

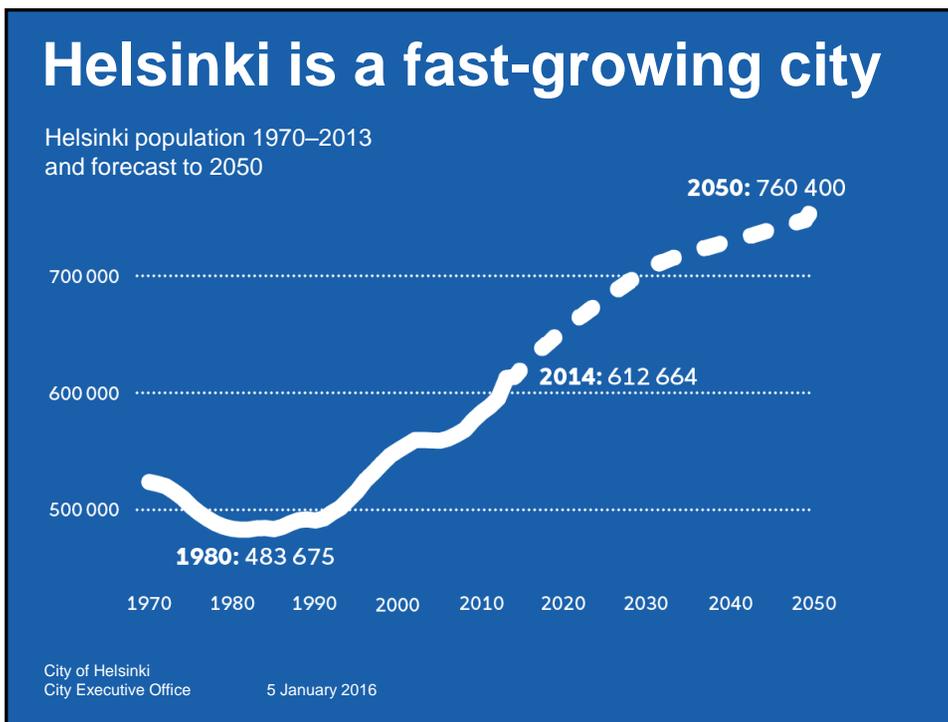
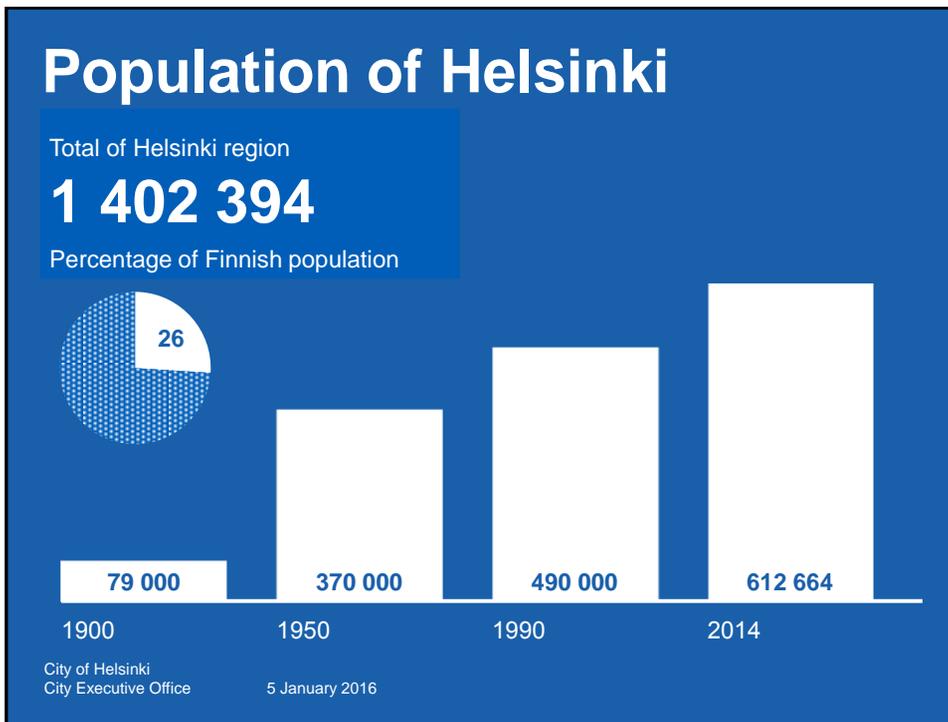
# Choosing location of bicycle paths

Photo: Martti Torni



City of Helsinki  
City Planning Department 5 January 2016





## Current themes in transport

- Promotion of walking, cycling and public transport
- New tramway lines
- Adjustment of parking policy
- ITS (Intelligent Transportation Systems)
  - Signal priority for public transport
  - Real-time information for all traffic modes → more efficient traffic management
  - Automatic traffic enforcement

City of Helsinki  
City Executive Office

5 January 2016

Photo: Lauri Raitio



## Challenge: Despite the new inhabitants, the total number of car trips should not increase

- The new people of Helsinki
  - will have to largely lean on the capacity effective modes of transportation
- Some of today's citizens
  - Will have to change their routines
  - Give way for new car drivers...

## Vision and strategy

- Increase the modal share of bicycle trips to 15 % by 2020
- Strategy programme: Promote walking, cycling and public transport
  - Bicycle traffic action plan
  - Financing

Evaluation and testing
21. The means of evaluation and testing

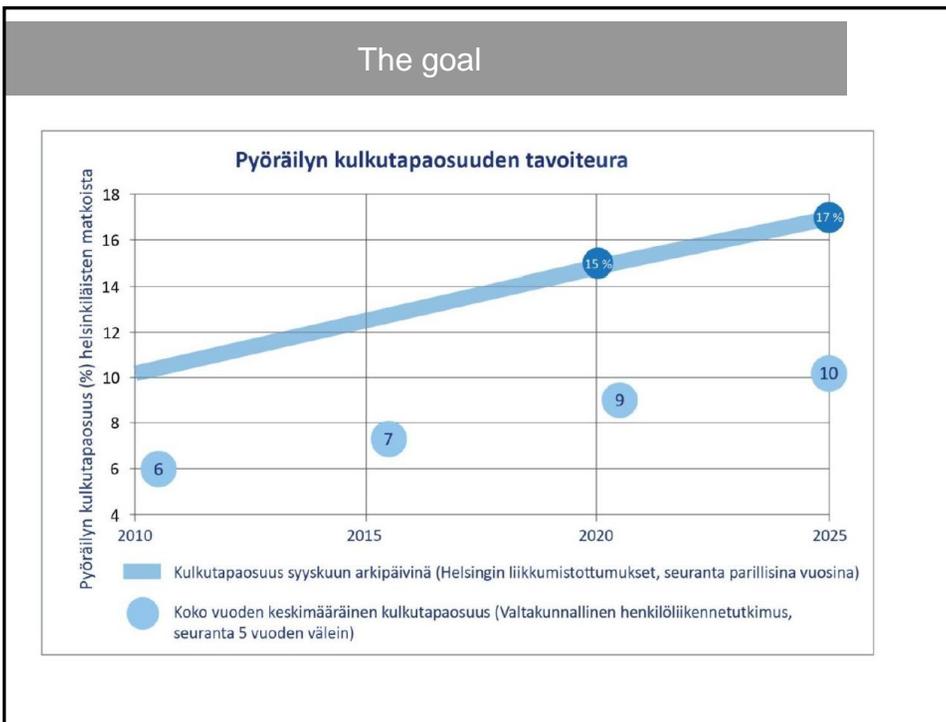
Politics
1. Ambition
2. Mobility strategy
3. Norms and guidelines

Infrastructure
4. Direct routes in distance and in time
5. Cohesion
6. Super highways
7. Traffic calming
8. Intersections
9. Separation between walking and cycling
10. Bicycle parking
11. Winter maintenance
12. Lighting and surface materials
13. Temporary work sites

Services
14. Bicycle centre
15. City bikes
16. Guidance
17. Other services

Communication
18. The brand of Helsinki cycling
19. Communication plan
20. Responsible traffic behaviour

Implementation process			
22. Human resources	23. Budget	24. Organization	25. Responsibilities



## Why bicycle traffic is important for a city?



Space



Safety



Health benefits



## Environmental benefits



## Five main requirements

1. Safety
2. Directness
3. Cohesion
4. Comfort
5. Attractiveness



## Safety

### Problem:

- A great difference in speed and mass between cyclists and cars
- A car has 57 times more kinetic energy than a bike+cyclist in a citytraffic

### Solution:



Traffic calming



Separation of traffic modes



Understandable traffic solutions

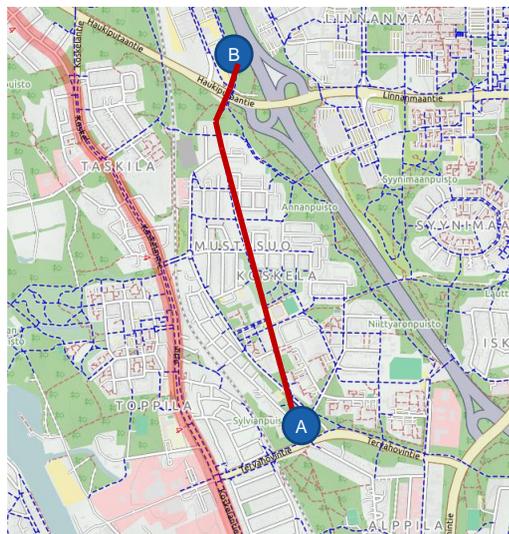


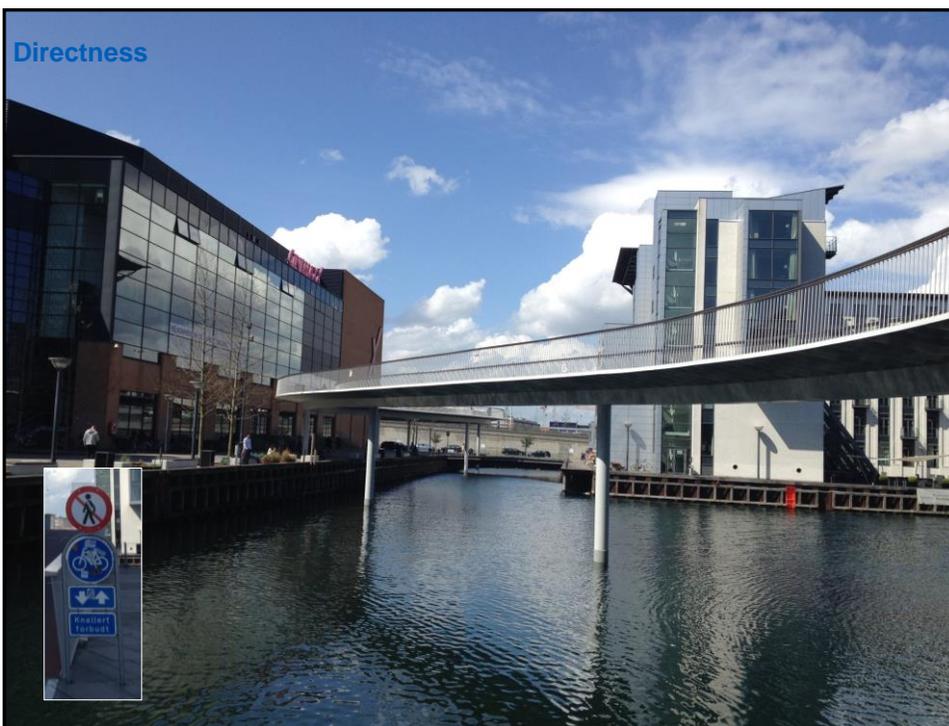
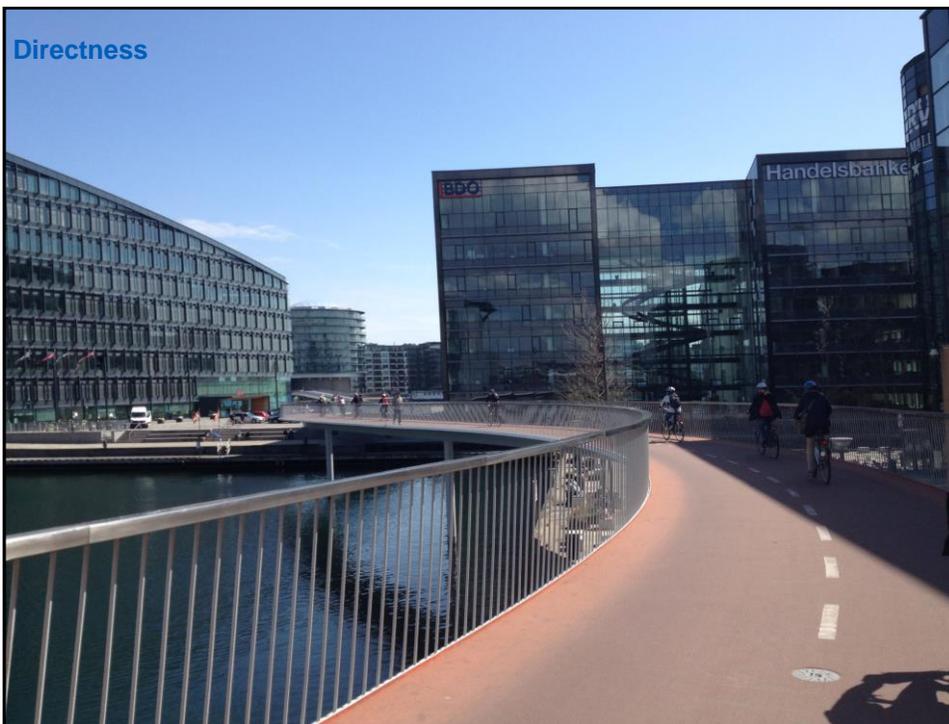


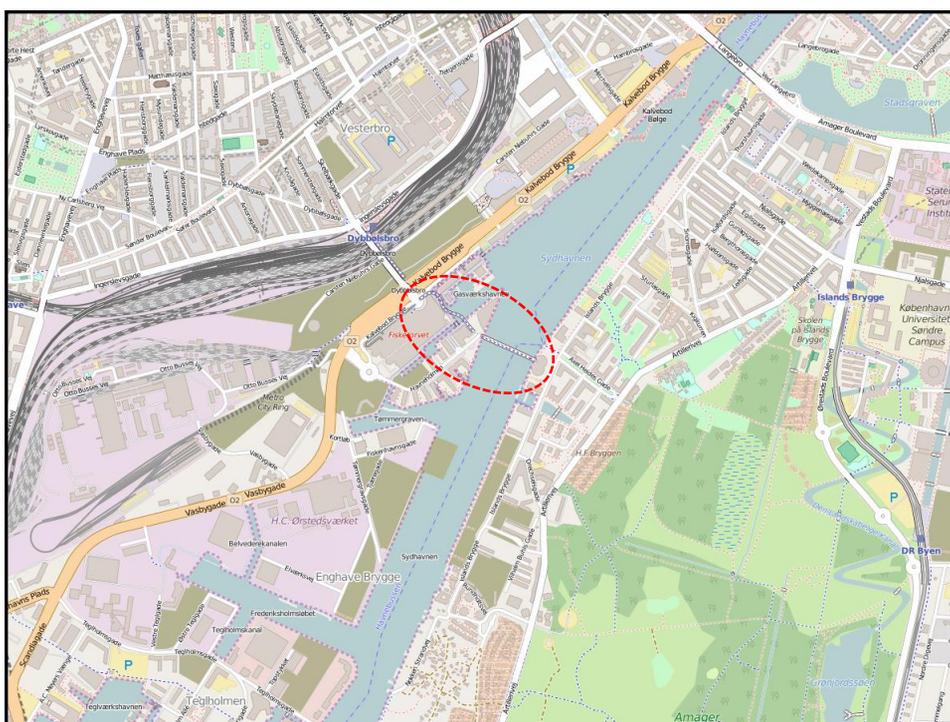
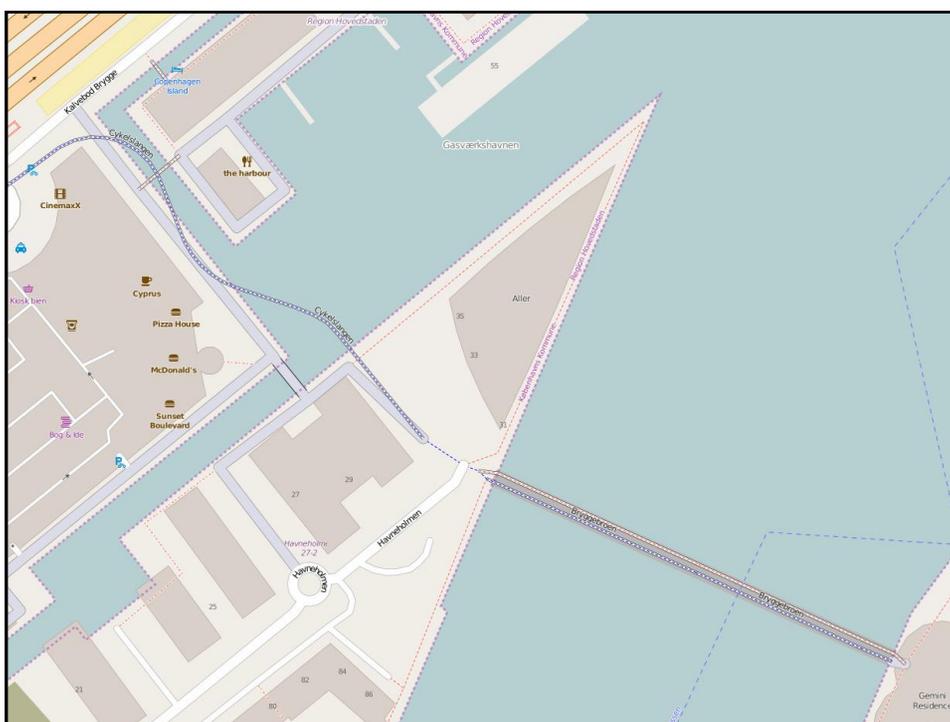


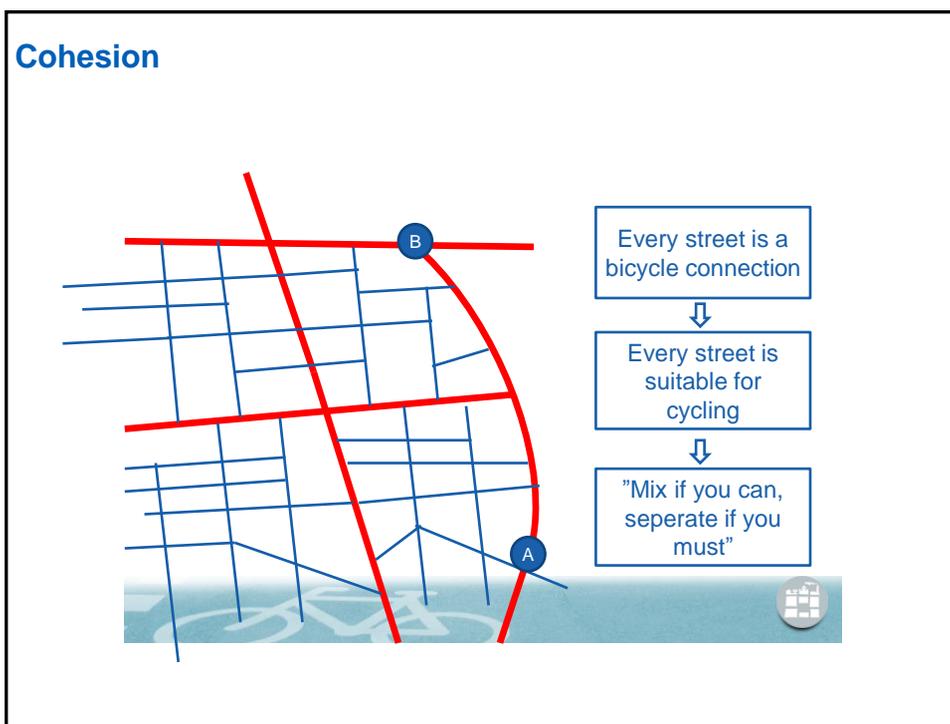
## Directness

- Directness in time
- Directness in space



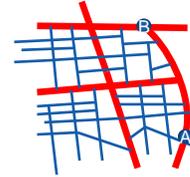






## Cohesion

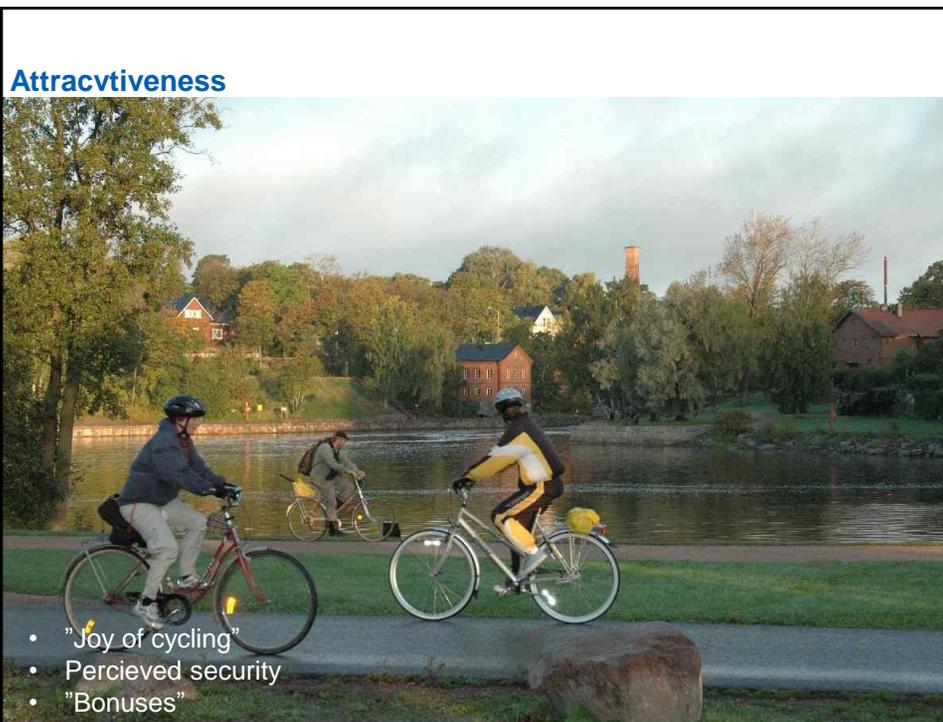
- Cycling facilities in a larger scale
- Continous connections & no bottle-necks
- Every address is accessible
- Easy orientation



## Comfort

- Physical and mental easiness
- Physical load:
  - Uneven and bumpy surface
  - Curbs
  - Hills
  - Acceleration
  - Stopping and breaking
  - Snow
- Mental load:
  - Difficult and unclear traffic solutions
  - Nuisance of heavy traffic (mixed traffic)
  - "Bicycle chaos"
  - Sudden actions of pedestrians (dogs etc.)
  - Weak winter maintenance





## Network planning

Focus: planning for commuters and other everyday trips

- Home, work, study, hobbies, shops, public transport terminals etc.
  - All the addresses are easily and safely accessible
  - Easy orientation
  - Direct routes

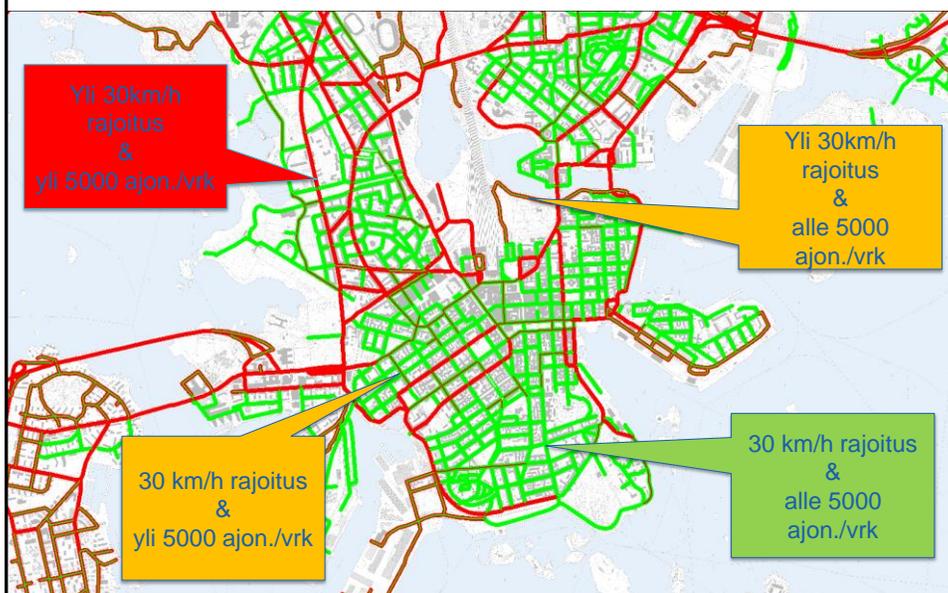


## Mix if you can, separate if you must

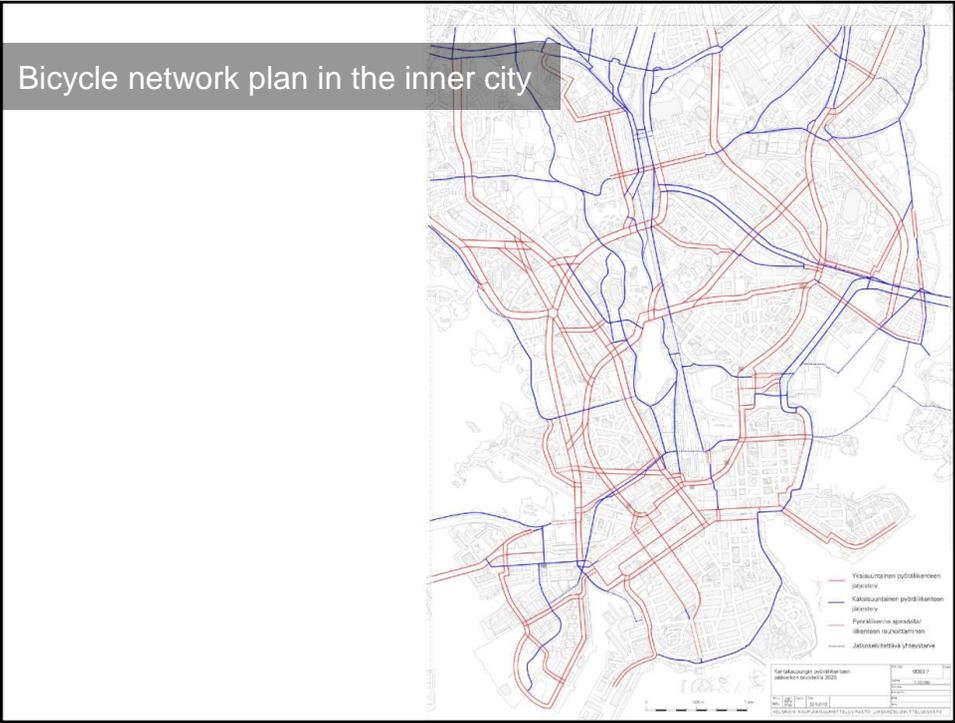


Moottoriajoneuvo-liikenteen nopeus	Moottoriajoneuvo-liikenteen määrä	Pyöräliikenneverkon kategoria		
		Paäreitti	Muu reitti	Perusverkko
max 30 km/h	< 2000	Seka tai pyöräkaista/-tie	Sekaliikenne	Sekaliikenne
	2000-4000	Pyöräkaista/-tie	Seka tai pyöräkaista/-tie	Seka tai pyöräkaista/-tie
	4000-7000		Pyöräkaista/-tie	Pyöräkaista/-tie
	7000-		Seka tai pyöräkaista/-tie	Sekaliikenne
< 2000	Pyöräkaista/-tie		Seka tai pyöräkaista/-tie	
40 km/h	2000-4000	Pyöräkaista/-tie	Pyöräkaista/-tie	Seka tai pyöräkaista/-tie
	4000-7000			Pyöräkaista/-tie
	7000-			Pyöräkaista/-tie
50 km/h	< 2000	Pyöräkaista/-tie	Pyöräkaista/-tie	Seka tai pyöräkaista/-tie
	2000-4000			Pyöräkaista/-tie
	4000-7000			Pyöräkaista/-tie
60 km/h	Ei merkitystä	Pyörätie		

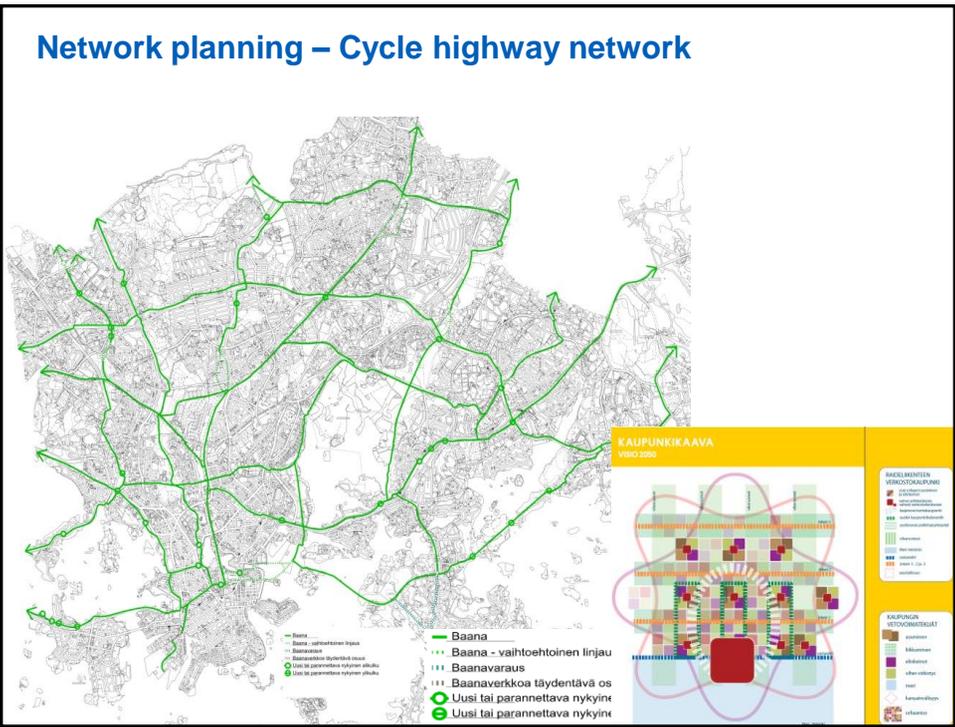
## Revealing the bottle-necks

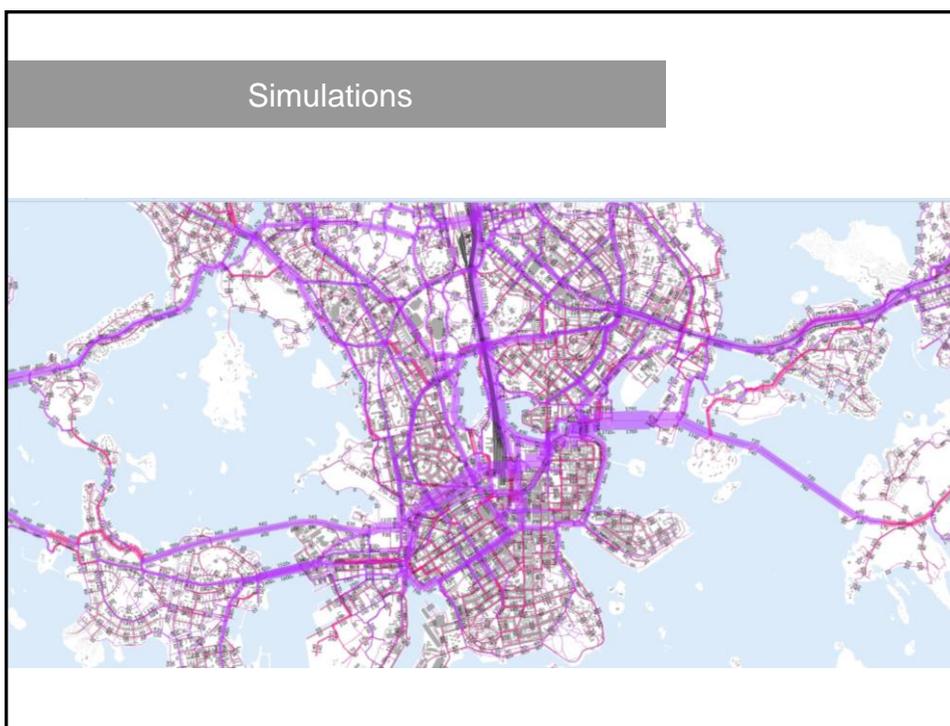


Bicycle network plan in the inner city

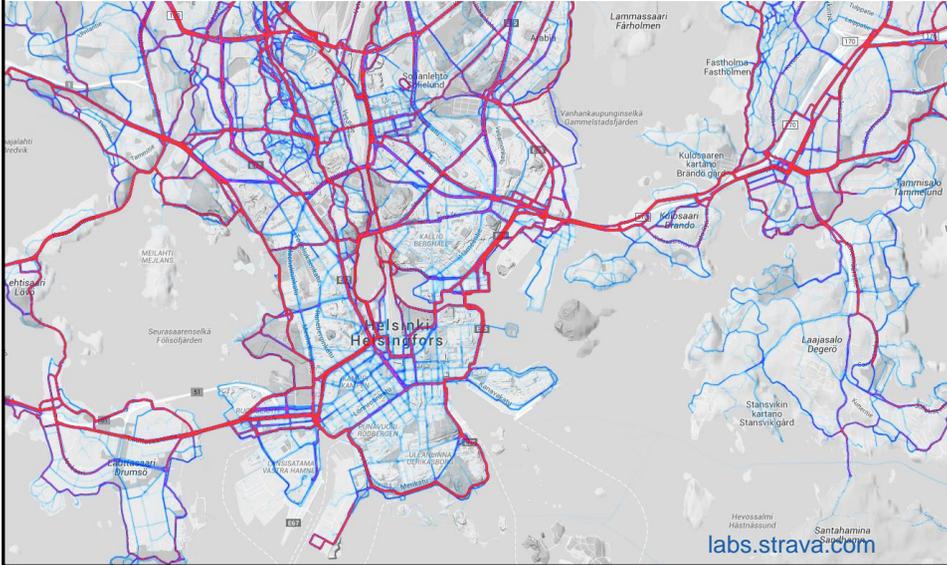


Network planning – Cycle highway network



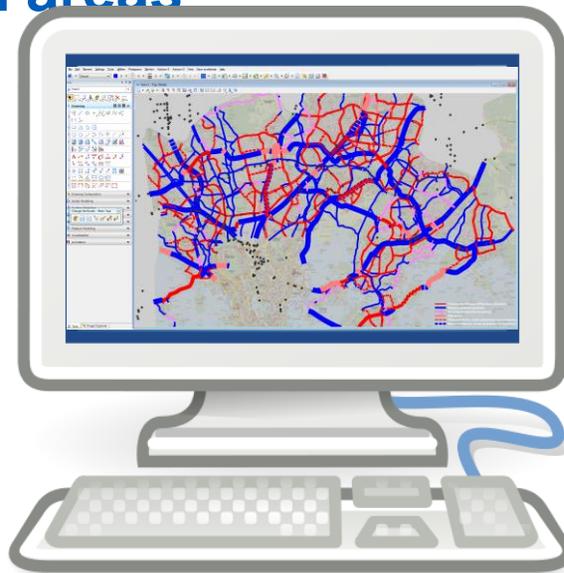


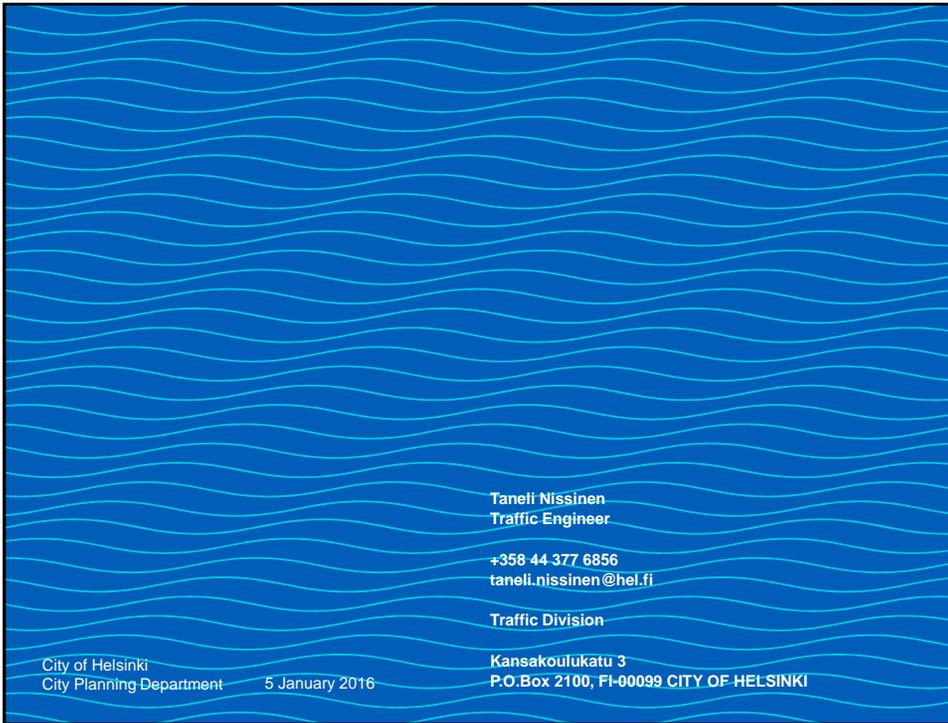
## GPS-data



## Bicycle network plan in the suburban areas

- 2016





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City of Helsinki  
City Planning Department 5 January 2016

# Bicycles in intersections and roundabout crossings



City of Helsinki  
City Planning Department 5 January 2016

In the beginning cycling was a real mode of transport...

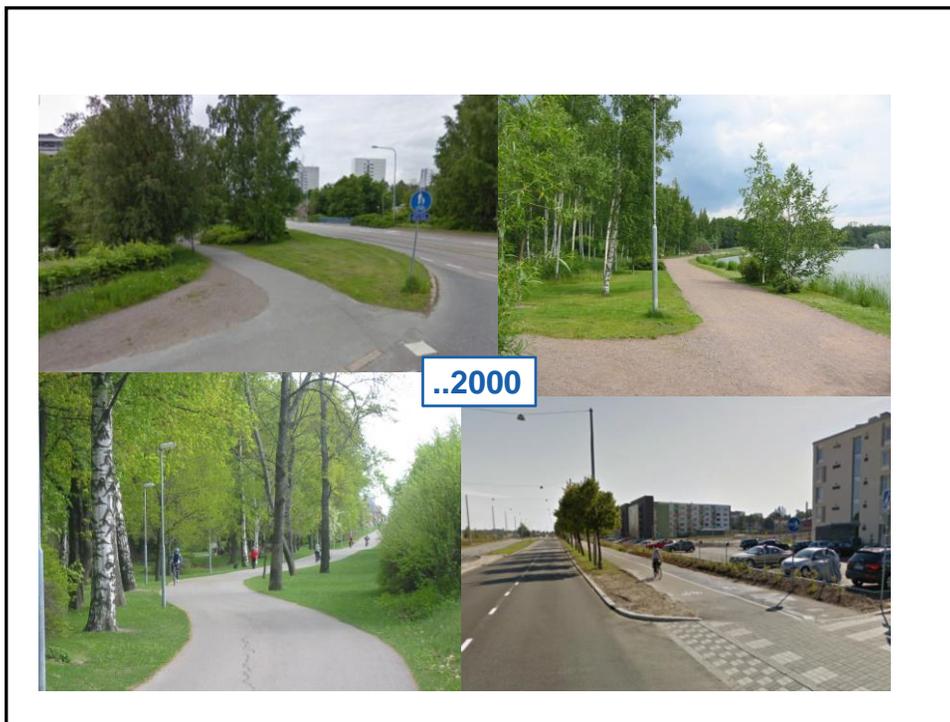
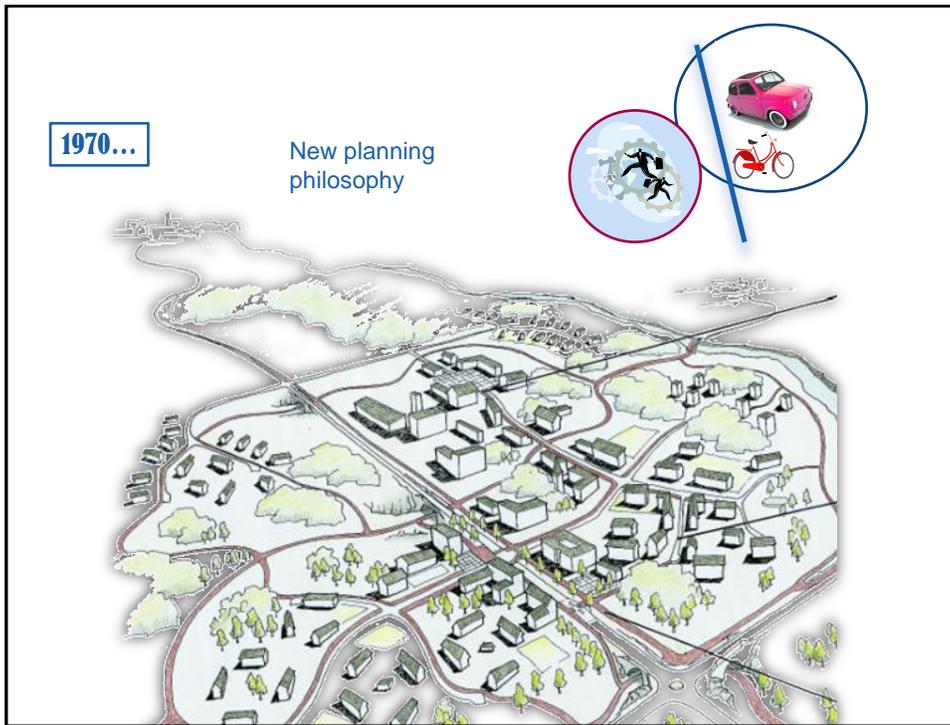


(Picture: HS)

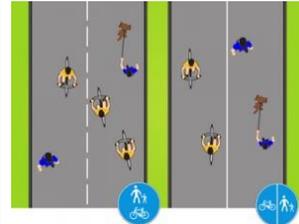
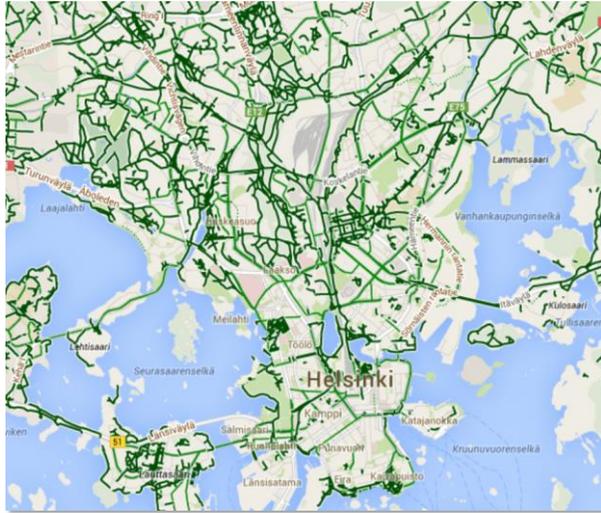
Then the automobile took over and cycling was forgotten...



(Picture: Kaupunginmuseo)



## Current situation



- 1200 km cycle paths
- Mostly **combined** paths for pedestrians and cyclists

## Existing problem: functional design

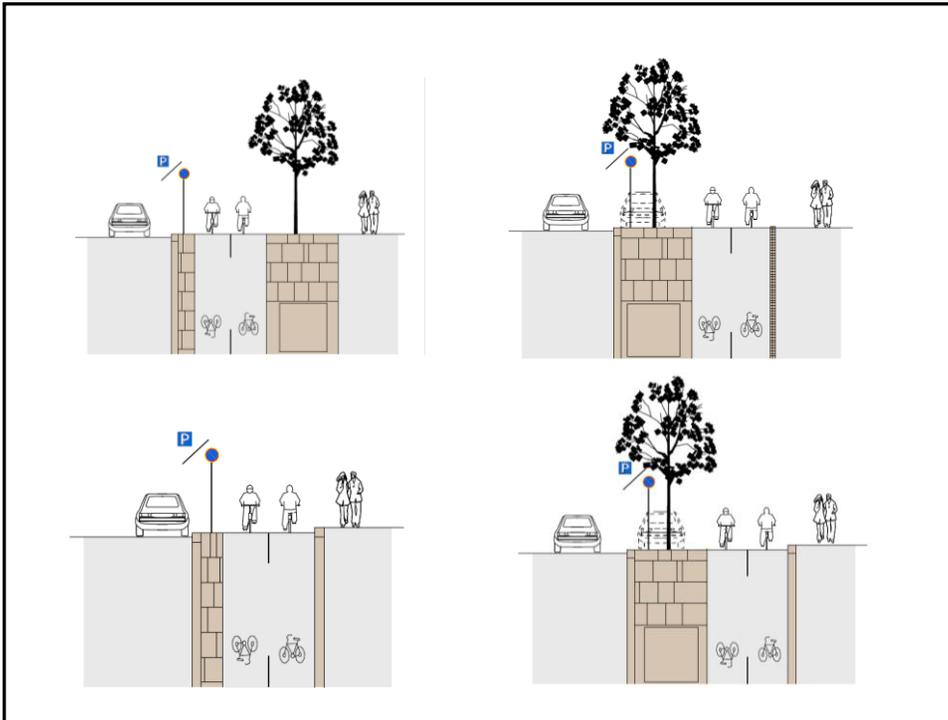
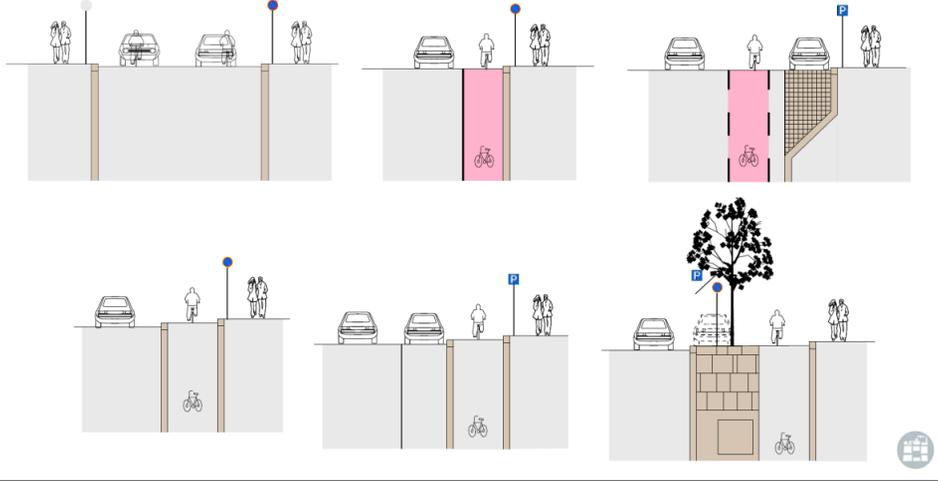






## New planning principles (2013):

Important: separation of cyclists and pedestrians!



## Infrastructure for Bicycle traffic

### Road sections

- **Mixed traffic**
- Bicycle tracks
- Bicycle lanes
- Solitary cycle tracks
- Combined facilities for cyclists and pedestrians
- Bicycle streets
- Contra flow

### Intersections



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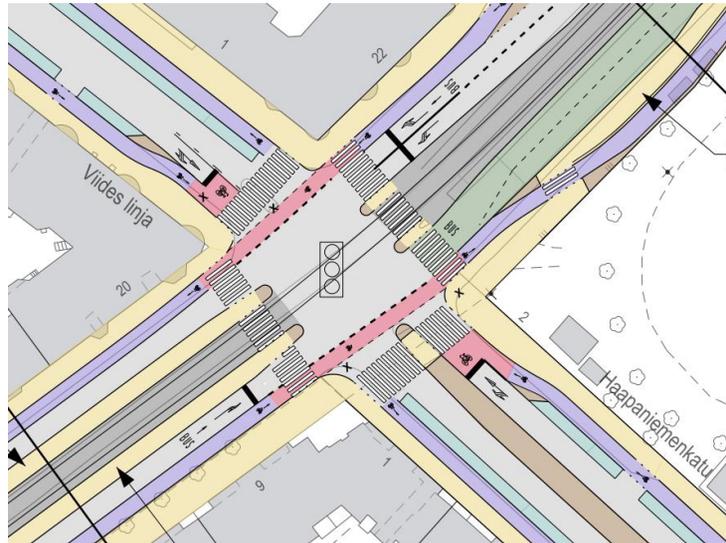
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### Intersections



## One directional solutions



## Why one directional bicycle paths?



Why one directional bicycle paths?



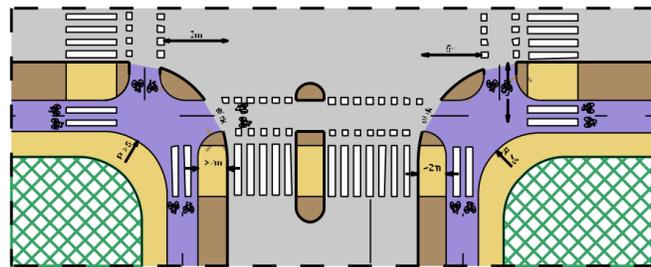
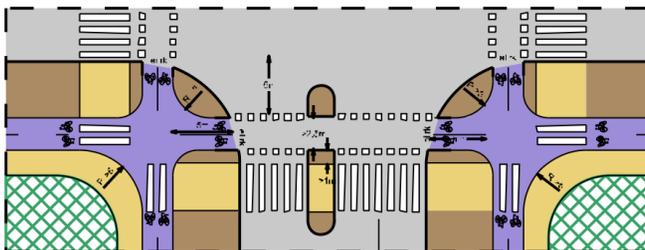
Why one directional bicycle paths?



## Why one directional bicycle paths?



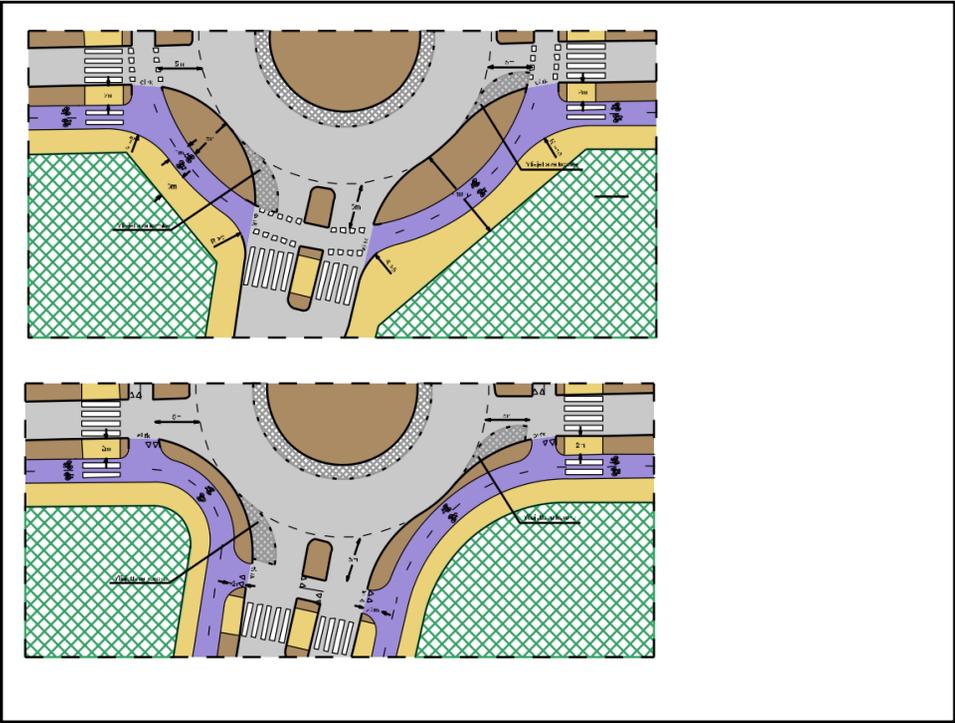
## Two directional solutions





## Roundabouts





## Roundabouts

This section is titled "Roundabouts" in blue text. It contains four technical diagrams arranged in a 2x2 grid, each showing a different design variation for a roundabout. The top-left diagram shows a standard roundabout with a central island and four approaches. The top-right diagram shows a roundabout with a central island and four approaches, but with a different lane configuration. The bottom-left diagram shows a roundabout with a central island and four approaches, including a dedicated lane for a specific direction of travel. The bottom-right diagram shows a roundabout with a central island and four approaches, including a dedicated lane for a specific direction of travel and a red hatched area indicating a specific pavement type. All diagrams use color-coding and hatching to indicate different pavement types and lane boundaries. Arrows and dimension lines are used to specify traffic flow and measurements.

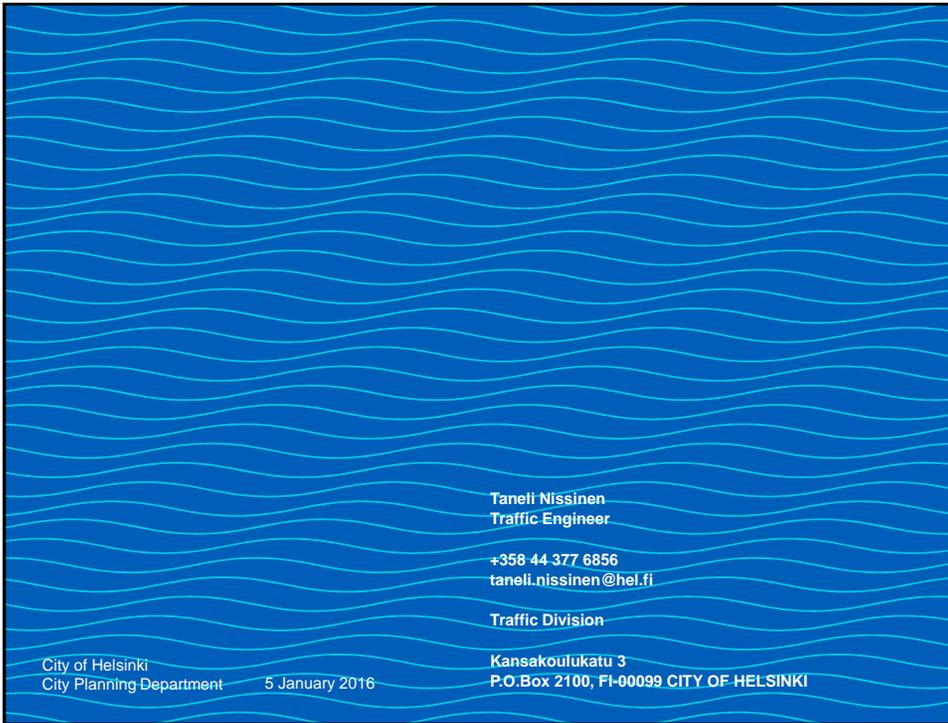
## Solution to avoid: Two directional solutions only on one side of the street

- The other side of the street is hard to reach
- It leads to illegal cycling on the side without a cycle path
- Hard to join to one directional systems
- Makes streetspace asymmetrical which leads to more costly road works if it needs to be changed
- Can be used in special occasions like on a river bank or shore line

City of Helsinki  
City Planning Department 5 January 2016

### Bicycle network plan in the inner city





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