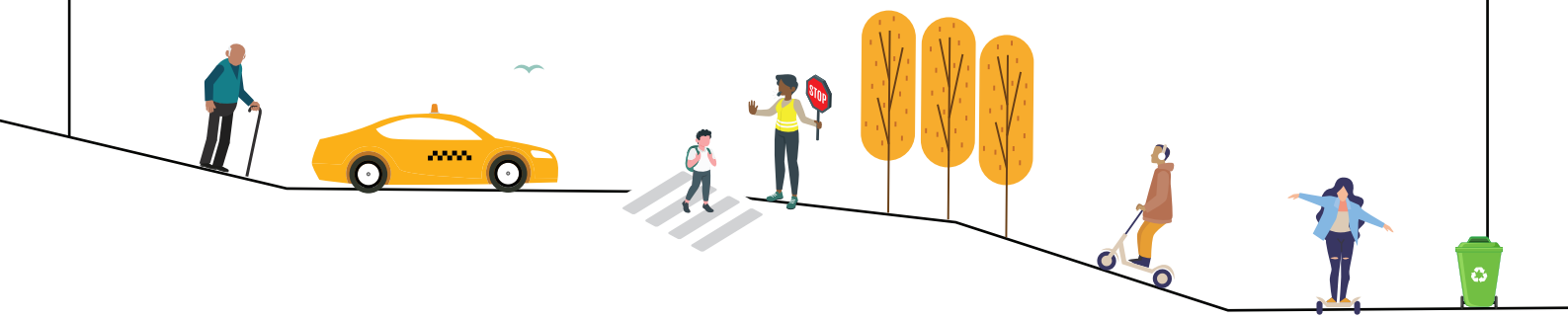
27. Reorganize the routes of the current public transport system
28. Build PT stops
29. Develop a scheduled PT system
30. Introduce a touristic bus route, operated by electrical buses
31. Impose minimum quality requirements for service providers
32. Phase out old, polluting PT vehicles
33. Develop and approve a methodology for Public-Private Partnership
34. Introduce/ acquire electrical buses
35. Introduce an on-demand public transport system

NON-MOTORISED TRANSPORT

36. Develop a coherent pedestrian network
37. Implement a walking school bus
38. Develop online/ offline applications for walking routes/ wayfinding

FREIGHT

39. Develop and implement a city-wide freight delivery strategy



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Bethlehem Municipality – Established 1872 – بلدية بيت لحم تأسست

VILLE DE PARIS

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