

# Best practices in sustainable urban mobility planning and development in Austria

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# What I am going to talk about...

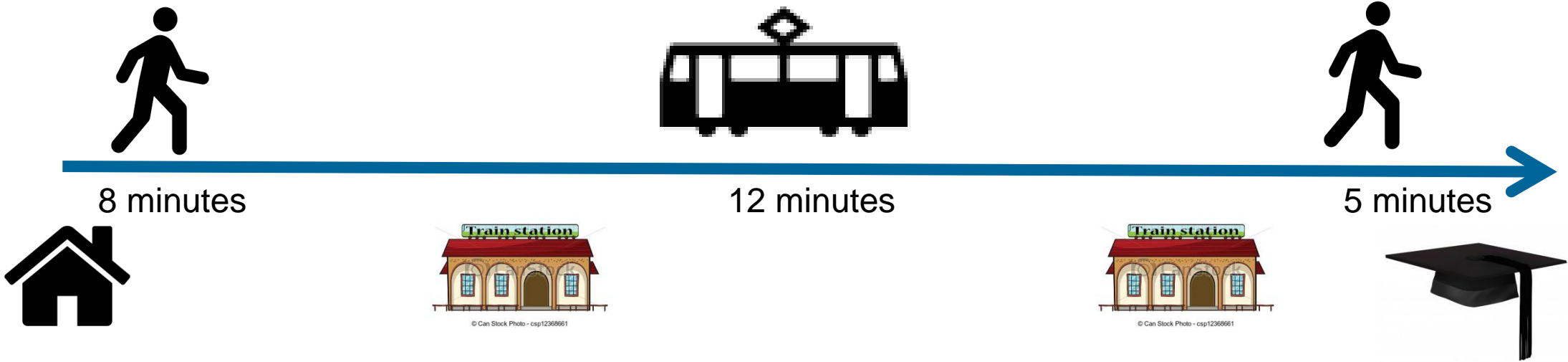
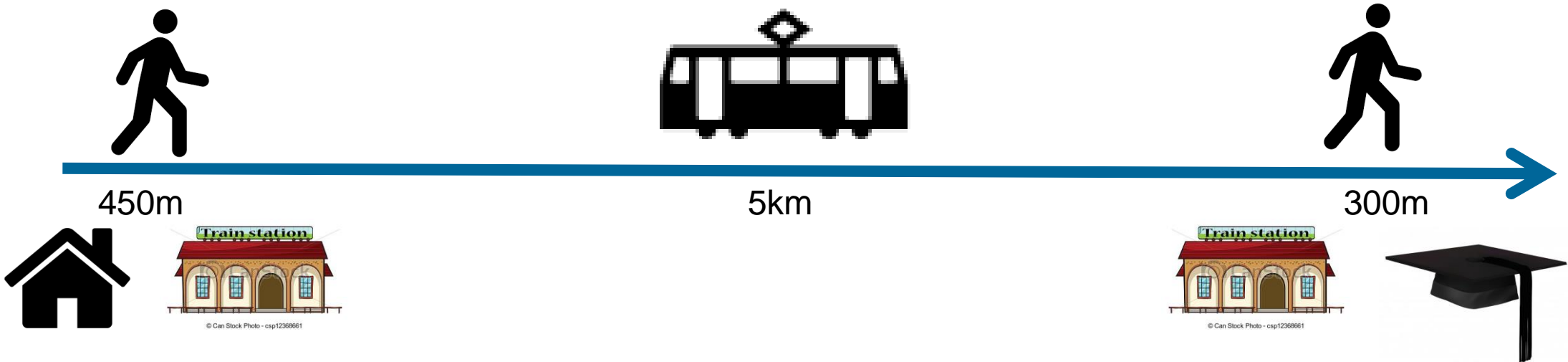


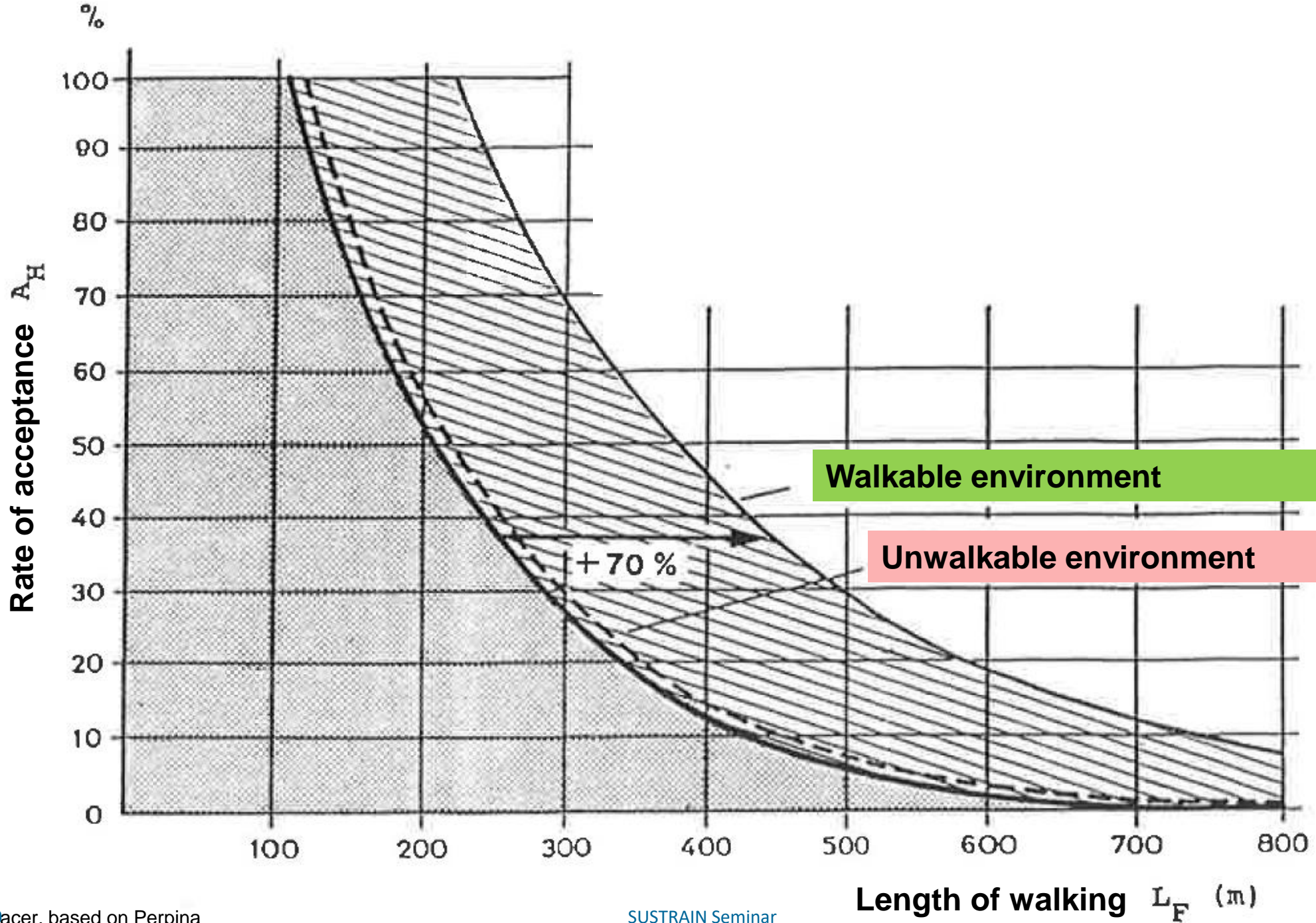
1. Some important aspects on transport planning
2. Public transport
3. Road
4. Summary/Conclusion



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# Perception of users for public transport



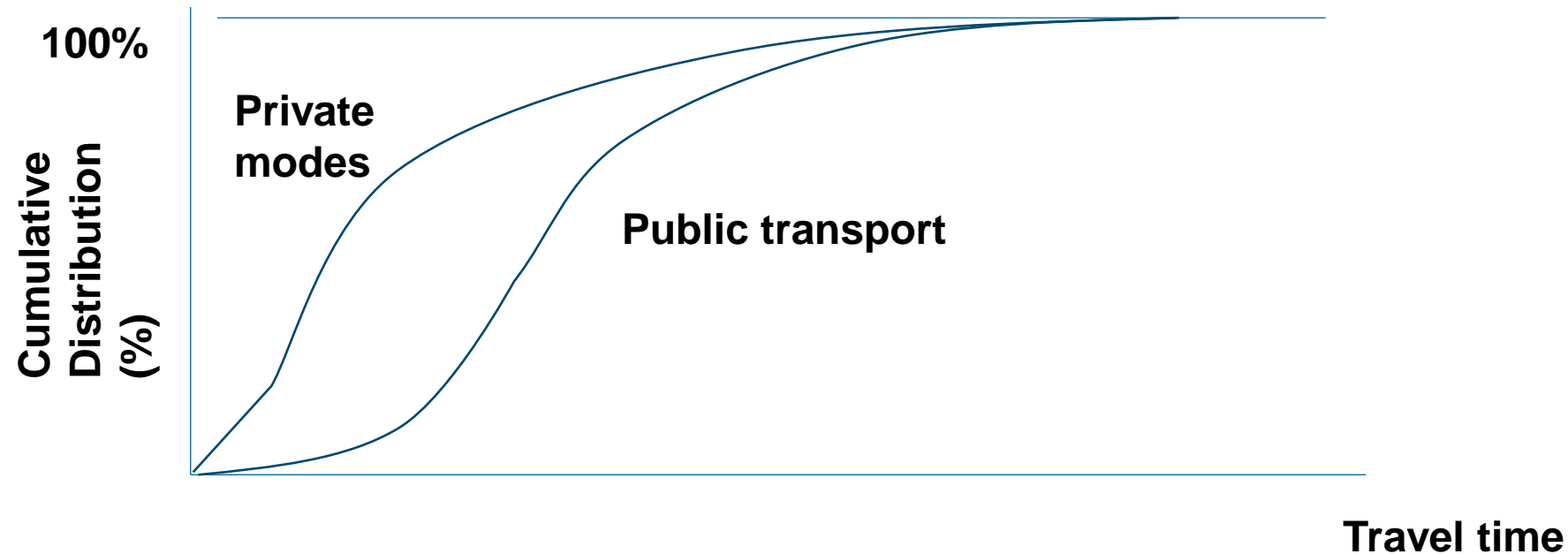




- **Basics 1:** **Time budget** for travel per person per day is **roughly 60 to 80 minutes**.
  - **It fits to this range regardless of main modse used;**
  - Rural area: ~60 minutes
  - In cities, it tends to be longer: ~80 minutes
  - Megacities: ~120 minutes
  - Longer among e.g. working population.

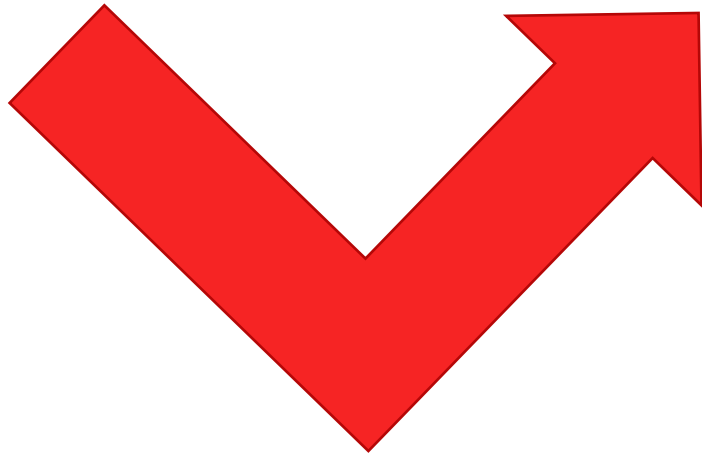


- **Basics 2:** cumulative distribution of travel time are **similar among private modes** (walking, biking and cars)
- Public transport tend to show longer cumulative distribution because of access and egress time
- Urban structure: affinity for walking, cycling, or automobile?





- Rebound:



**The Real Diet Story**





- **Rebound Effect**

- „Saving“ effect can be **cancelled by changes of human behaviour**
- Typical project: „Speeding up to reduce travel time“
  - **Short-term effect: shorter travel time, people „save“ time**
  - **Long-term effect: people tend to travel over longer distances**
    - **„Rebound Effect“**



- William Stanley Jevons (1865)
- With **increase of the efficiency** with which a resource is used (reducing the amount necessary for any one use)
  - By technological improvements, or
  - By government policy
- The rate of **consumption** of that resource **rises** due to **increasing demand**



- **Energy-efficient Car:**
  - Lower cost per km
- Effects
  - **More use of the automobile, longer travel distance**
  - → Total use of energy: unchanged or more in a long-term



- **Faster speed** in transport system:
  - Bypass road, motorway, Intelligent Transport System, ...
  - You can reach far within the same time
- Effects
  - Short term: time-saving
  - **Long-term: extension of travel distance**
  - Travel time: no saving in a long term



- By Dietrich Braess (1968)
- Mathematical paradox, with real-world application
- Adding roads to a road network can end up impeding overall traffic flow.
- Inversely, Removing roads from a road network can end up improving overall traffic flow.

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## • Network

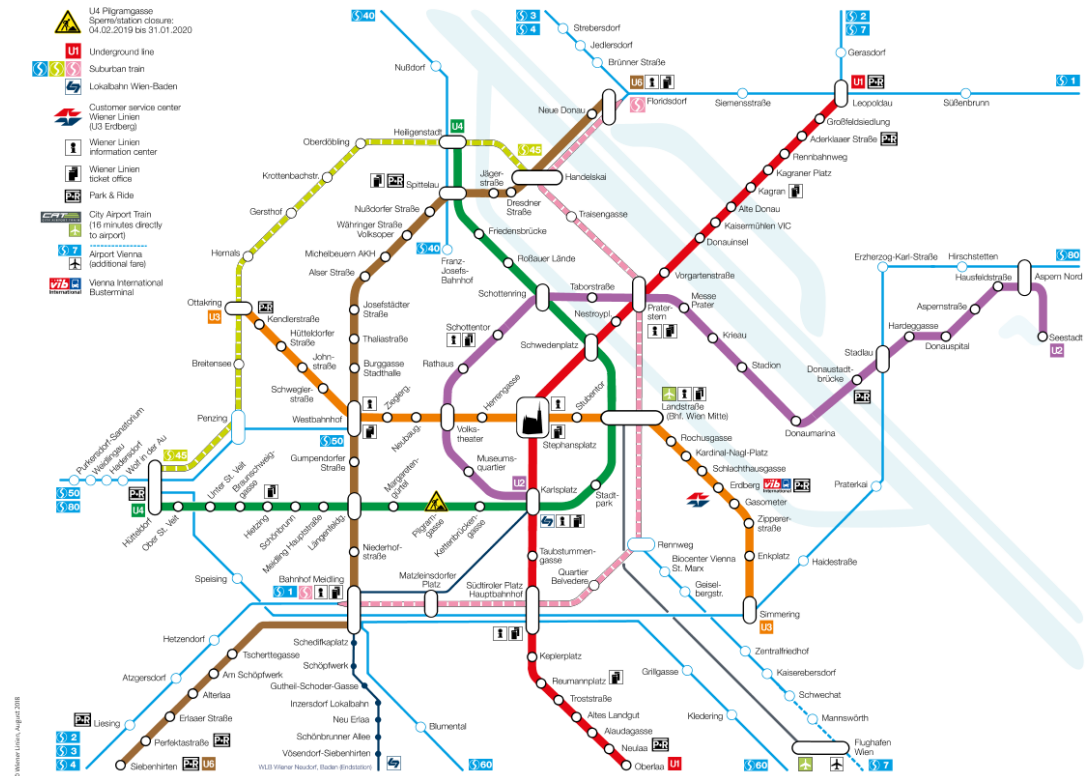
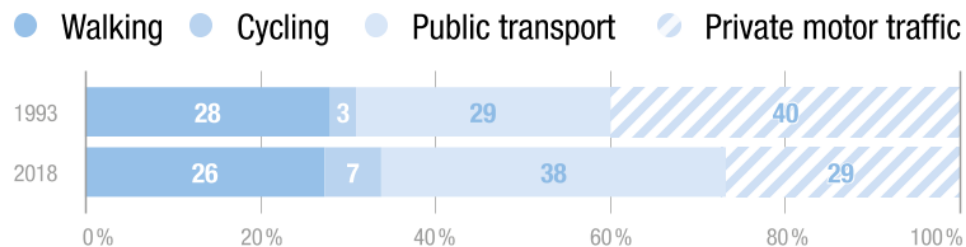
- Metro: 83km
- Tramway: 220.5km
- Bus: 848 km

## • Urban Development only allowed:

- Within **300m from tram/bus stops**, or
- Within **500m from metro/railway stations**

### Modal split

The modal split share of public transport has risen by nine percentage points since the year 1993.



- **Annual public transport pass:** introduced in 1982
- Different payment modes:
  - One-time payment for one year
  - Monthly subscription
- Now: online purchase



The screenshot shows the Wiener Linien website interface. At the top left is the Wiener Linien logo. Below it is a search bar and a 'Passenger Information' section. A navigation menu includes 'Home', 'Tickets', 'Annual ticket - service', 'Fanshop', 'FAQ', 'Cart', and 'Logout'. A 'Ticket Shop' button is visible on the right. The main content area shows the 'Shopping Cart' with a progress indicator 'Step 2/6'. On the left, there is a 'Customer Login' section with a 'Logout' button. The shopping cart table contains one item: an extension of the Vienna annual ticket.

Qty.	Product description	For	Type	Price	Total
1	Extension of the Vienna annual ticket Valid from 01.01.20 00:00 Uhr Valid till 31.12.20 23:59 Uhr <a href="#">Modify</a> <a href="#">Remove</a>	4801580139		€365.00	€365.00 incl. 10% VAT



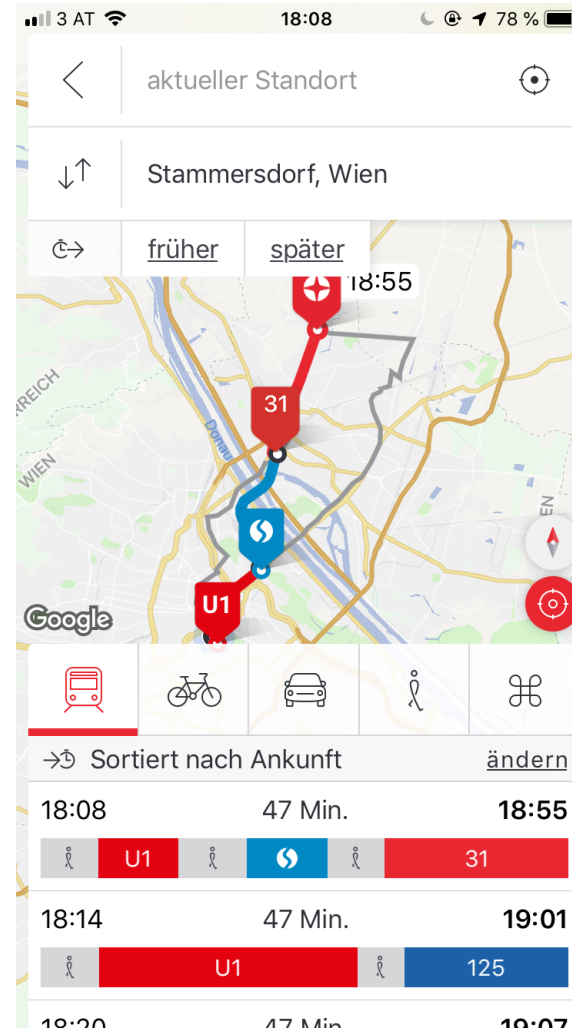
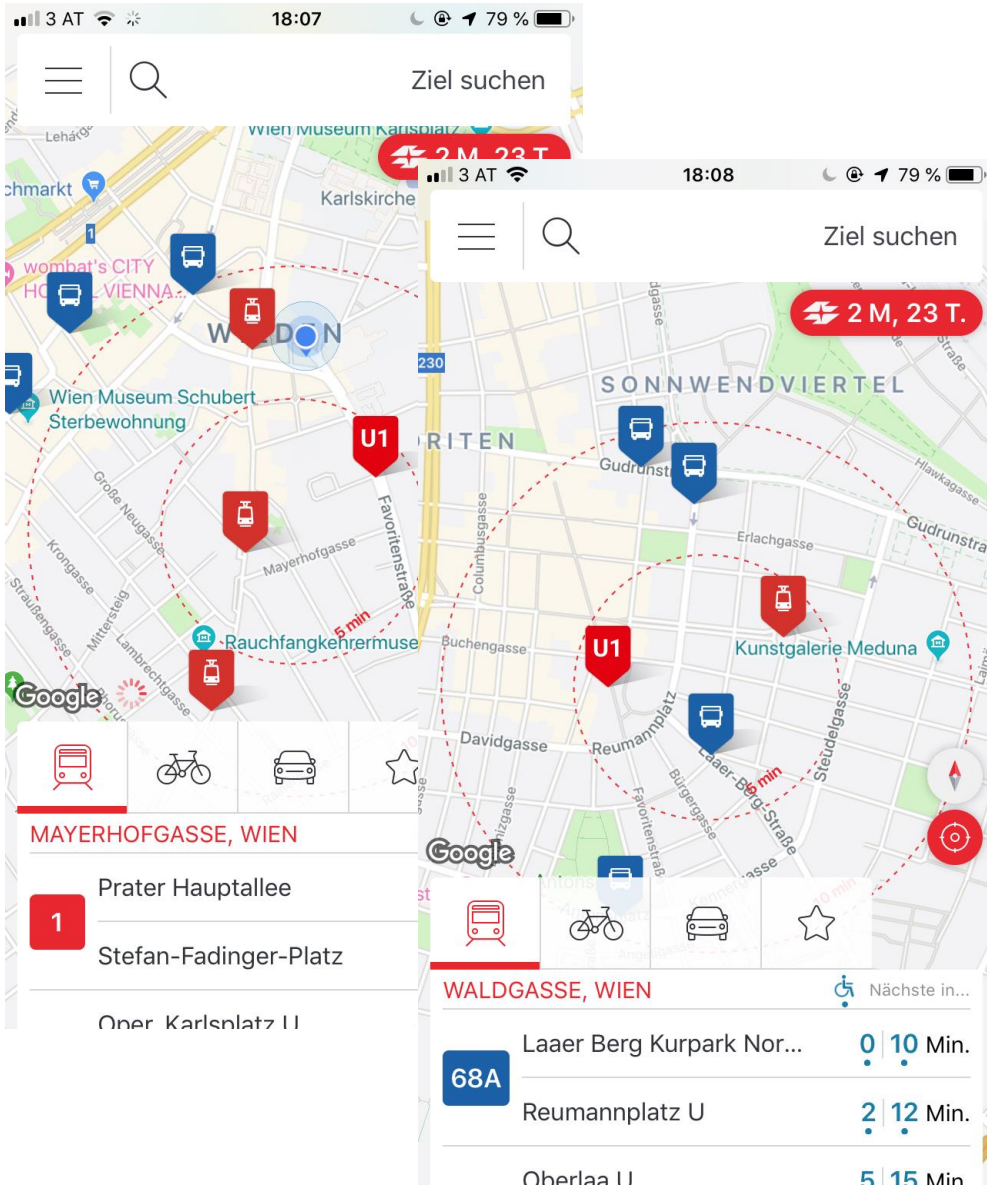
# Attractive rolling materials





- Since 1950s: Night bus
- Since 2010: 24-hour metro on weekends
- Since 2019: 24-hour suburban railway



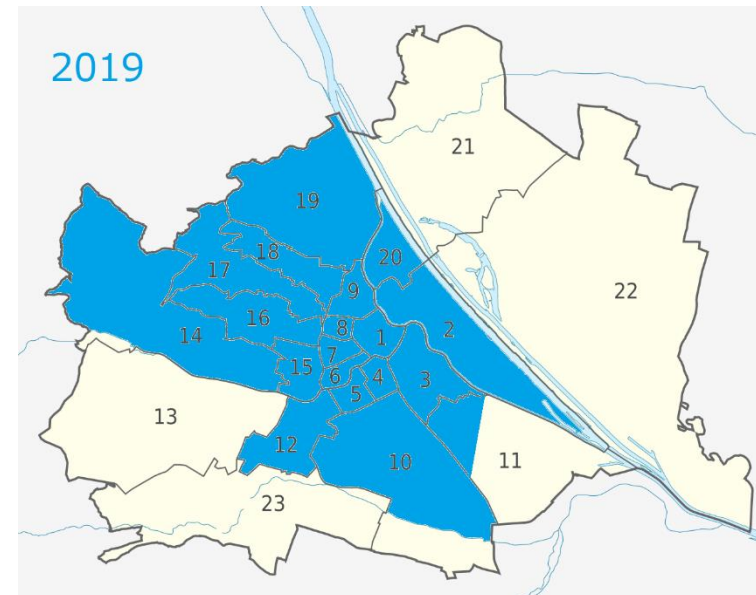
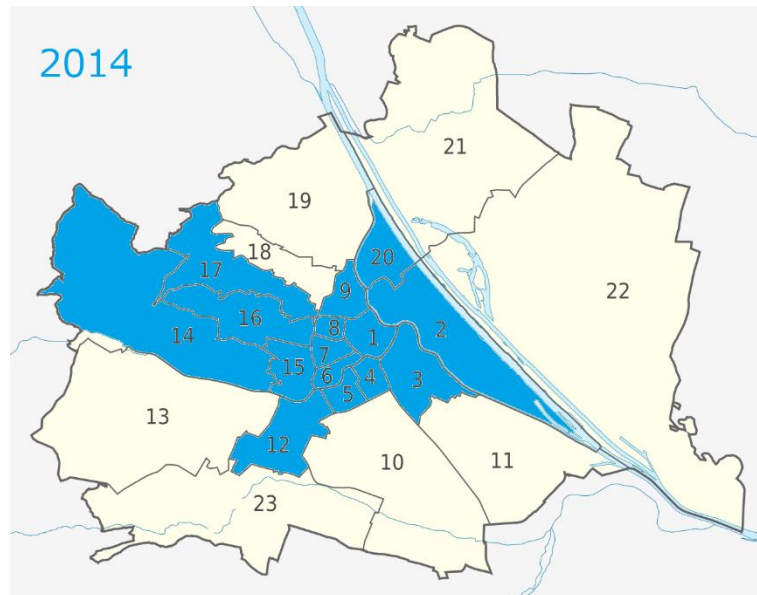
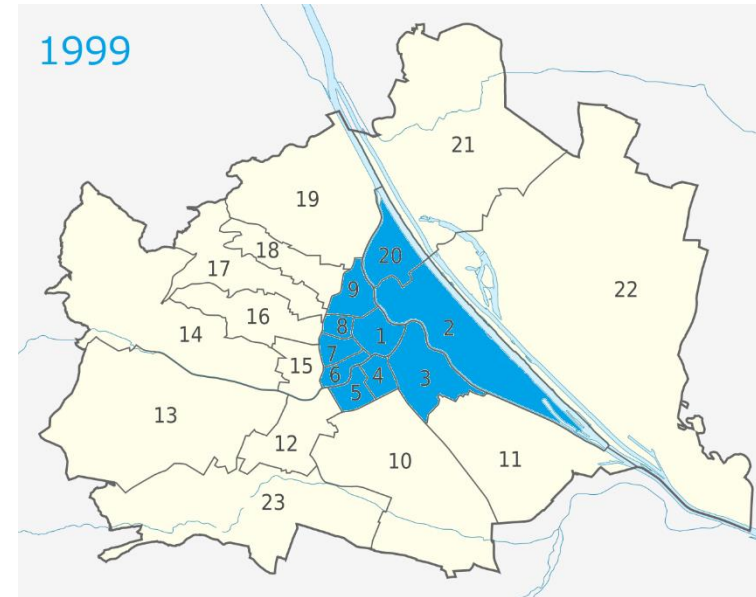
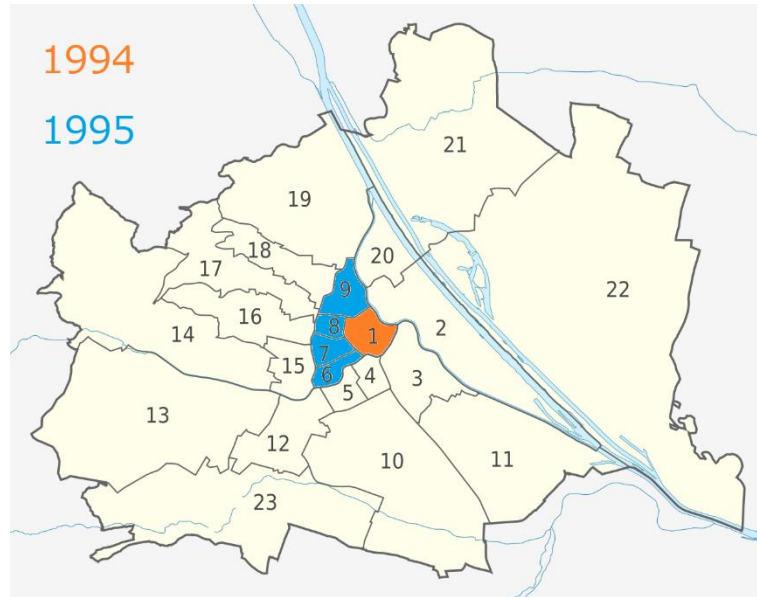


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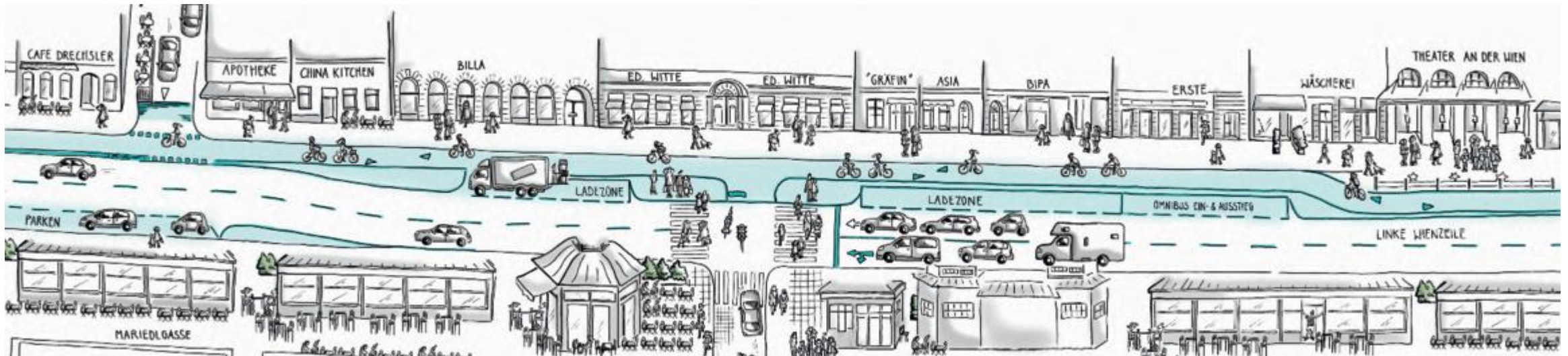
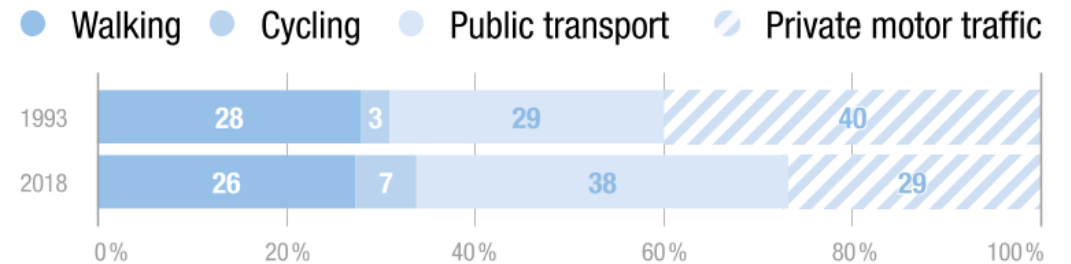
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# Parking ticket for on-street parking

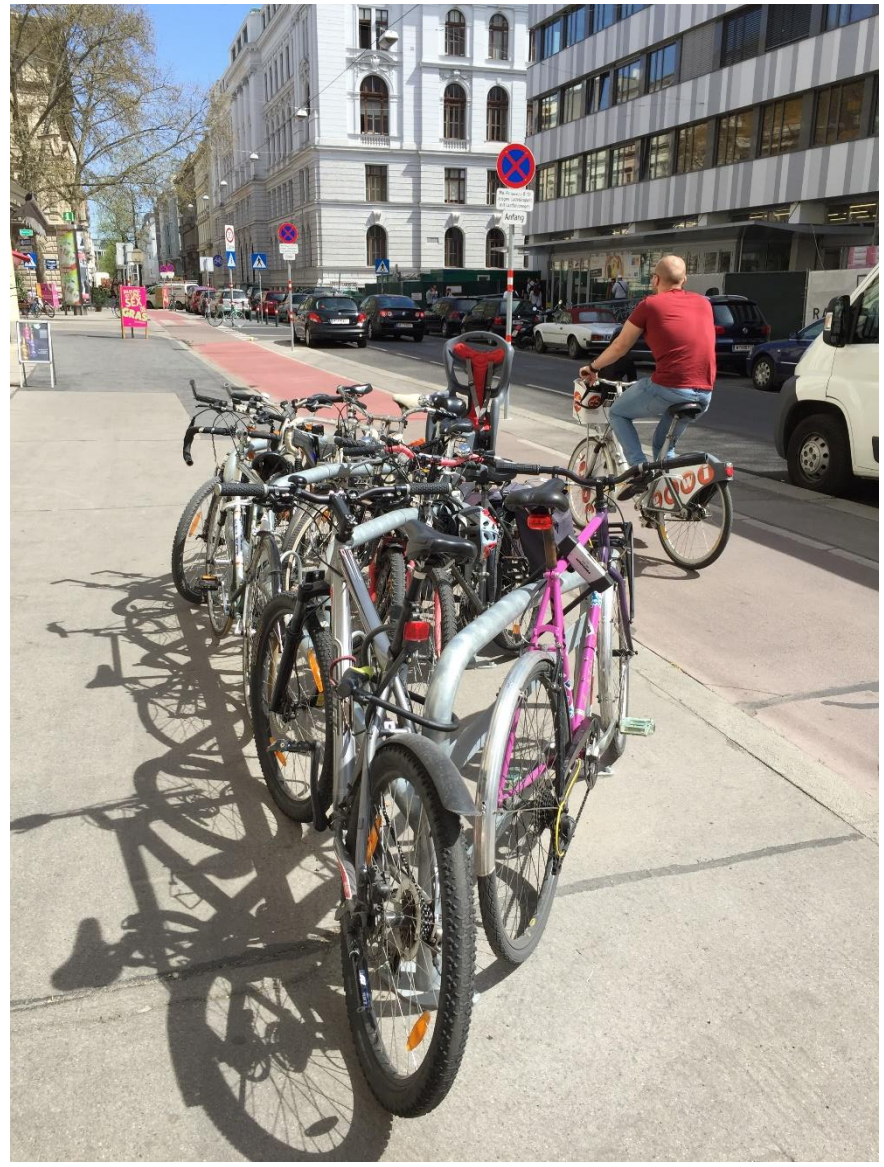


## Modal split

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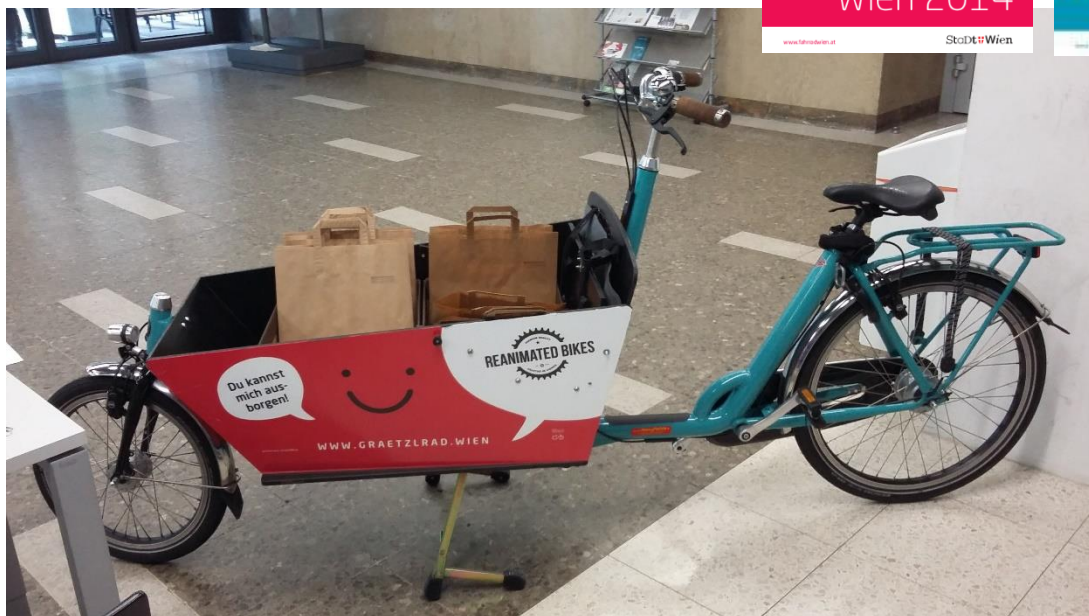
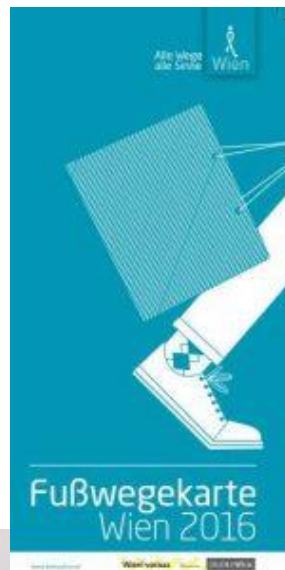
# Bike lane & parking







Logo, Map, Cargo-Bike, ...



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- **No single measure** can achieve the outcome goal (policy goal)
  - Transport system is complex!
  - **Rebound effect!**
  - **Planner's perception vs. user's perception**
- **Combination** of policy measures in different dimensions
  - **Push and Pull:** discouraging car use, encouraging walking, cycling and public transport
  - Different domains: **infrastructure, marketing, regulation, information, promotion**
  - **Long-term vs. Short-term** measures

End