Planning Wars

Lessons for City Planners

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GreenCityStreets.com

Lecture Rome

May 29, 2015

Planning Wars

- The Empire Strikes Back – Vienna
- A New Hope – Zurich
- The Phantom Menace – San Francisco
- Return of the Jedi – New York
- The Force Awakens – Information Technology

The Empire Strikes Back - Vienna

- Imperial Capitol - A city for 4 million people!
- A Capitol for the people – social democracy.
- Transport and housing in a social city.
- World’s most liveable city.

Vienna

Economy

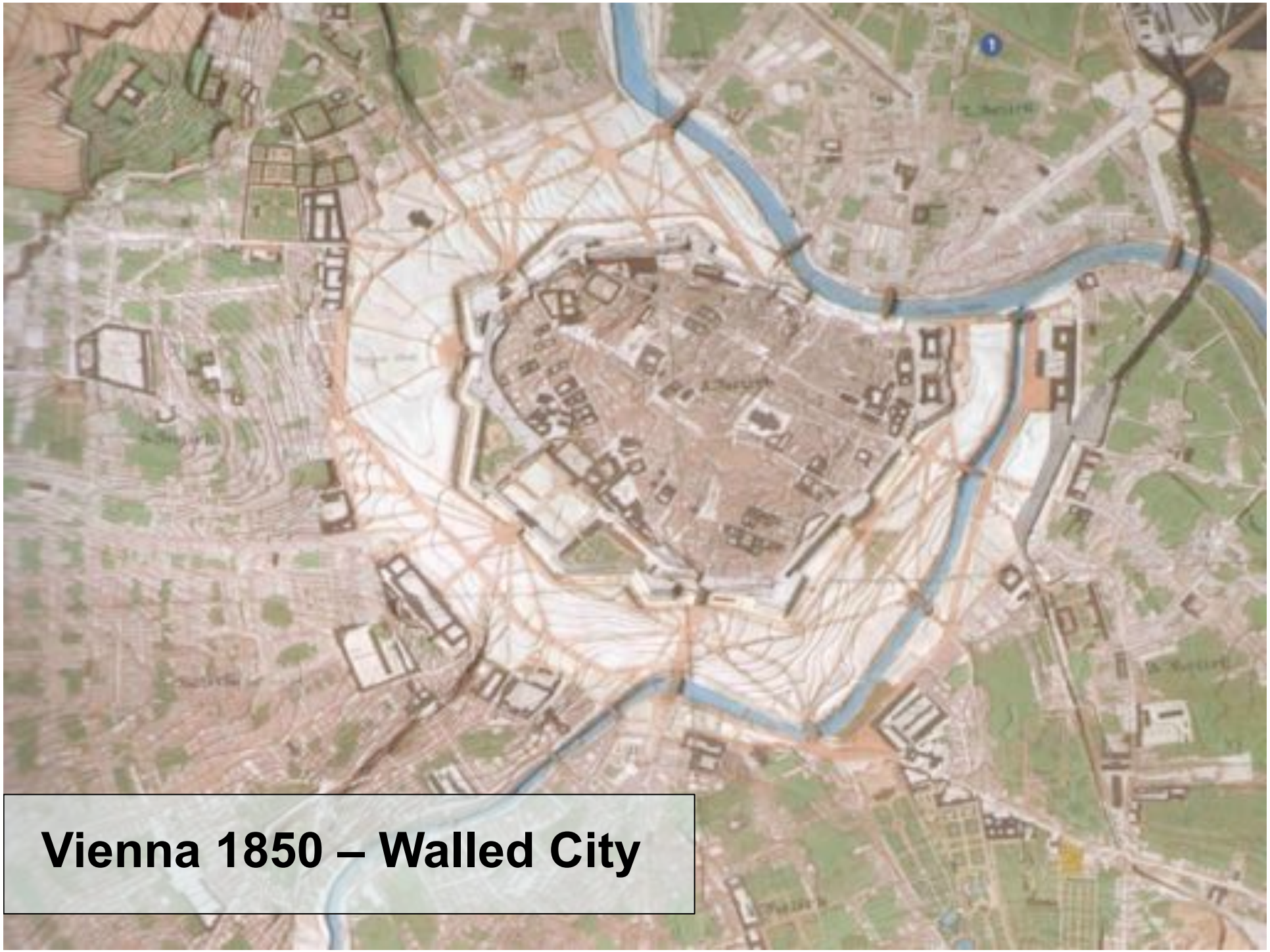
- Economic, cultural and government capital of Austria

Population

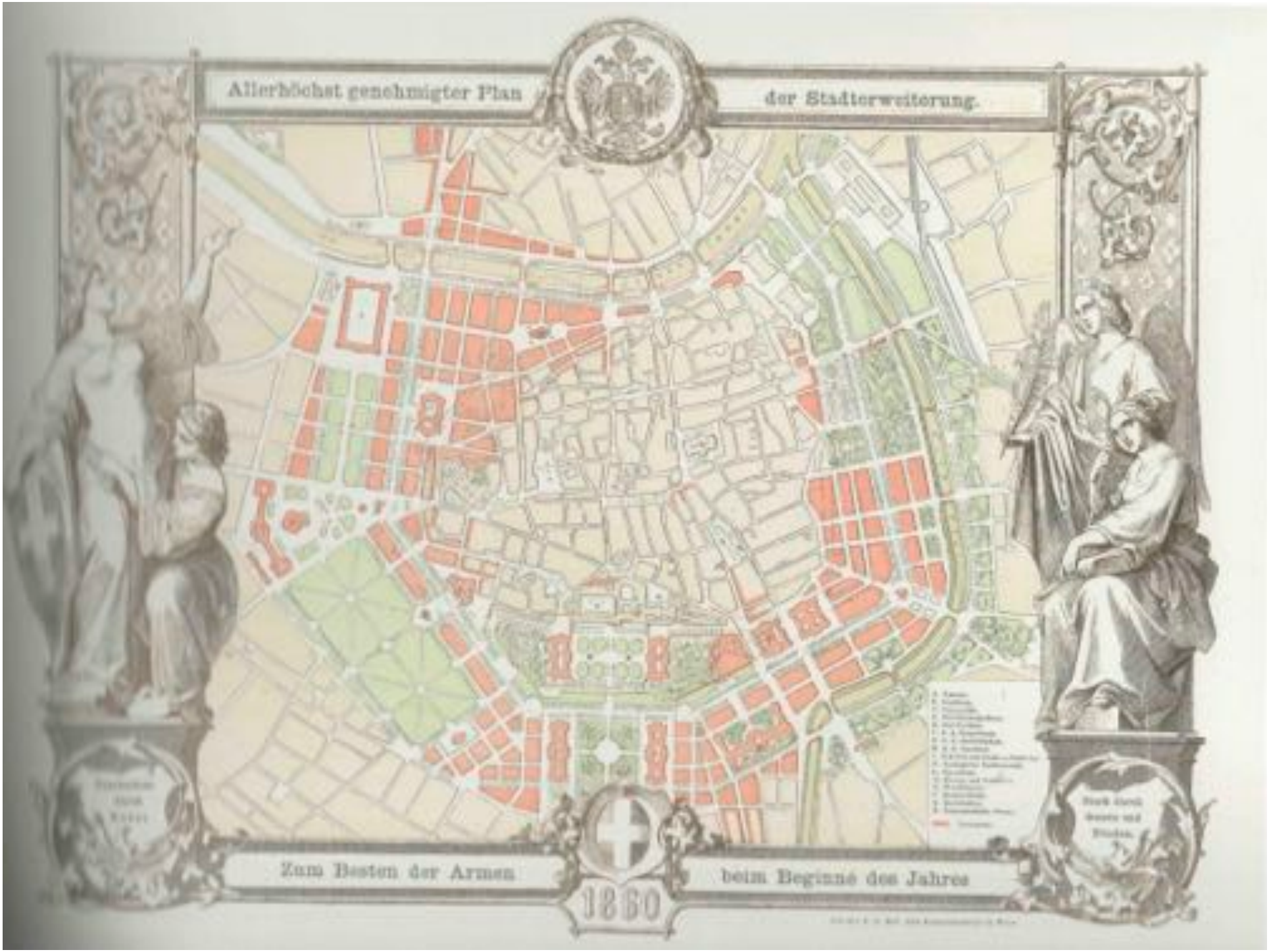
- City: 1.71 million (City Area 415 km2)
- Metropolitan area: 2.42 million

Transport

- Motorisation: 394 Cars / 1000 Inhabitants
- U-Bahn: 74 km (2010)
- Tram: 172 km (2010) – 74% exclusive lanes
- Bus: 622 km (2010) – 7.7% exclusive lanes
- Network bike routes: 1,206 km (most shared)



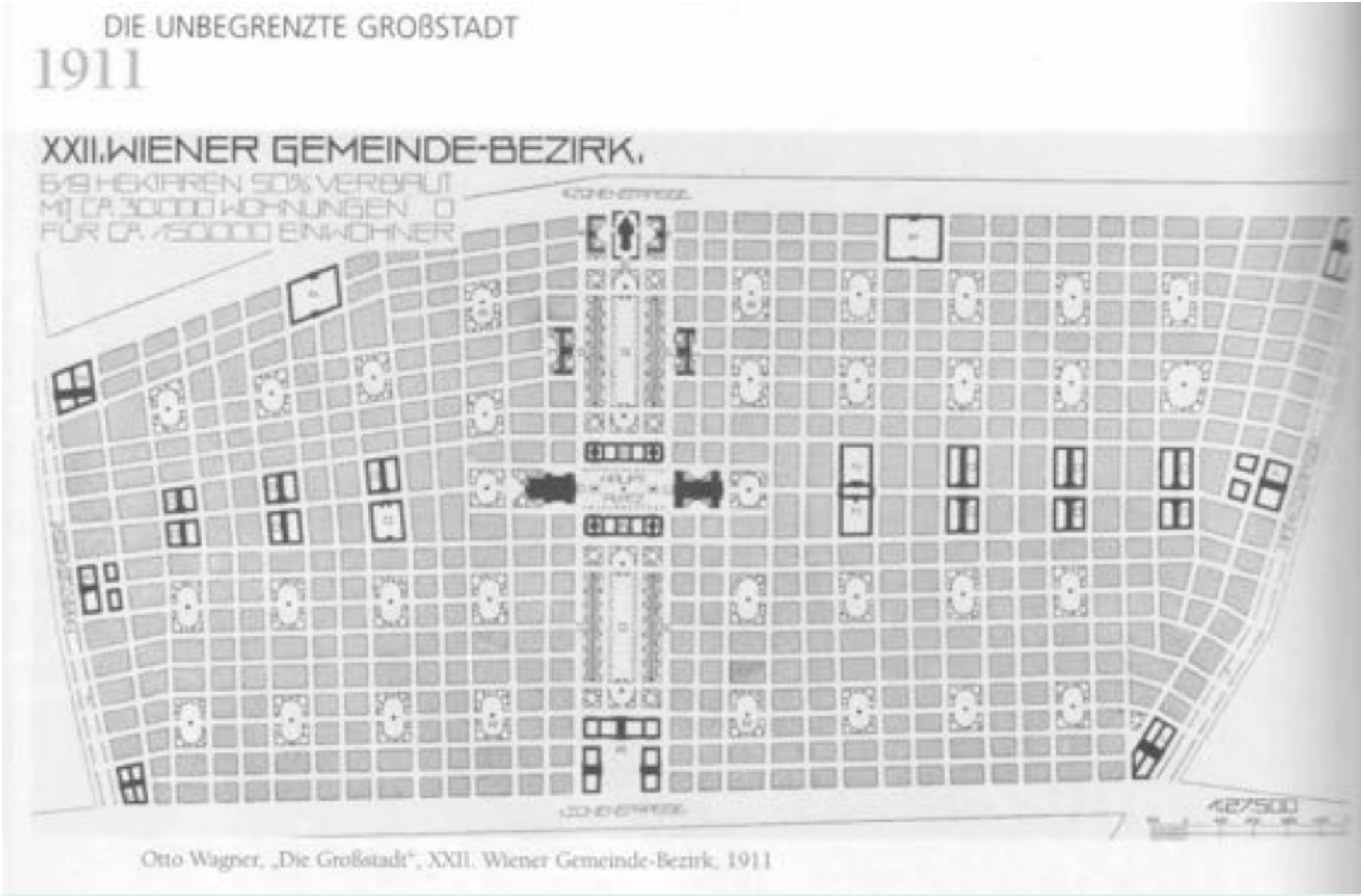
Vienna 1850 – Walled City


Allerhöchst genehmigter Plan
der Stadterweiterung.
Zum Besten der Armen
beim Beginne des Jahres
1860

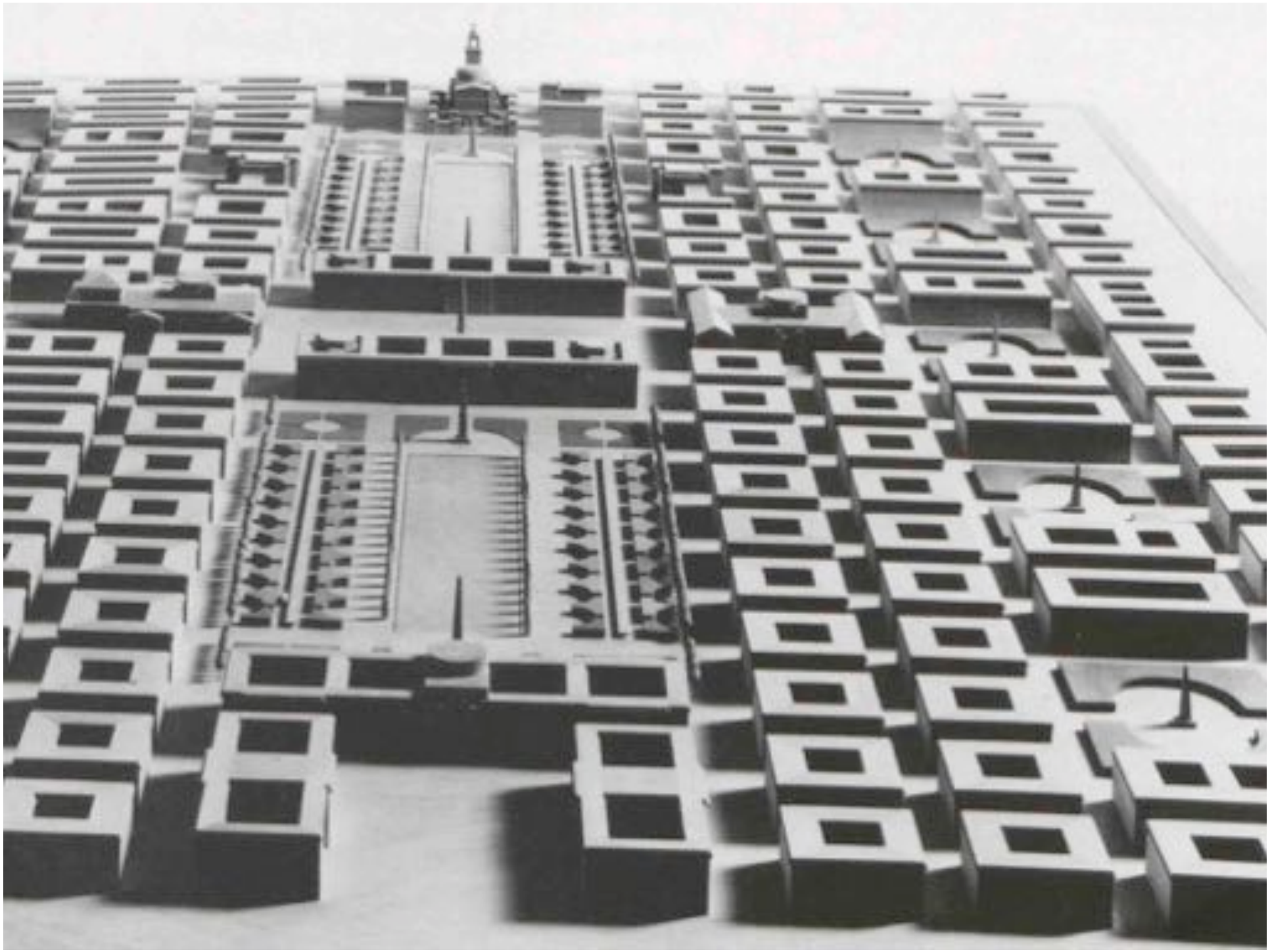
Vienna Ringstrasse Lessons

- Imperial power allowed huge and disruptive infrastructure project – compare:
  - Haussmann (Paris)
  - Sixtus (Rome)

- Financing and Organisation was critical
  - land sales financed public construction … agency lasted until 2000s and made a profit!



Otto Wagner's plan for a growing Vienna - 1911



Vienna: A city for 4 million people

- Grand plans: unrealised;
- Infrastructure projects: built
  - Flood control;
  - Water supply;
  - Railway and tram network;
  - Parks and Open Space;
- These (overbuilt) infrastructure projects are the foundation for Vienna's liveability today.

Rote Wien: Social Democracy

A city for the people

Post World War I

- Housing
- Social Programs
- Infrastructure

Rote Wien: Legacy

- Expectation of extremely high quality government services and programs:
  - Housing – over 225,000 apartments owned by the City of Vienna;
  - Public transport – world leader;
  - Culture – at all levels from world class to neighbourhood programs.
- Is it too expensive?

Example: Vienna Public Transport

A “brute force” approach to public transport:

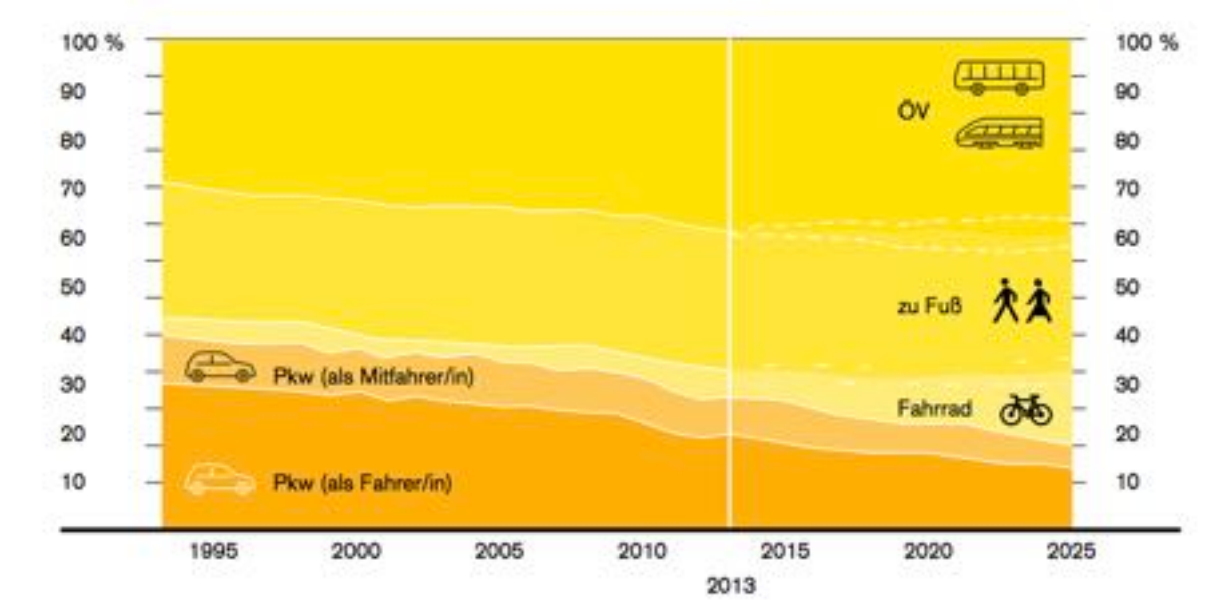
- U-Bahn
- Trams
- Sustainable transport
- Livable neighborhood planning

Excellent policies, but difficult to implement politically.

Vienna: Transport statistics

Mode Split Goal:

75% Sustainable Transport by 2020.



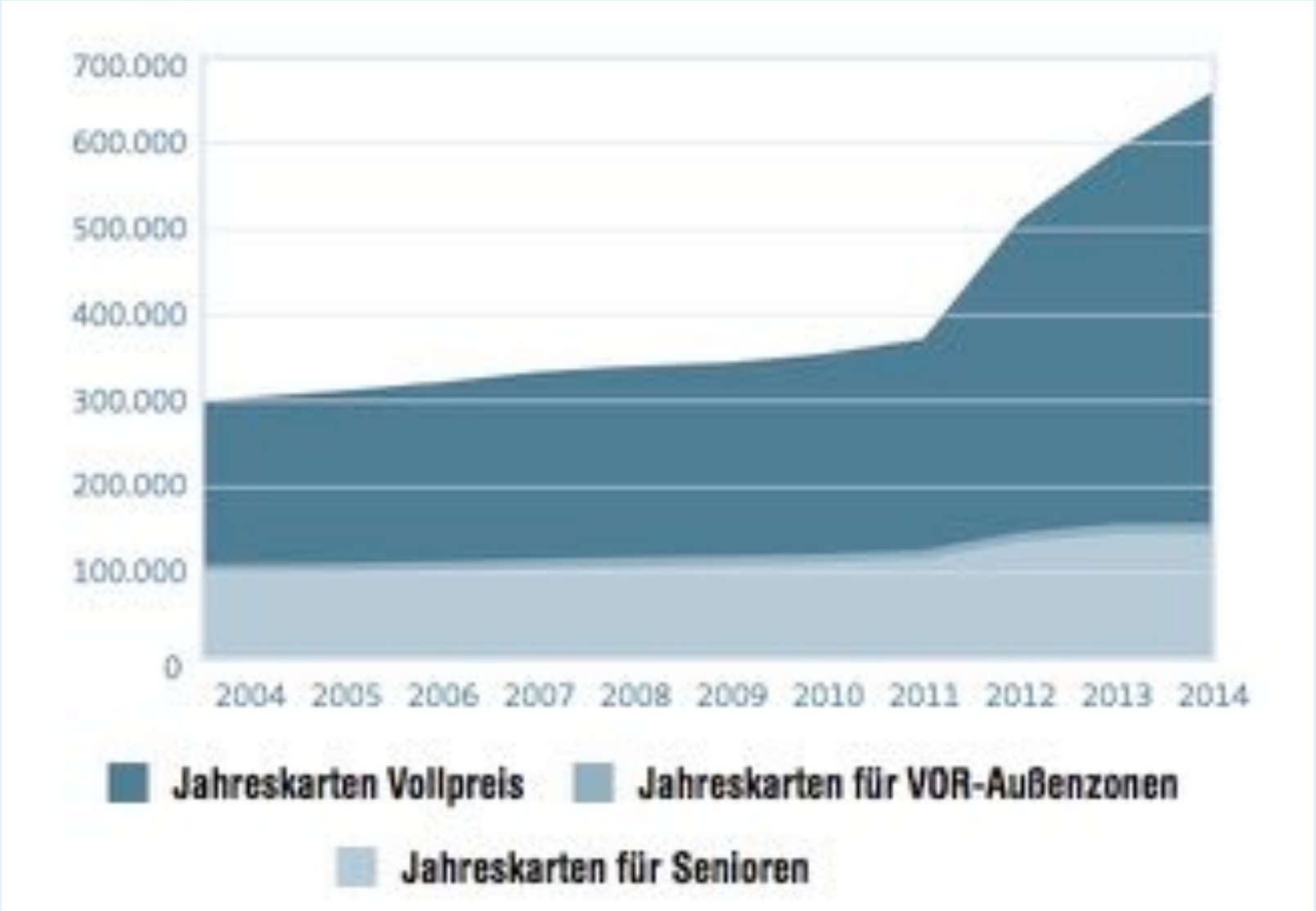
Public transport trips per day: … 2.5 million

PT Trip mode: … 64% U-Bahn, 22% Tram, 14% Bus

Annual PT trips per resident: … 530

Number of yearly passes sold: … 650,000

Vienna: public transport annual tickets



Vienna: Regional public transport network

Karlsplatz Stadtsbahn Station by Otto Wagner.

Vienna U-Bahn

- U-Bahn is most important part of Vienna PT system.
- Joint City-Federal funding and planning.
- Many sections are built on historic railway lines.

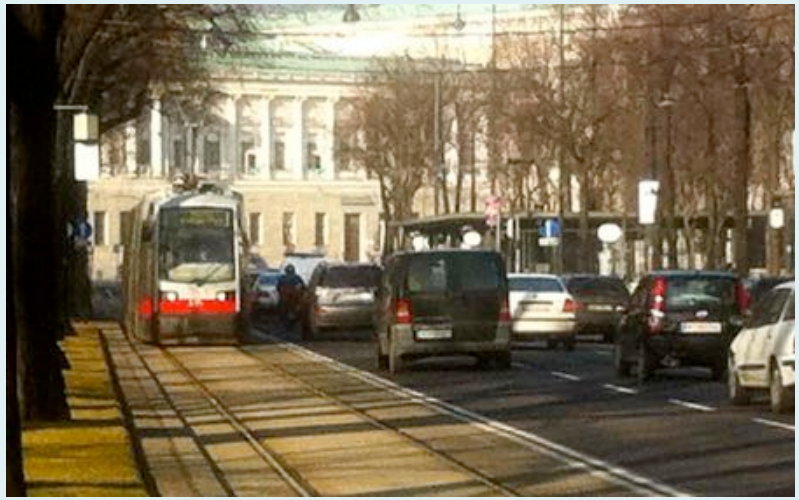
Vienna: U-Bahn

ETWAS UNPRAKTISCHES
KANN NIE SCHÖN SEIN.
WHAT IS IMPRACTICAL
CAN NEVER BE BEAUTIFUL.
OTTO WAGNER

Vienna Trams

- Historic network (not replaced by buses).
- Interchange stations on Ring and exclusive ROW.
- New tram line extensions.

Vienna: Trams



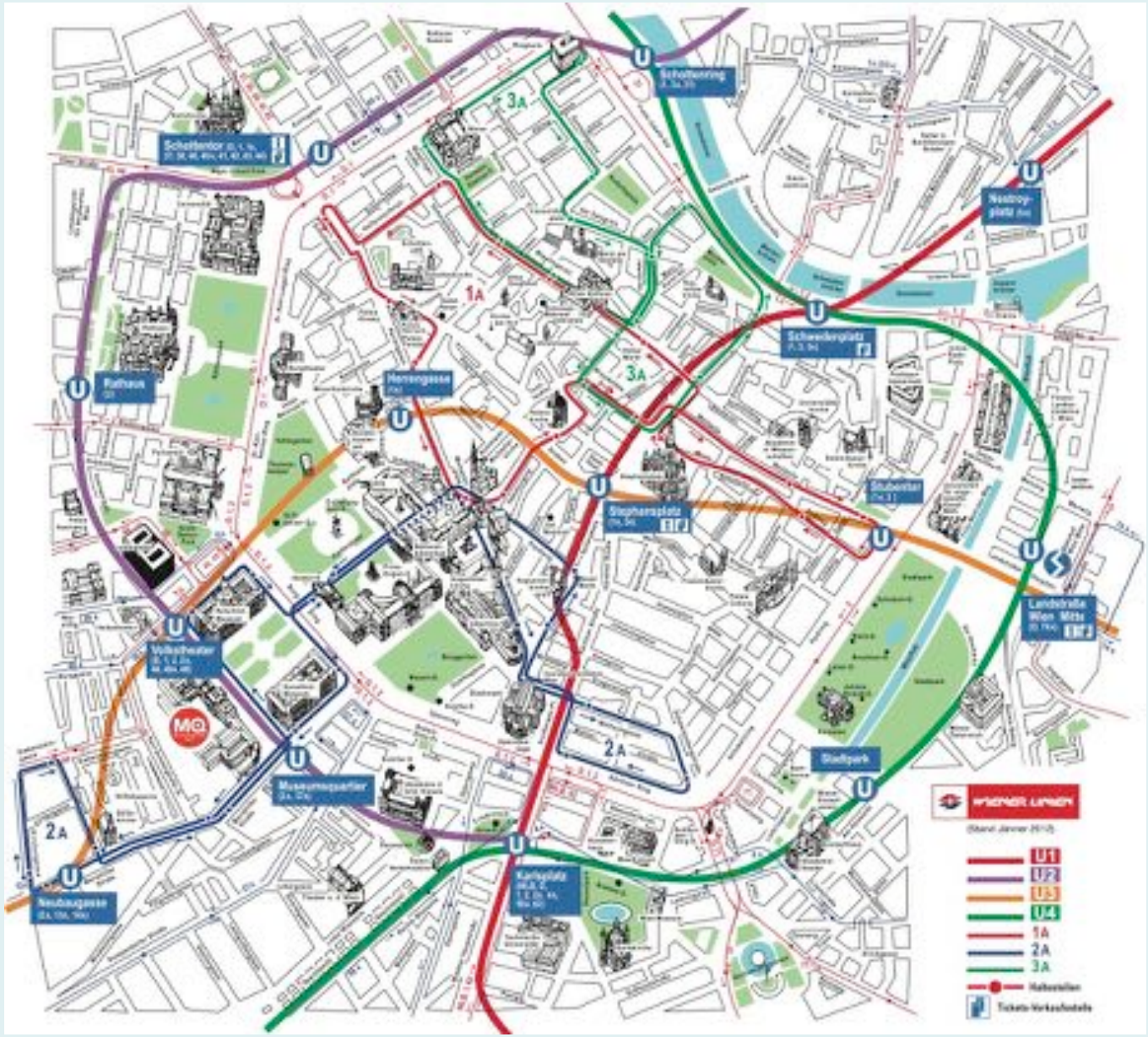
Contra-flow lane on the Ring

Shottentor transfer station

Ultra Low Floor (ULF) Tram

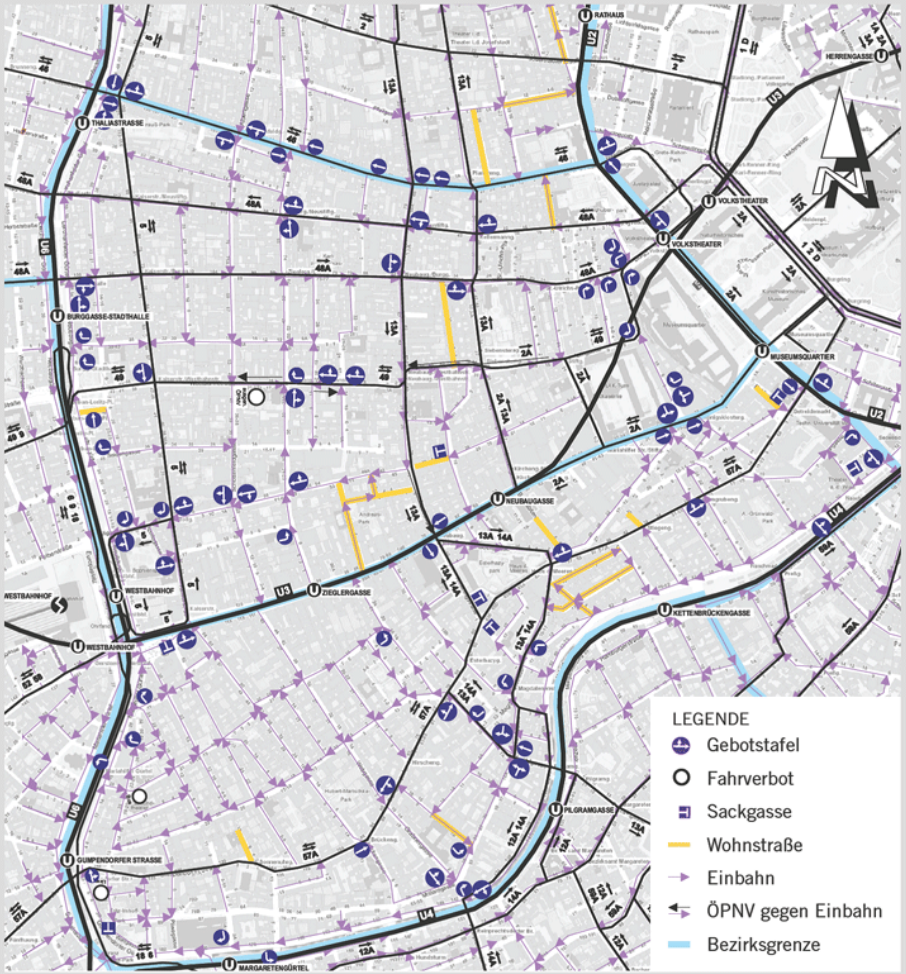
Tram/bus exclusive lane

Vienna: City center public transport



Neighborhood traffic regulations

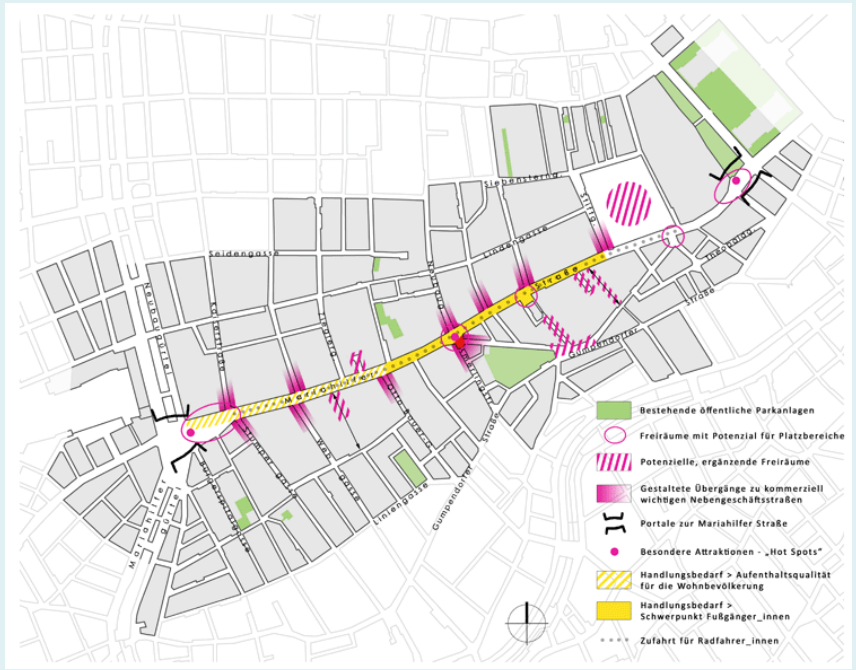
Traffic regulations used to provide priority for public transport and create livable neighborhoods.



Quelle: Stadtplan Wien, ViennaGIS

ohne Nachtbuslinien im Untersuchungsgebiet

Public participation: Mariahilfestrasse



HUSSEL

Beckenhof
Sonnegg-
str.
Vogelsangstr.
Stampfenbach-
platz
Winkel-
riedstr.
Spyriplatz
Bethanie
Haldenegg
Halden-
bach
Hinter-
bergstr.
Bahnhofqual|HB
Central
Bahnhofplatz|HB
Löwenplatz
Kanonen-
gasse
Kirche
Fluntern
ETH|
Universitäts-
spital
Polyterrasse
Polybahn
Sihlpost
Bahnhof-
str.|HB
Neumarkt
Hofstr.
Voltastr.
Platte
Rennweg
Limmatquai
Rudolf-
Brun-Brücke
Kantonsschule
Römerhof
Werd
Sihlstr.
Kunsthaus
Rathaus
Hottingerplatz
Storchen
Helmhaus
Sprecher
str.
Bahnhof
Wiedikon
Bahnhof
Selnau
Paradeplatz
Englisch-
viertelstr.
Bahnhof
Stadelhofen
Börsenstr.
Brand-
schenkestr.
Stockerstr.
Sigmaustr.
Hürlimann-
platz
Tunnelstr.
Opern-
haus
Kreuzplatz
Hegibach-
platz
Bellevue
Freiestr.

A New Hope - Zurich

- Initiatives and public participation.
- A systematic approach for increasing public transport efficiency:
  - Public transport priority
  - S-Bahn regional rail system (commuter rail)
  - Coordinated ticketing and schedules
  - Sustainable mobility program
  - Low cost and high economic benefit
- World’s most livable city.

Zurich

Economy

- **Generates 20% of Switzerland's GDP**

Population

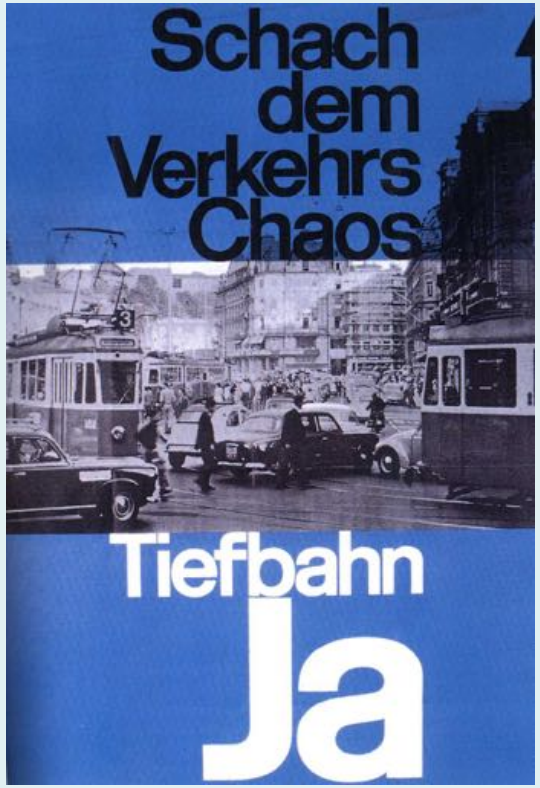
- **City: 378,000**
- **Metropolitan area: 1.68 million**
- **Greater Zurich Area: 3.2 million**
- **City Area: 91.9 km2**

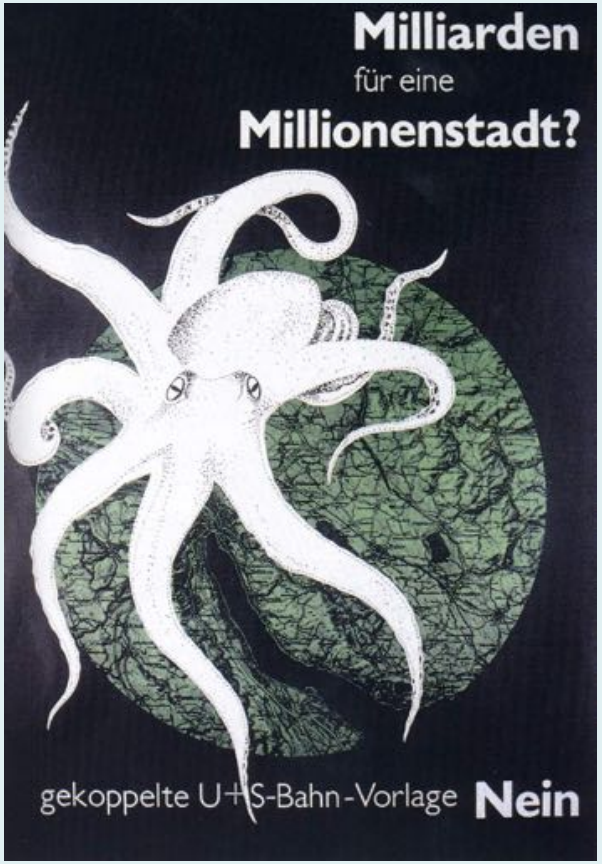
Transport

- **Motorisation: 376 Cars / 1000 Inhabitants**
- **Public transport network: 288 km**
- **Street network: 740 km**
- **Bike route network: 340 km**
- **Parking: public ground 51,000 ... private 220,000**

Zurich: Public transport stuck in traffic

What's to do?





Direct Democracy: Ballot Initiatives

- Tiefbahn (underground trams) – Defeated 1962
- U-Bahn/S-Bahn construction – Defeated 1973
- People's initiative for public transport – Approved 1977
- S-Bahn and ZVV (coordinating agency) – Approved 1981

The Zurich Model: *Public transport priority implemented systematically throughout the network.*

Exclusive public transport lanes

Signal priority – innovative approach

Incident management / control centre

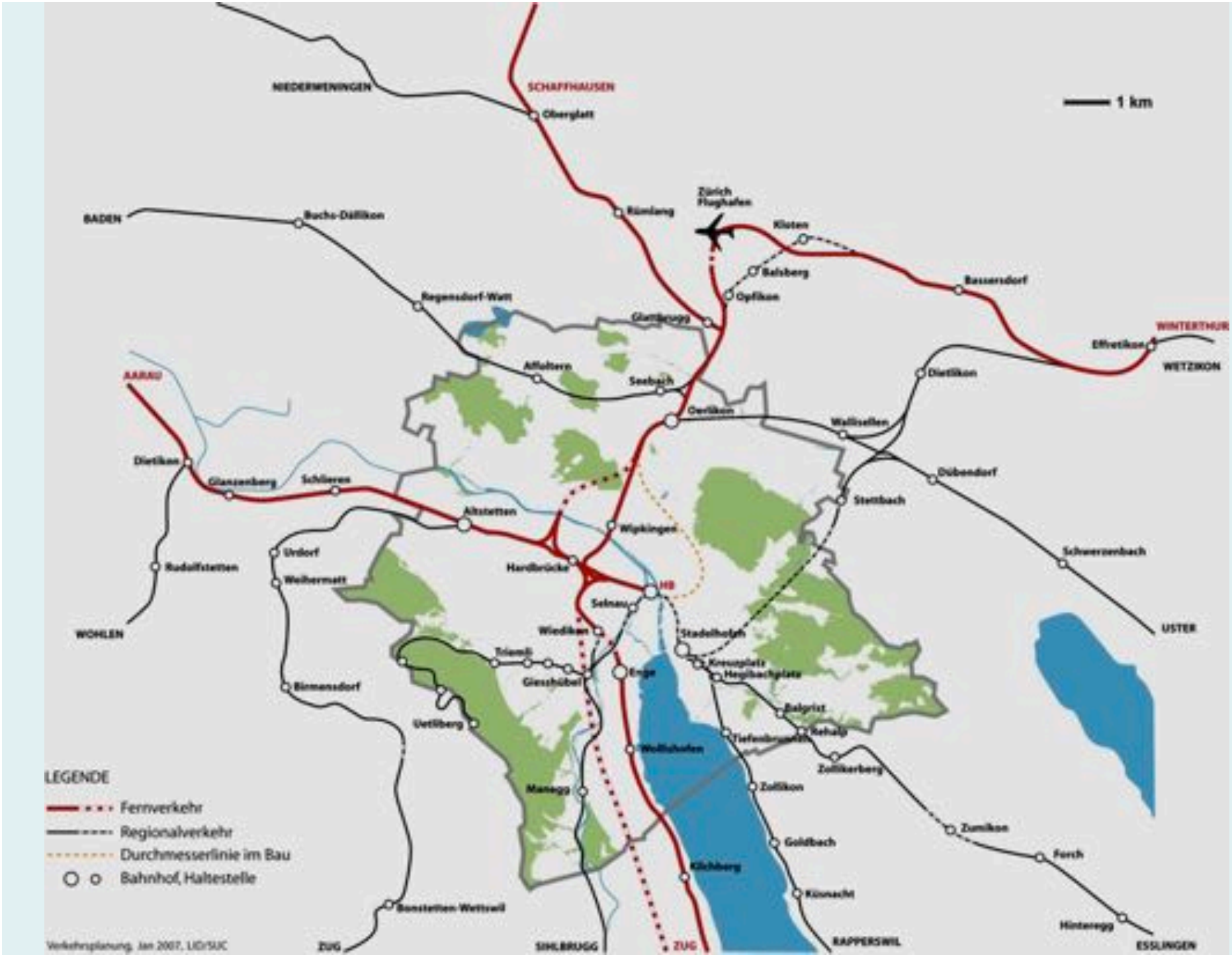
Results:

- Faster travel times
- Improved reliability
- Increased patronage
- Reduced costs

Regional Rail Network (S-Bahn)

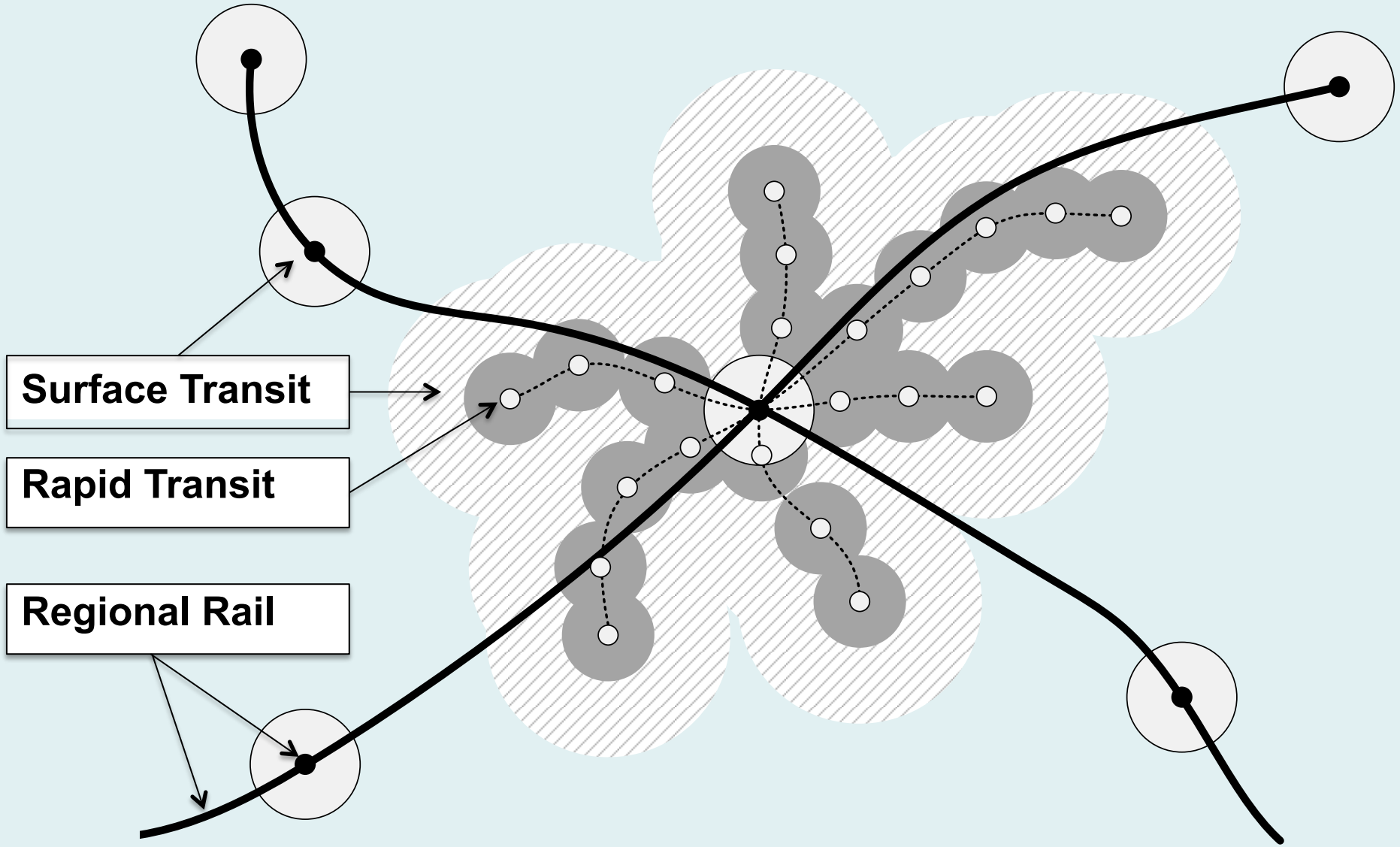
- Opened in 1990
- Cost 2 billion CHF
- 420 km network
- 26 lines, 176 stops
- 950 trains per day
- Express & local trains
- 380,000 pass/day (city line)
- Ridership up 143% since 1990.
- System being expanded.
- Key problem: railway capacity.

Photo: © SBB

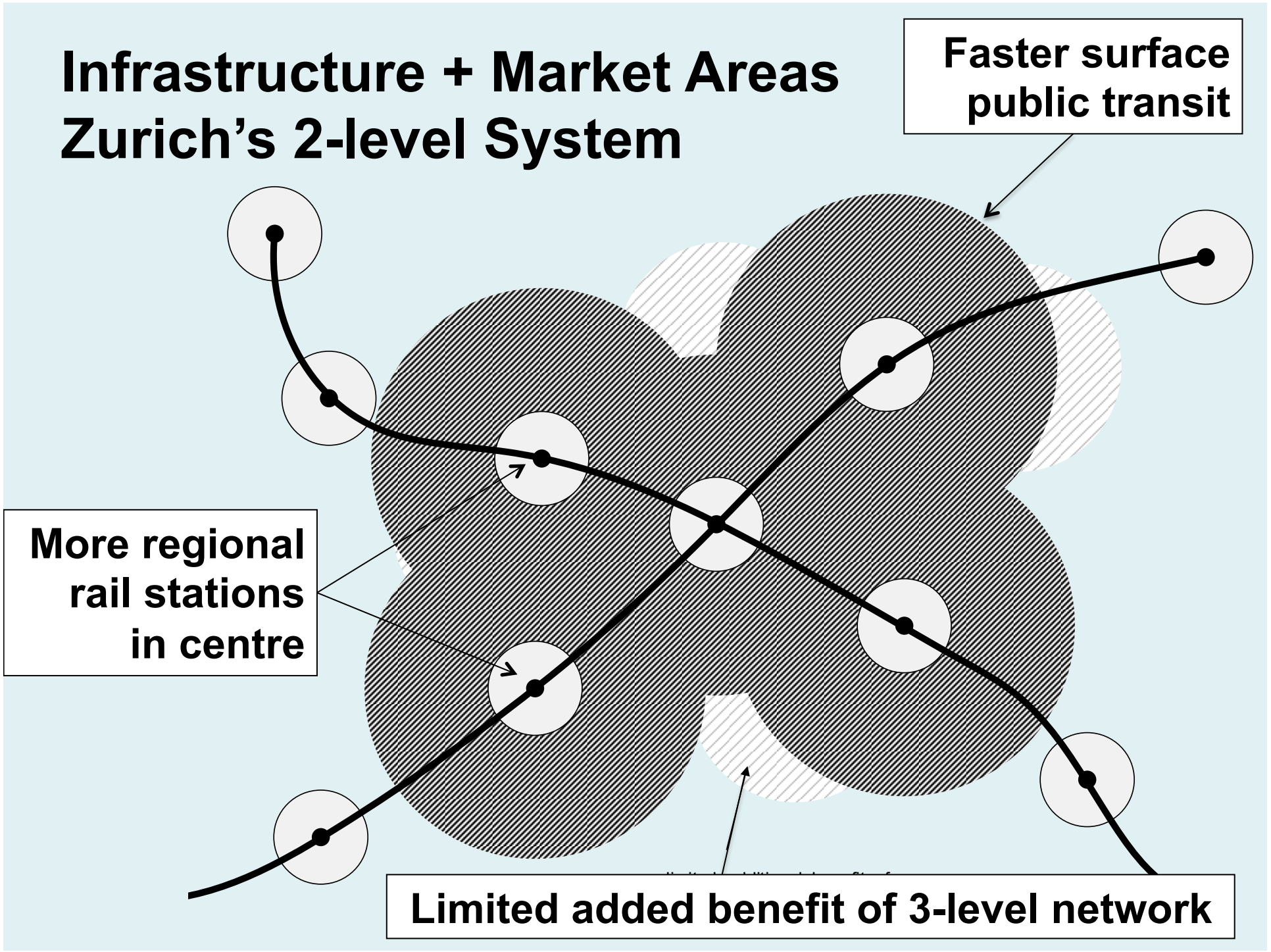


1 km
NIEDERMENINGEN
SCHAFFHAUSEN
Oberglatt
Rümlang
Zürich Flughafen
Kloten
Balsberg
Opfikon
Bassersdorf
BADEN
Buchs-Dällikon
Regensdorf-Watt
Glattbrugg
WINTERTHUR
Effretikon
WETZIKON
Affoltern
Seebach
Dietlikon
AARAU
Oerlikon
Wallisellen
Dietikon
Glanzenberg
Schlieren
Dübendorf
Stettbach
Altstetten
Wipkingen
Urdorf
Rudolfstetten
Weihermatt
Hardbrücke
Schwerzenbach
HB
Selnau
WOHLEN
Wiedikon
Stadelhofen
USTER
Triemli
Kreuzplatz
Heuibachplatz
Giesshübel
Enge
Birmensdorf
Balgrist
Uetliberg
Rehalp
Tiefenbrunnen
Wollishofen
Zollikerberg
LEGENDE
Fernverkehr
Regionalverkehr
Durchmesserlinie im Bau
Bahnhof, Haltestelle
Manegg
Zollikon
Zumikon
Goldbach
Forch
Kilchberg
Küsnacht
Bonstetten-Wettswil
Hinteregg
Verkehrsplanung, Jan 2007, LID/SUC
ZUG
SIHLBRUGG
ZUG
RAPPERSWIL
ESSLINGEN

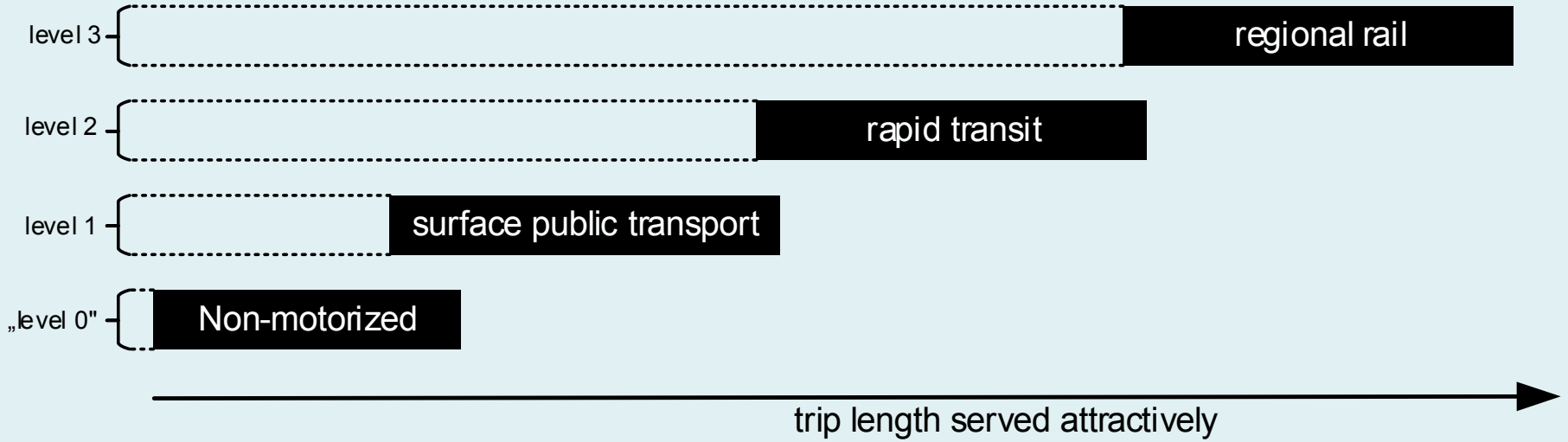
Infrastructure + Market Areas:
Traditional public transport: 3-level system

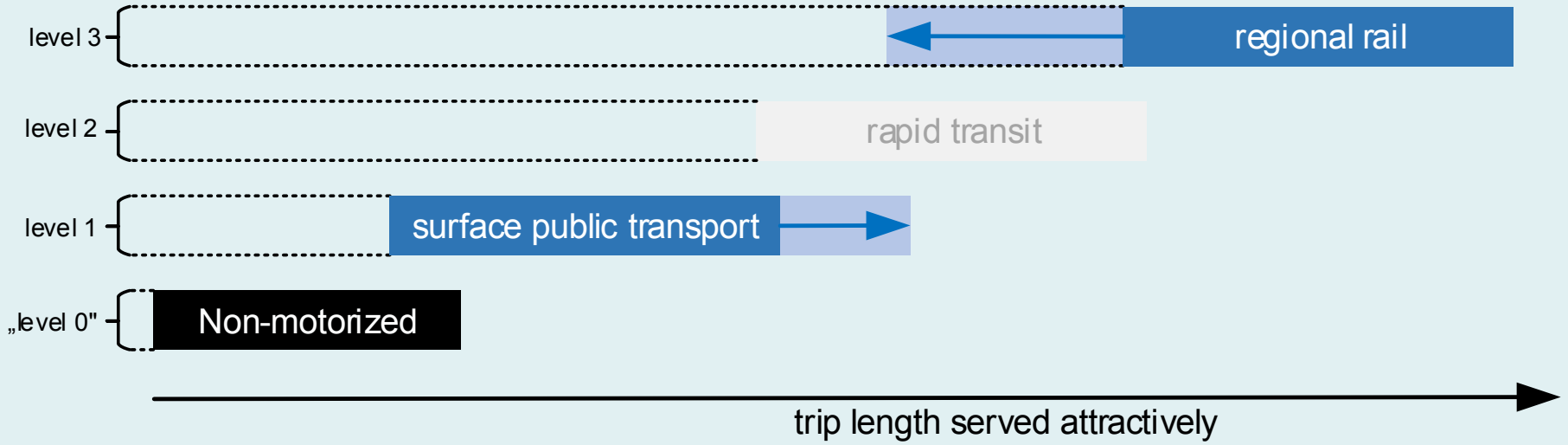


Infrastructure + Market Areas
Zurich's 2-level System



Functional Coverage Diagram: 3 vs. 2-level system



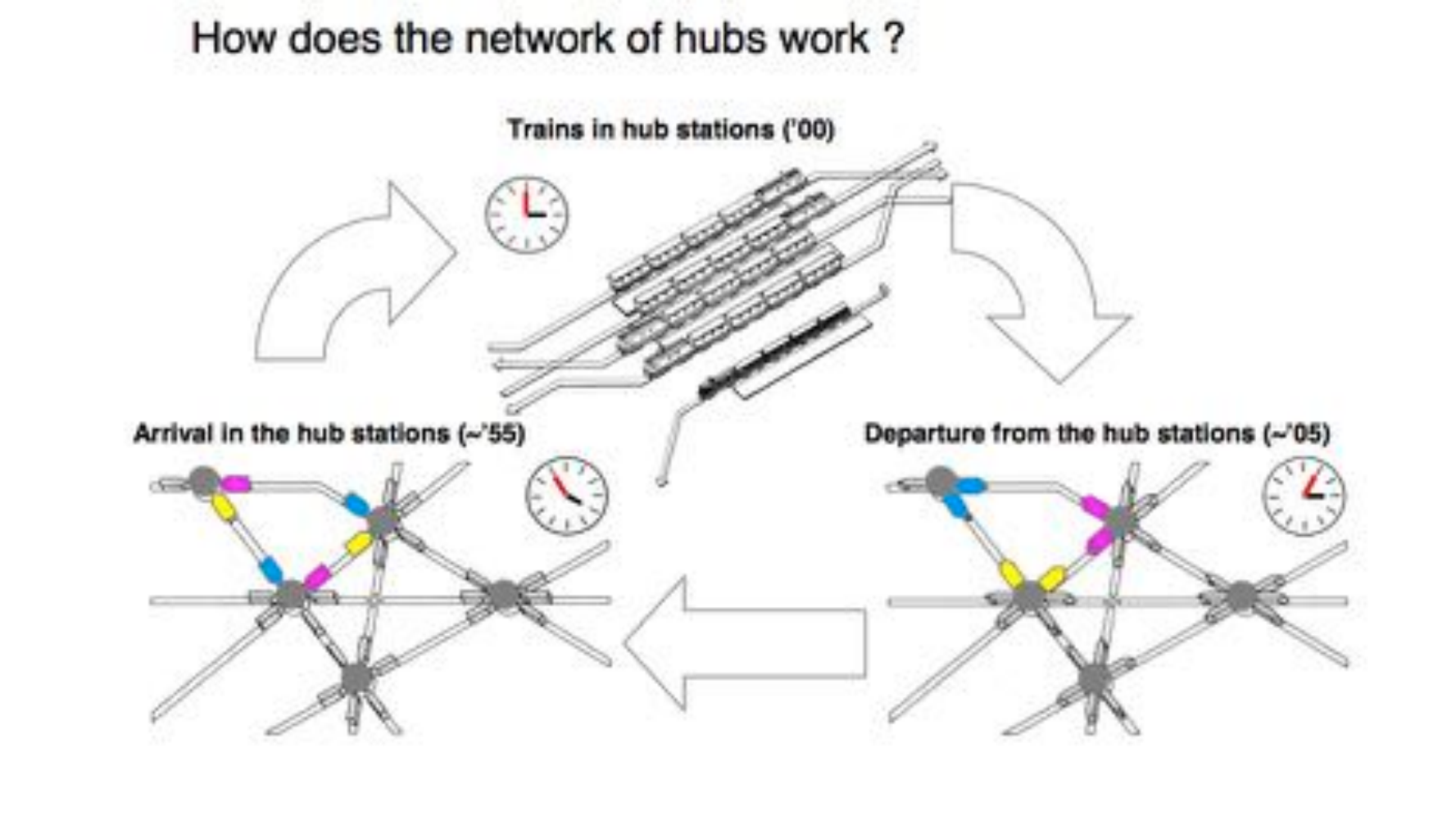


Source: ZVV

Public Transport Coordination in Switzerland

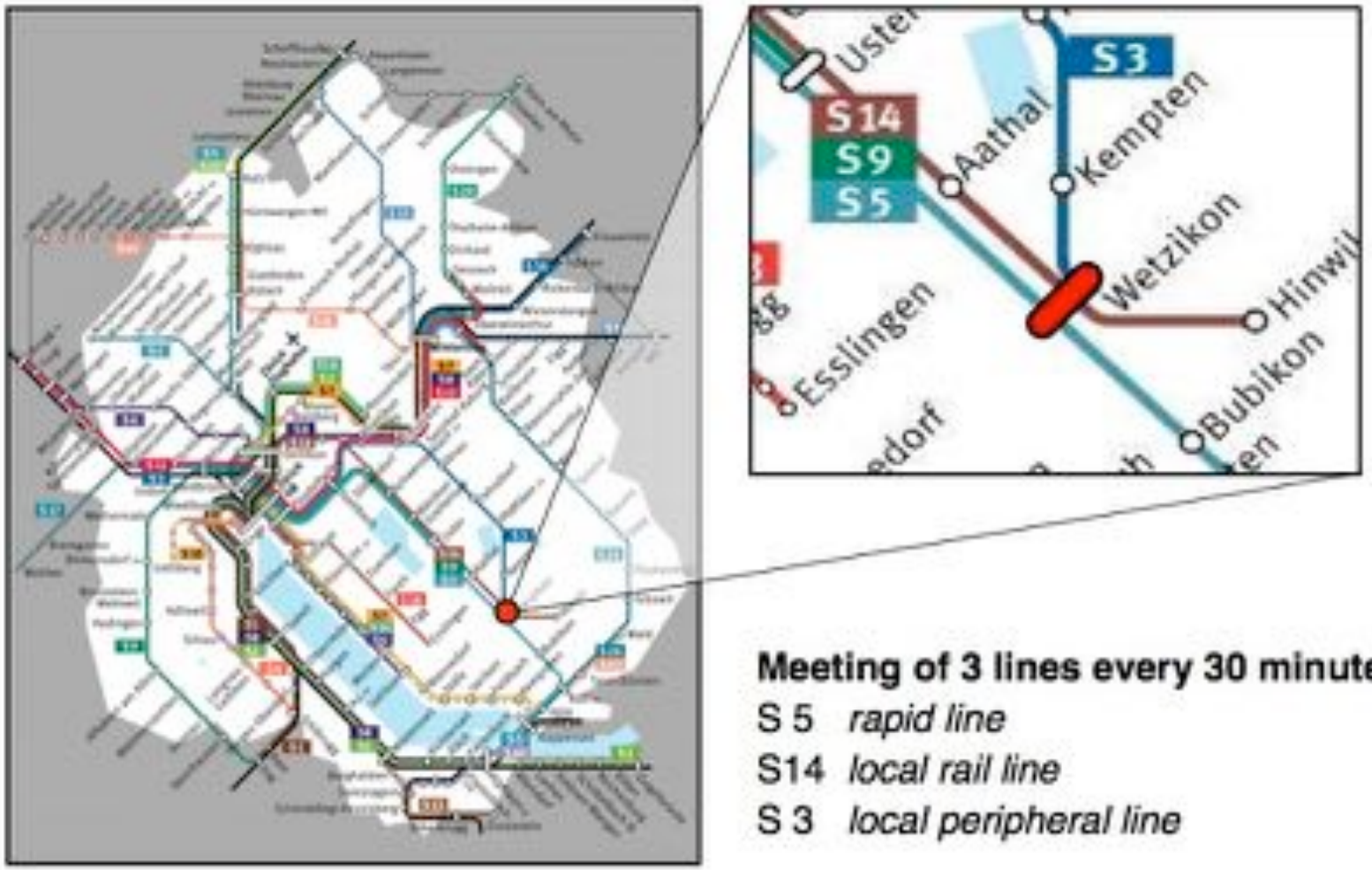
- Coordinated **fares and common tickets**
- Coordinated **schedules**
- Coordinated **interchange locations**

Coordinated Schedules (Taktfahrplan)



Source: SMA + Partner

Regional hub example: Wetzikon (rail)



Meeting of 3 lines every 30 minutes :

S 5 *rapid line*

S14 *local rail line*

S 3 *local peripheral line*

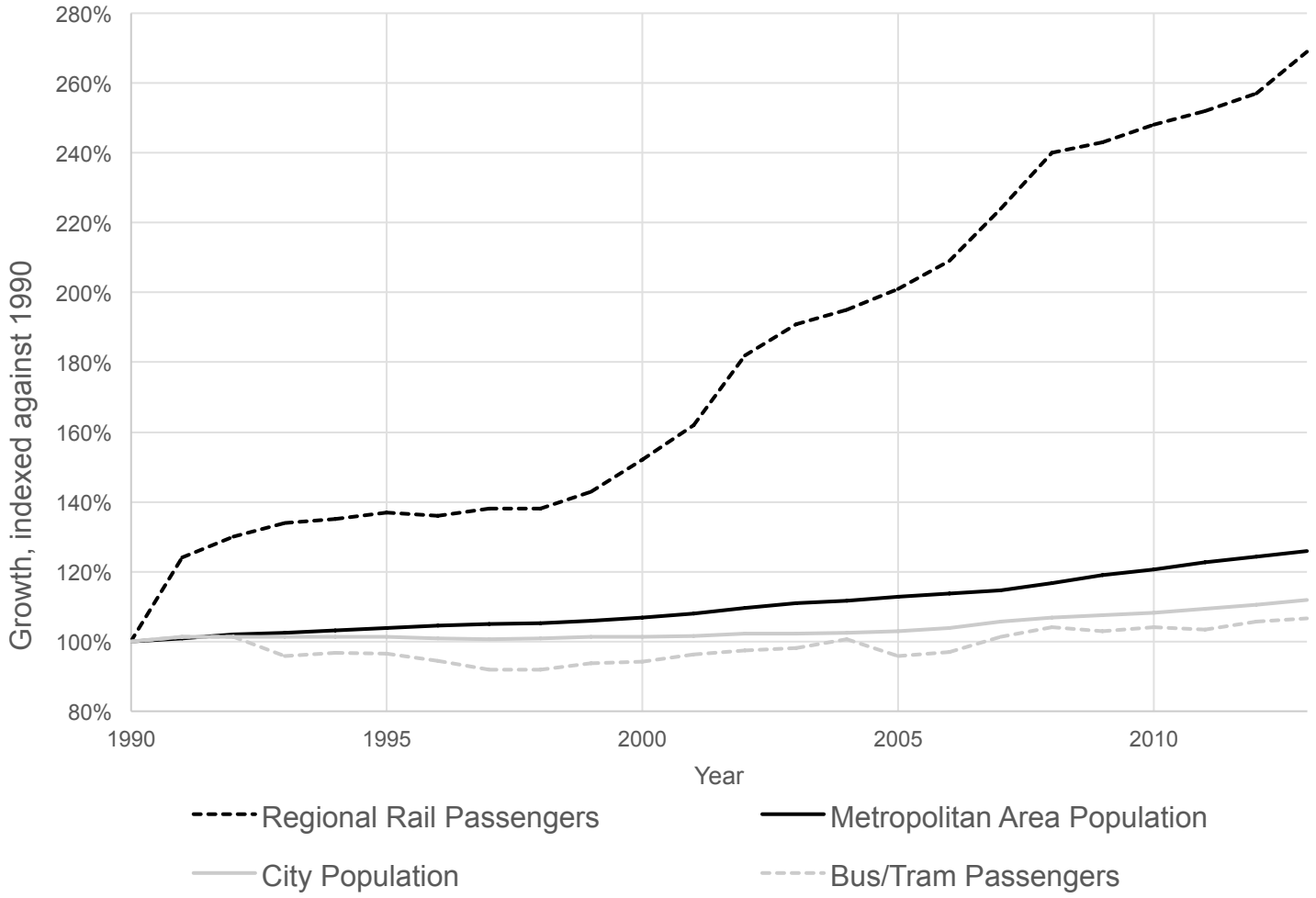
Regional hub example: Wetzikon (bus)

Many local and regional connecting bus lines

sma

6012 | Swiss Railway Network E | 2-00 | 21.02.12 | ec, ule

Zurich: PT ridership vs. population

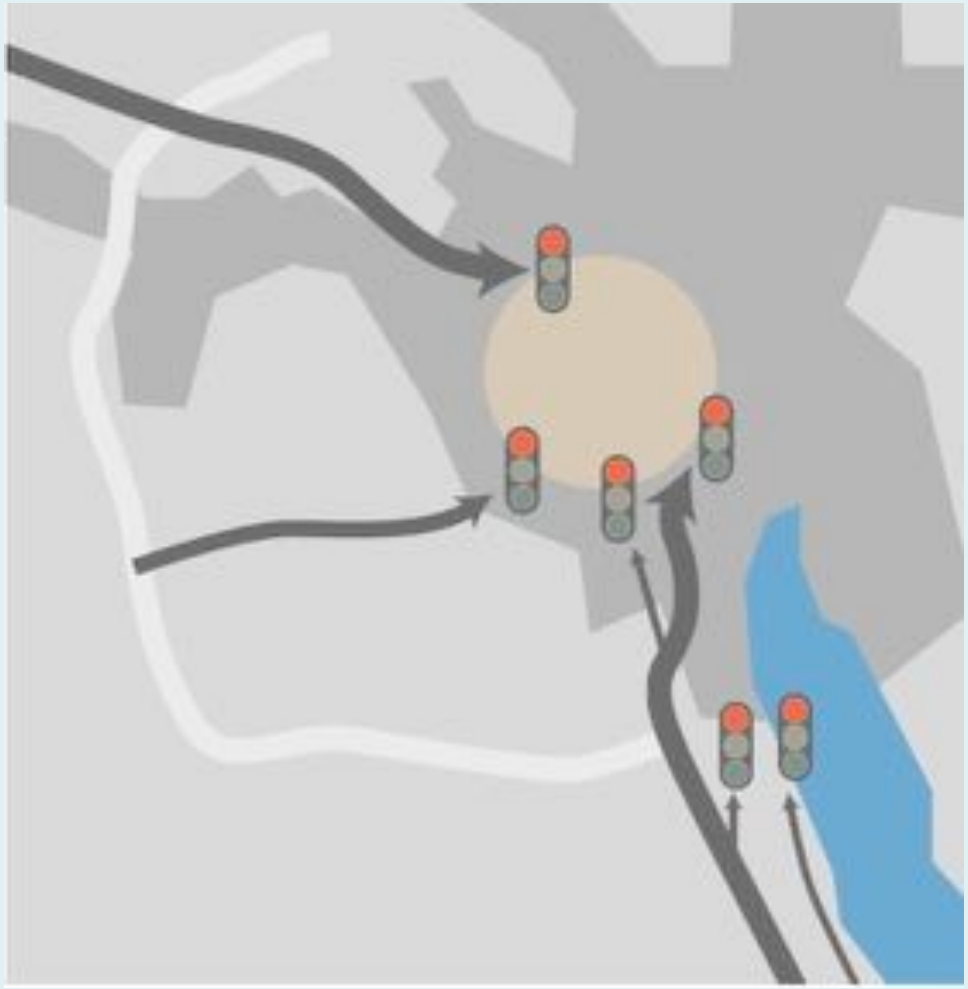


Zurich's sustainable mobility program

- Promote public transport
- Reduce and regulate parking
- Reduce private automobile traffic
- Improve conditions for pedestrians and bikes
- Develop ways to co-exist (shared space)
- Repair urban damage (freeway tunnels)
- Promote sustainable transport (behavior change)
- Network and share information with other cities

Reduce auto traffic: control traffic flow

- Traffic signals used to control how much traffic enters the city.
- Less traffic reduces congestion for public transport.
- Like ramp metering for the whole city, makes all traffic flow more efficiently.



Advertisement: parking control officers!

Equal Opportunity Humor

Dear ladies: there are still men, who are on-time, gallantly open the door for you and will "un-aggressively" bring you home afterwards.

Zurich Lessons

- Public support is critical (U-Bahn initiative)
- Residents have good ideas (prioritization)
- Street space must be allocated
- Efficiency can work (high quality PT)
- Coordination can be implemented
- Clever ideas beat infrastructure (PT Priority and S-Bahn)

The fight continues …

Congestion in Zurich

- Increased travel times
- Lower reliability
- Higher costs

Centre city delays have added 32,000 hours/year to travel time and increased operating costs by CHF 8 million.

The Phantom Menace – San Francisco

- **Congestion!**

San Francisco

Economy

- **Creative & economic centre of information technology worldwide.**

Population

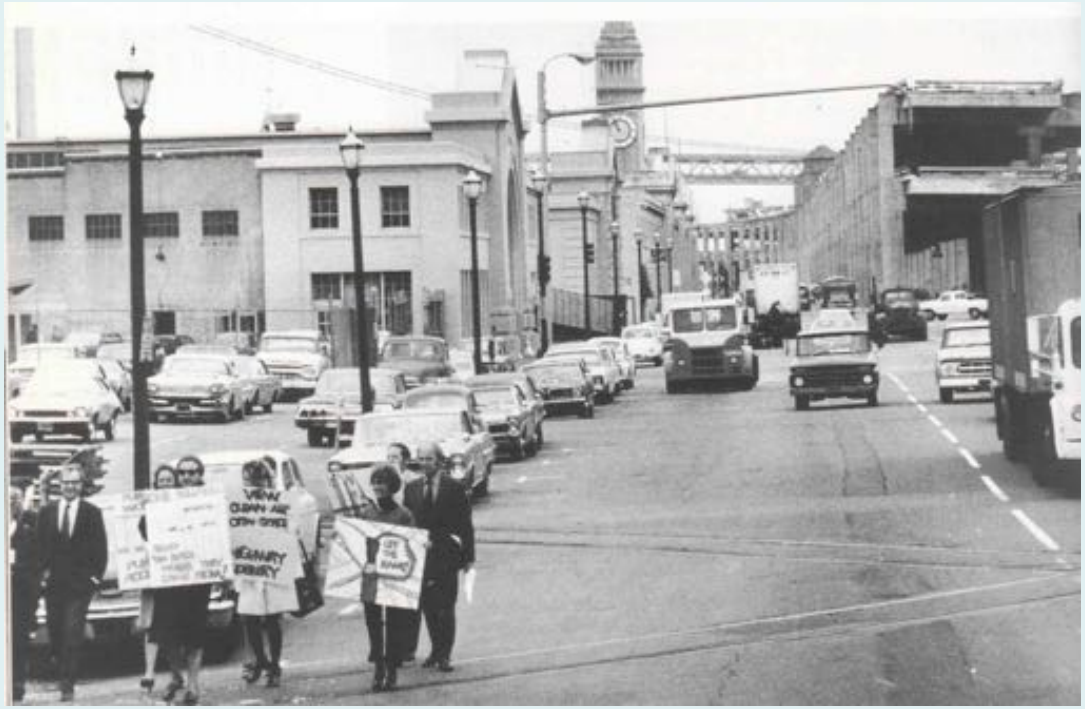
- **City: 852,000 +**
- **Metropolitan area: 8 million**
- **City Area: 121 km2 (metro 9,120 km2)**

Transport

- **Public transport mode split: 33% (city) 10% (region)**
- **SF Muni ridership 273 trips per capita annually**
- **SF Muni average speed: 13 kph**

San Francisco Freeway Plan

Typical of the standard American approach to urban transport planning in the 1950s – 1960s.



San Francisco Freeway Revolt

Spurred by freeway construction and the environmental movement.

Loma Prieta Earthquake – October 17, 1989

San Francisco Central Freeway

Political Process

- 1997: Rebuild – Passes
- 1998: Replace with boulevard – Passes
- 1999-a: Rebuild – Fails
- 1999-b: Replace with boulevard – Passes

The politics had little to do with transportation or urban development.

No freeway = congestion and no people!

Induced traffic: if you build it they will come.

San Francisco Lessons

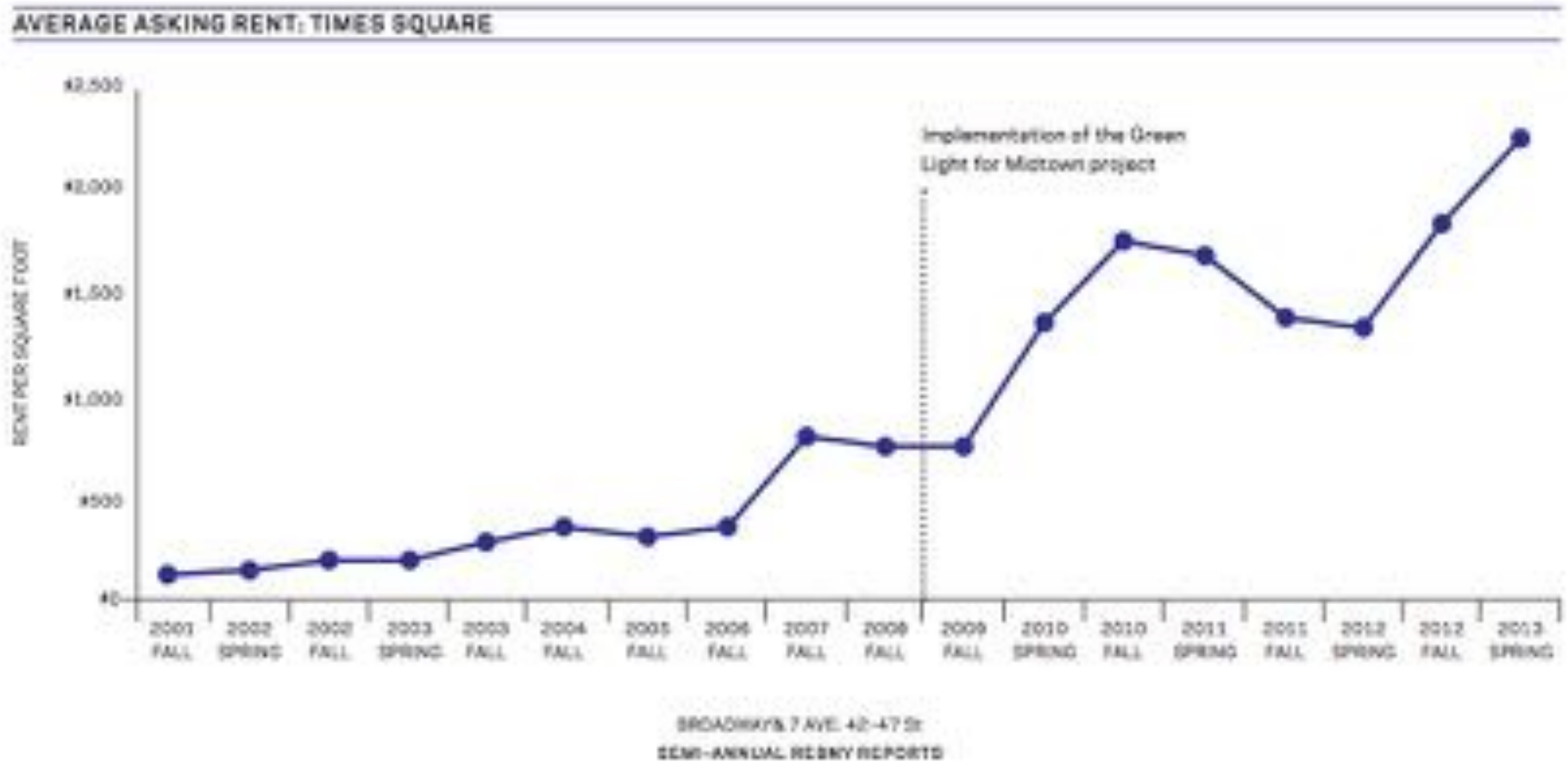
- Transport is highly political.
- Congestion is not really a problem.
- Removing freeways does not necessarily increase congestion …
- … But can significantly increase liveability and economic development.

Return of the Jedi – New York

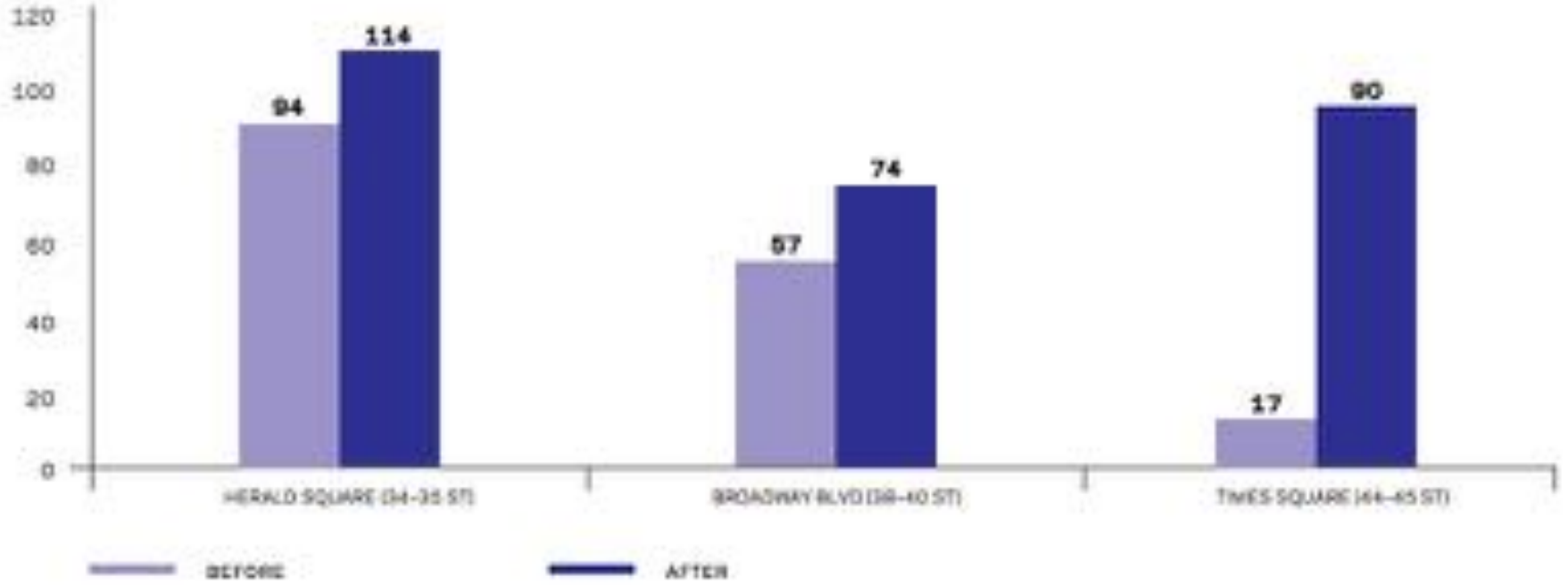
Michael R. Bloomberg
Mayor

Janette Sadik-Kahn
Transportation Commissioner

Experimentation and data driven learning



AVERAGE STATIONARY POPULATION (PERSONS OBSERVED)



Lessons from New York

- Political courage
- Imagination and creativity
- Temporary measures and paint
- Data collection and evaluation
- Learning and improving

If planning change can happen there it can happen anywhere … it's up to you NY, NY!

The Force Awakens: Participation

- Information technology has ***vastly increased*** the ability of people to participate;
- This increased ability to participate is ***revolutionising*** society …
- … especially how we plan and “operate” cities.

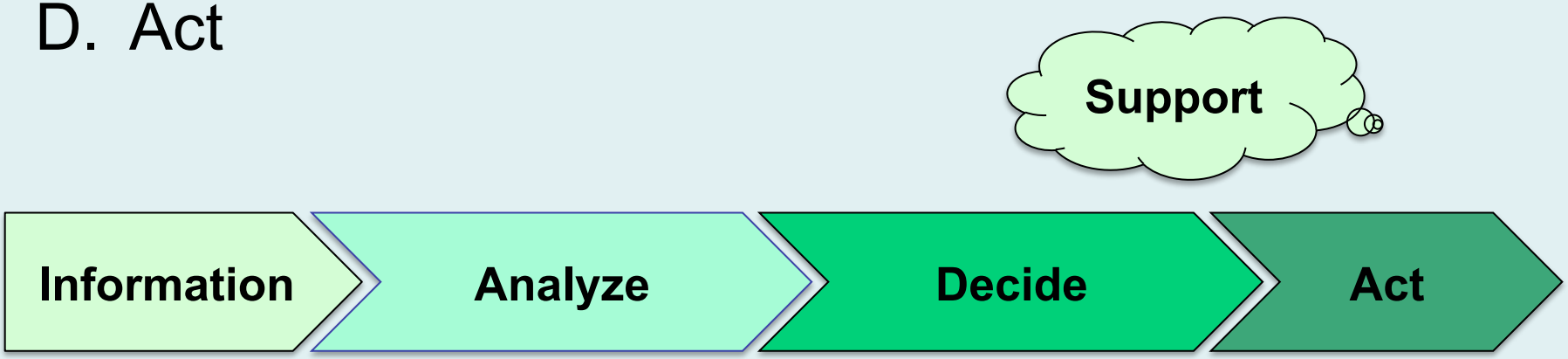
How do people plan and “operate” cities?

A. Provide information & ideas

B. Analyze data

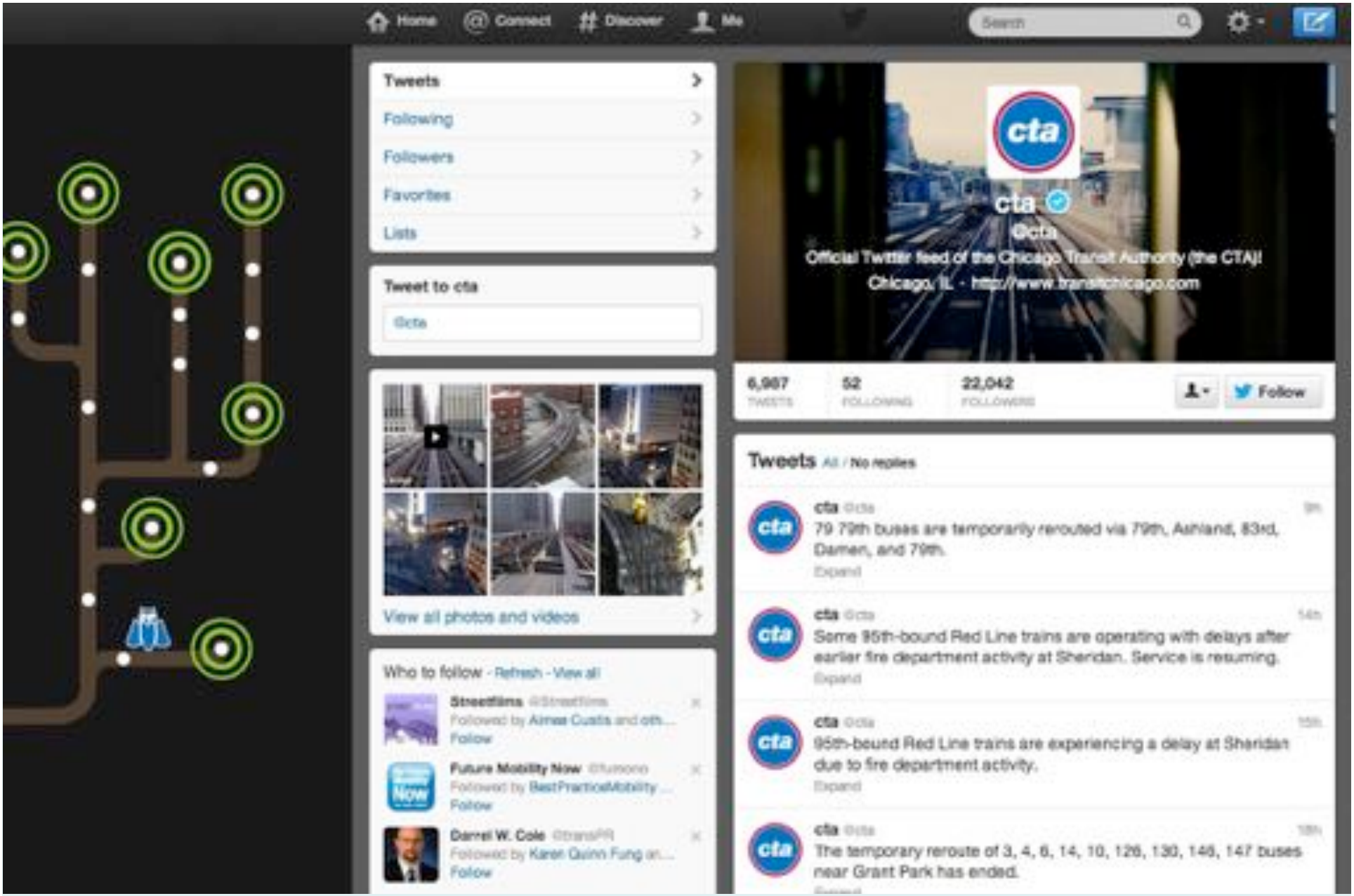
C. Decide (people collaborate)

D. Act



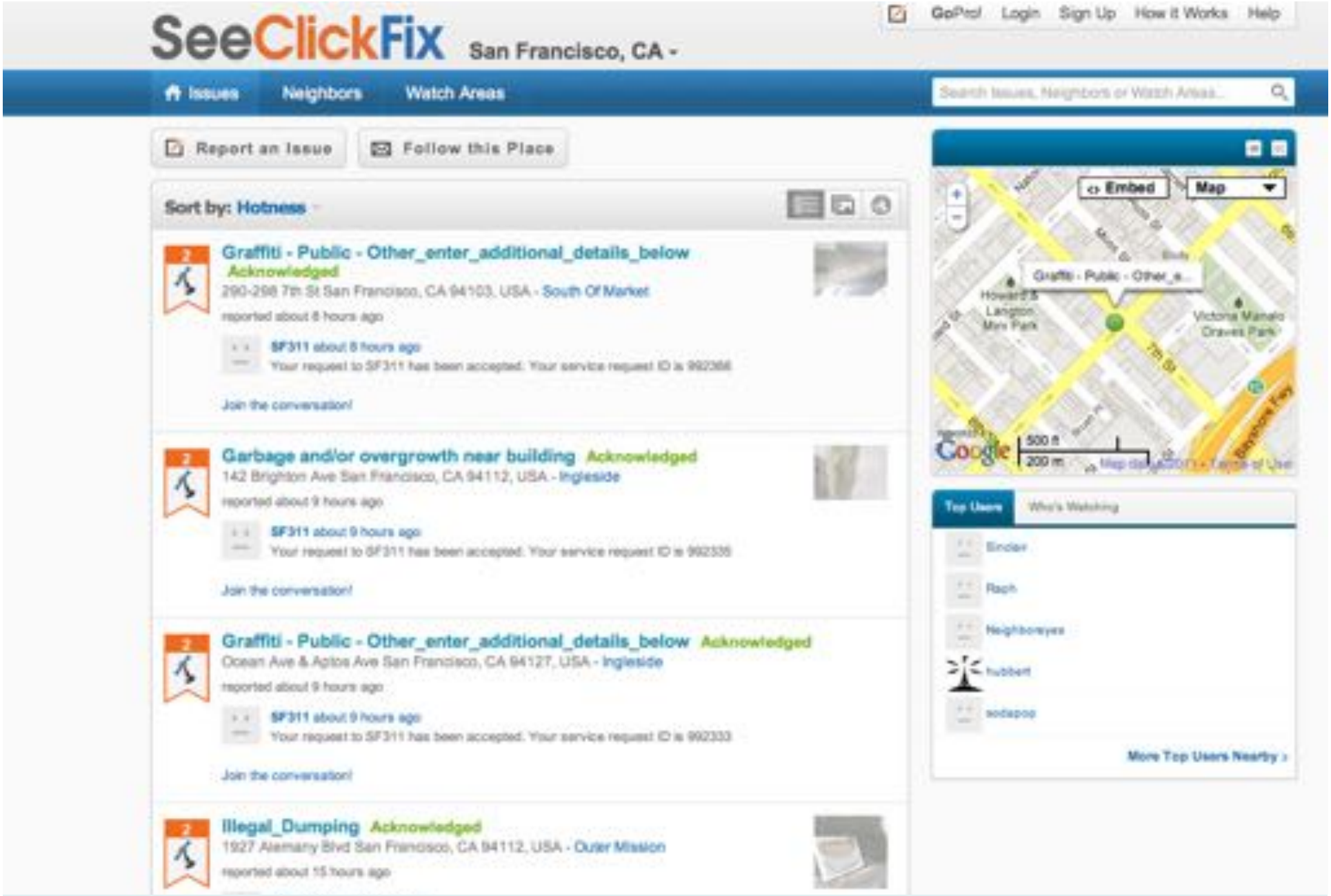
A. Input: *simple and ubiquitous*

- Social media
- Reporting applications
- Sensor data



Chicago Transit Authority – Twitter Feed

Zurich Public Transport Authority – Facebook Page



SeeClickFix http://seeclickfix.com

ABOUT FEEDBACK mysociety DONATE OUR SITES

FixMyTransport
Euston, we have a problem
BETA

Sign in or sign up

Had a bad train journey?

Report your problem with a:

STOP or STATION

JOURNEY or ROUTE

and we will help you get it fixed

Follow us on Facebook

Follow us on Twitter

What FixMyTransport does

- Reports problems
- Finds people responsible
- Grows support
- Tracks progress
- Gets things done

How does it work?

FixMyTransport Launches!

Welcome to FixMyTransport, a site specially built for public transport users in Britain who want to make public transport better for us all. We've worked hard to make the site work well, but we're sure there are plenty of things we won't have got quite right - so please do send us feedback if there's anything that's not right, or anything you'd like to see added or improved.

If you're here and you don't have a problem to report today, why don't you look through the list of recent problem reports, or browse your local area. If you're feeling sunny you could even leave a compliment about a route or station that you think is particularly

Browse Site

View recent issues

View routes by region

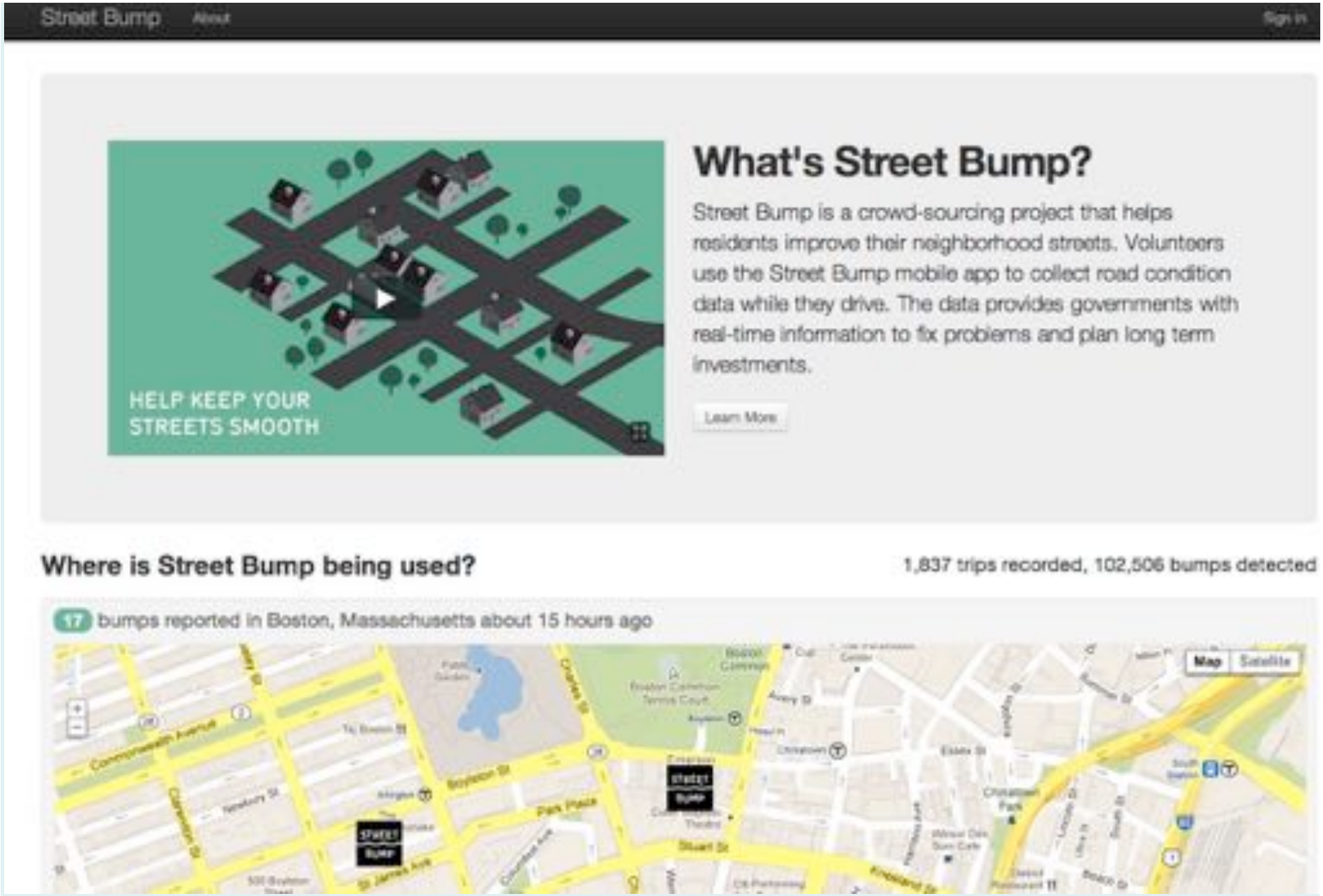
Map of issues

Traffic Check http://www.trafficcheck.at/

User friendly features needed for mobile phone reporting:

- **automatic geo location,**
- **logical information flow,**
- **check boxes for data entry.**

Meine Radspur, Vienna http://www.meineradspur.at/



Street Bump, Boston http://streetbump.org/

waze OUTSMARTING TRAFFIC, TOGETHER

Live Map My Dashboard Community Support Blog

Get the best route, every day, with real-time help from other drivers.

Download

App Store

Google play

Waze is the world's fastest-growing community-based traffic and navigation app. Join other drivers in your area who share real-time traffic and road info, saving everyone time and gas money on their daily commute.

moovit

Download Tour Contact

Want to choose the fastest, least crowded route every time?

moovit - social GPS for public transport

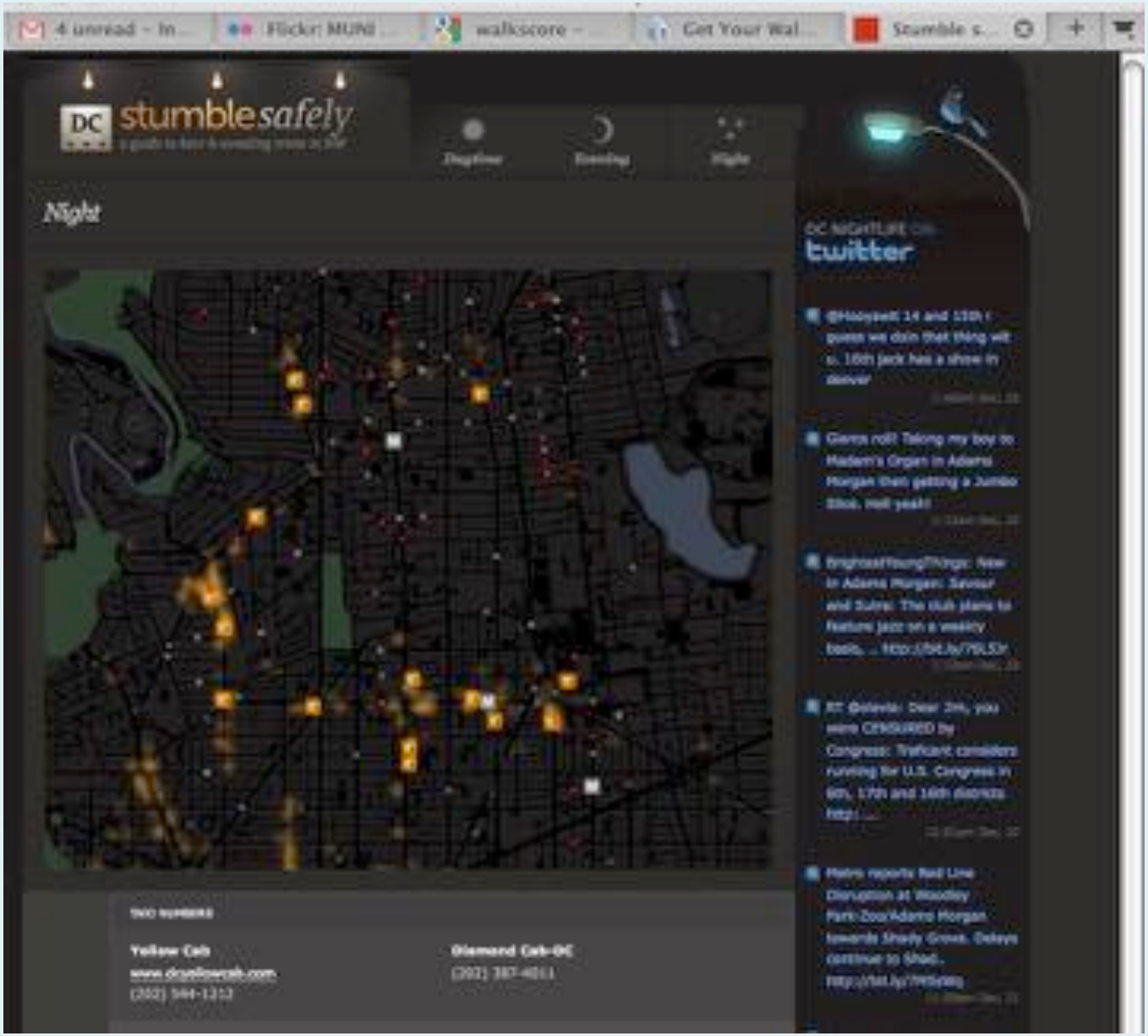
Moovit is a community-based app that takes the hassle out of public transport. No more checking the schedules for the bus, train, tram or metro. Join your local community of users to receive and share real-time information about your trip and navigate easily to your destination.

Free Download

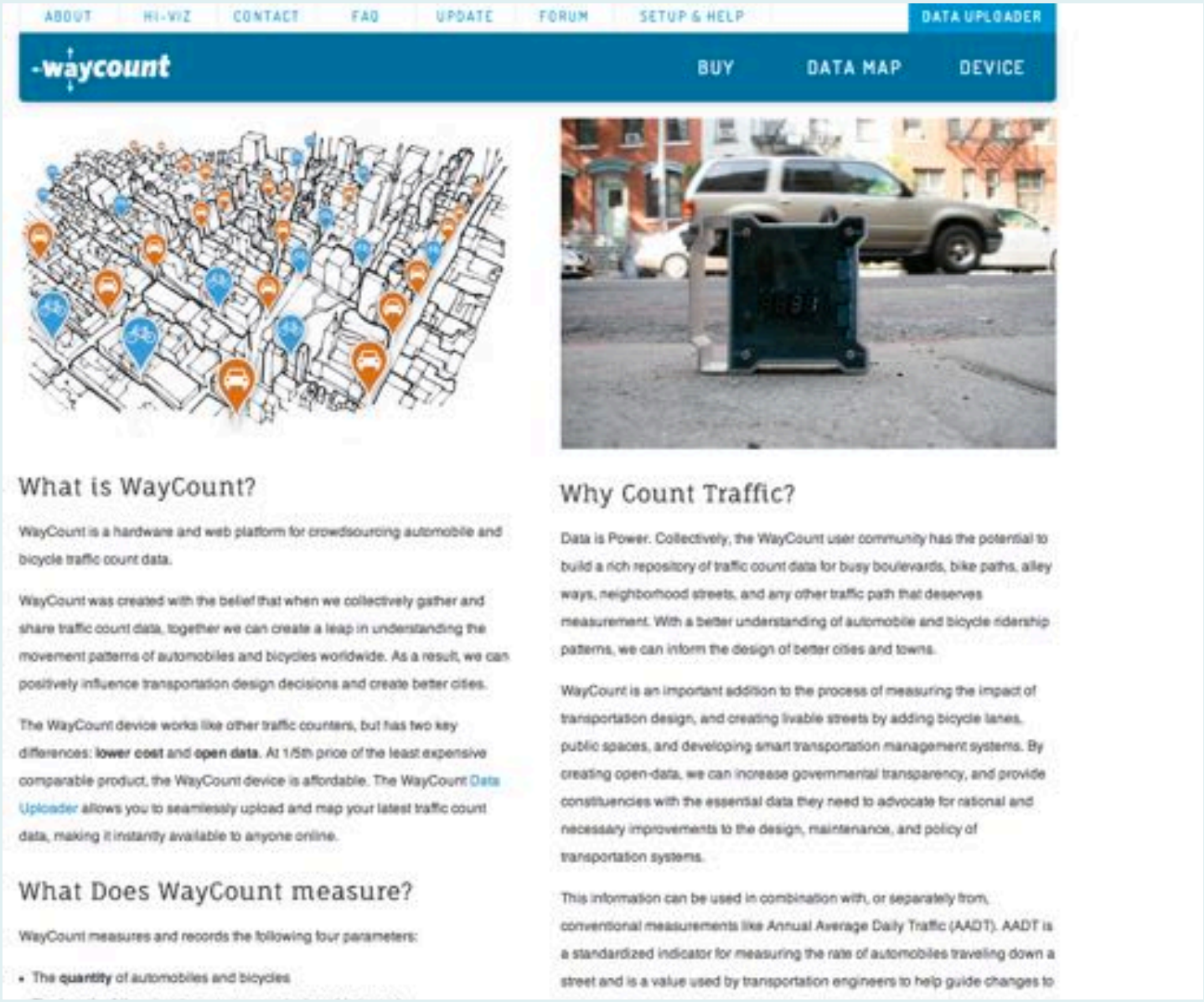
Download on the App Store

B. Data: *you can't hide*

- **City data –** open data or scraped.
- **Citizen data** – cheap sensors.

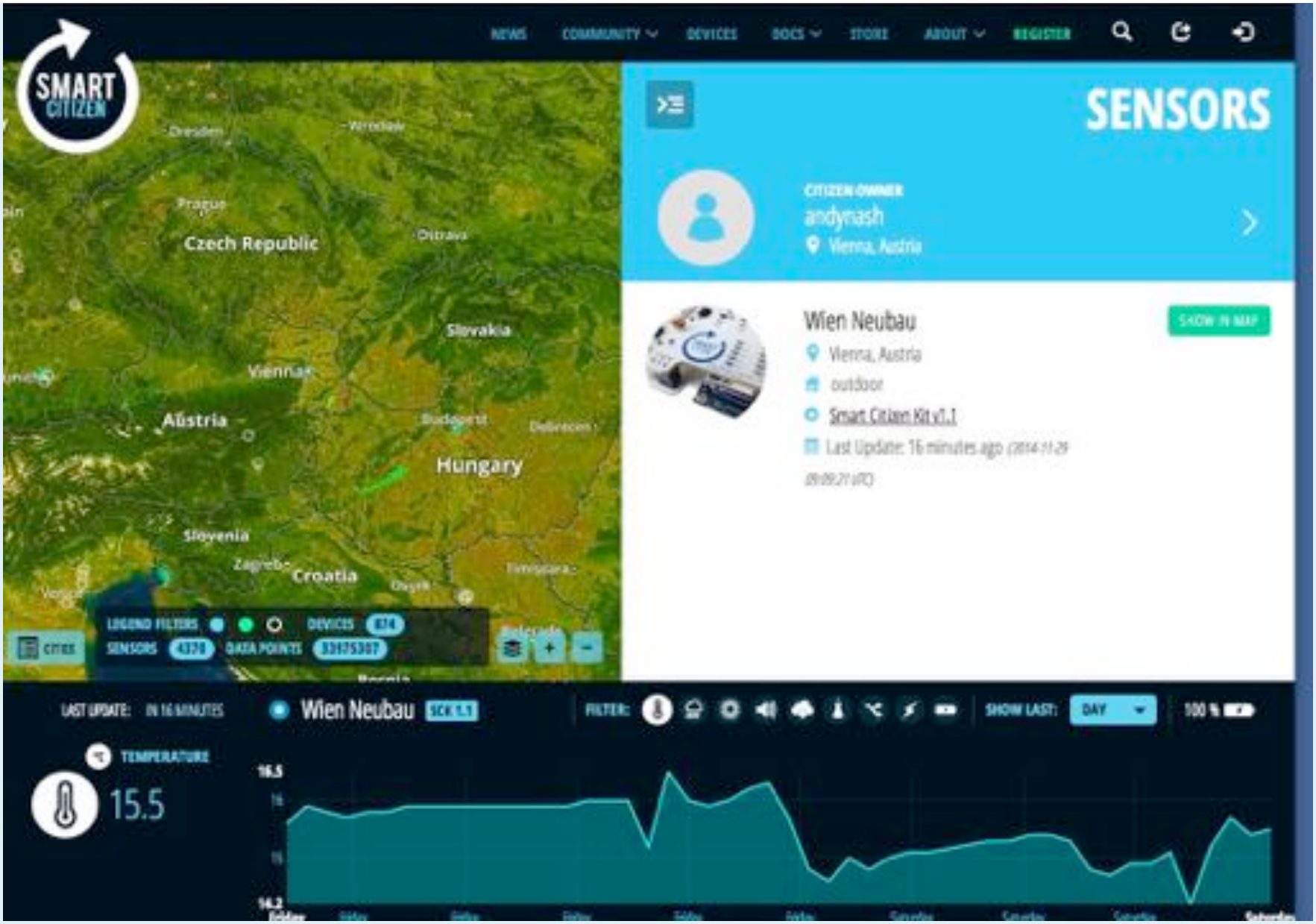


Citizen developed apps and visualizations from open data.
Stumble Safely, Washington D.C.



WayCount vehicle counter and software

www.waycount.com



Smart Citizen sensor and software

http://www.smartcitizen.me/

Air Quality Egg

community-led sensing network

Serial Number

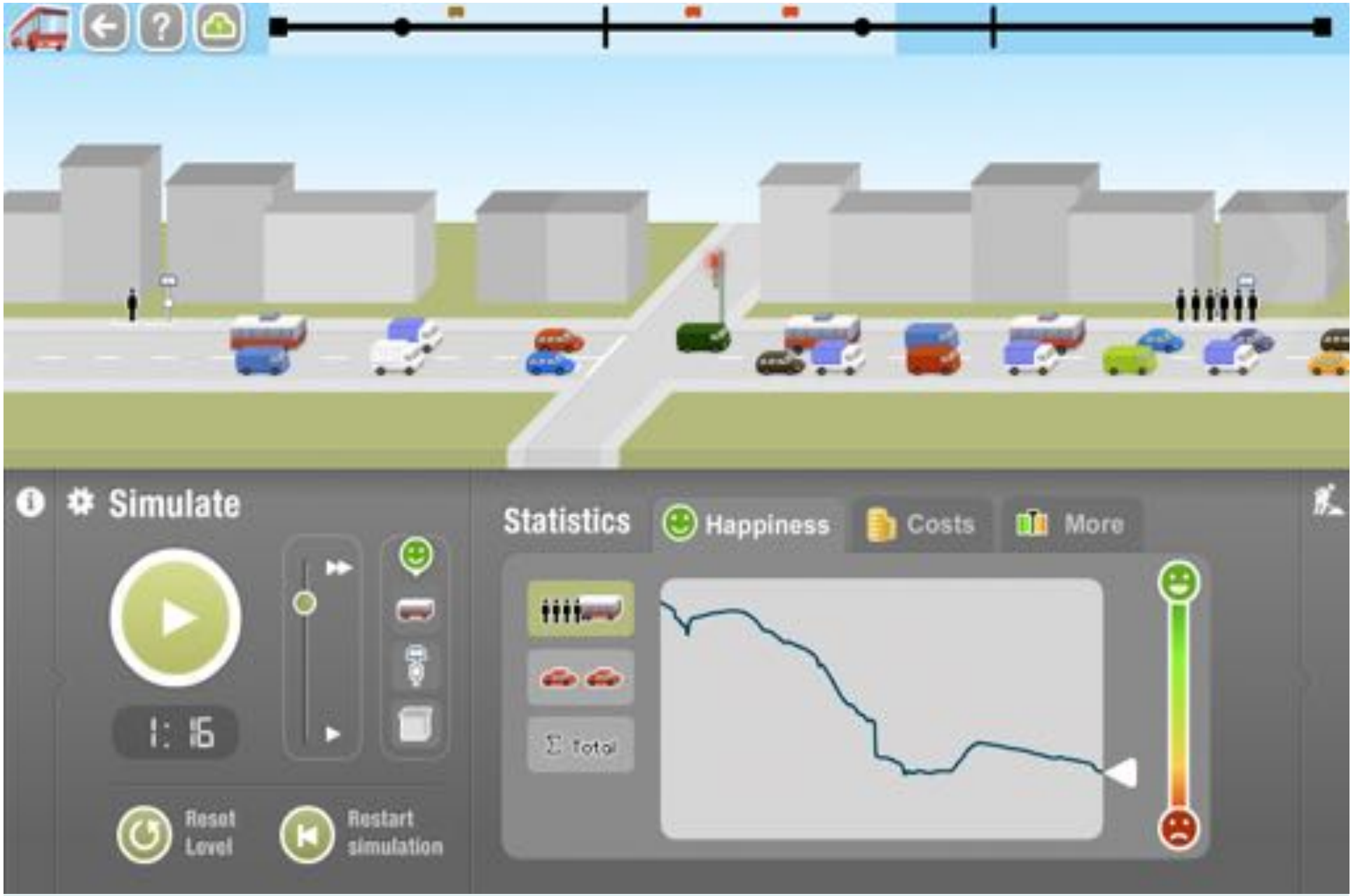
ADD MY EGG

What is it?

A community-led air quality sensing network that gives people a way to participate in the conversation about air quality.

C. Decide: *collaborate efficiently*

- **Education –** city planning is complex
- **Better processes** – meeting management
- **Increased engagement** – more is better



BusMeister game … public transport learning

http://greencitystreets.com

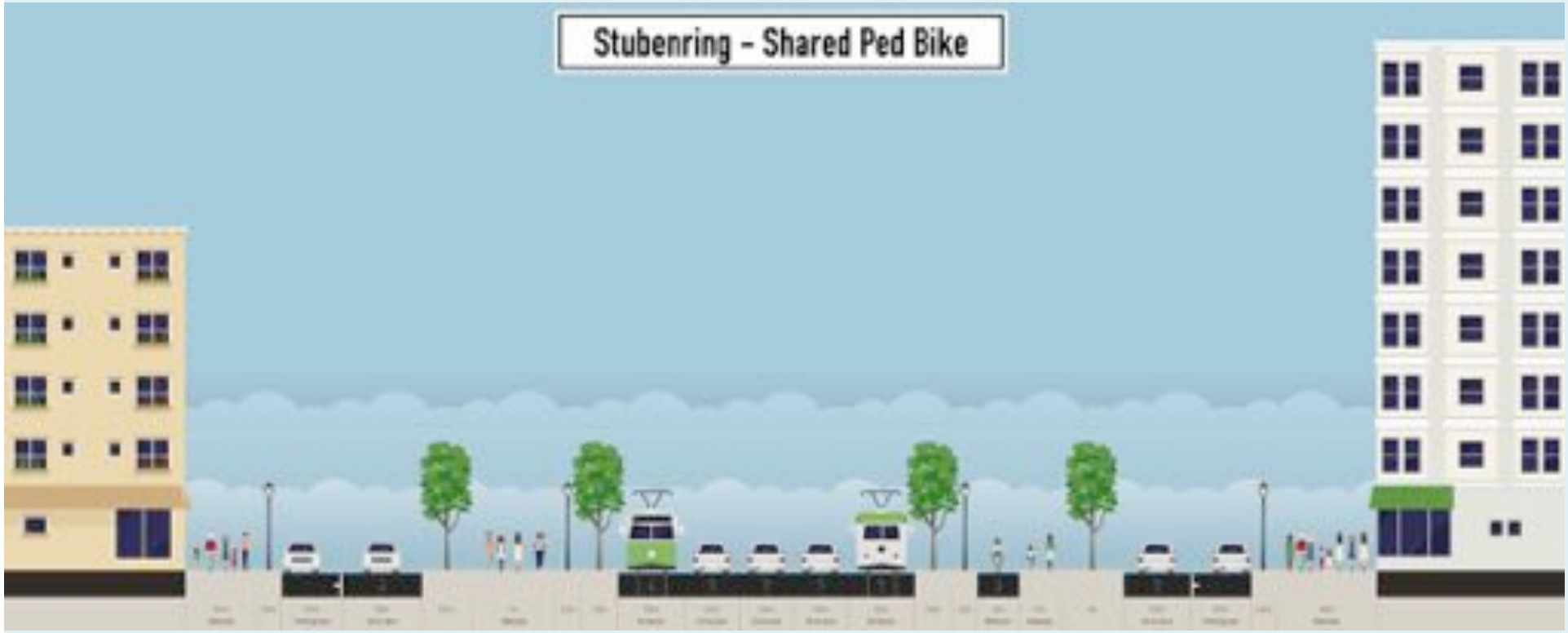
Public Transport wiki … crowd-sourced education

http://greencitystreets.com

Visualization … Participatory Chinatown Boston

Using virtual reality to help residents understand city planning.

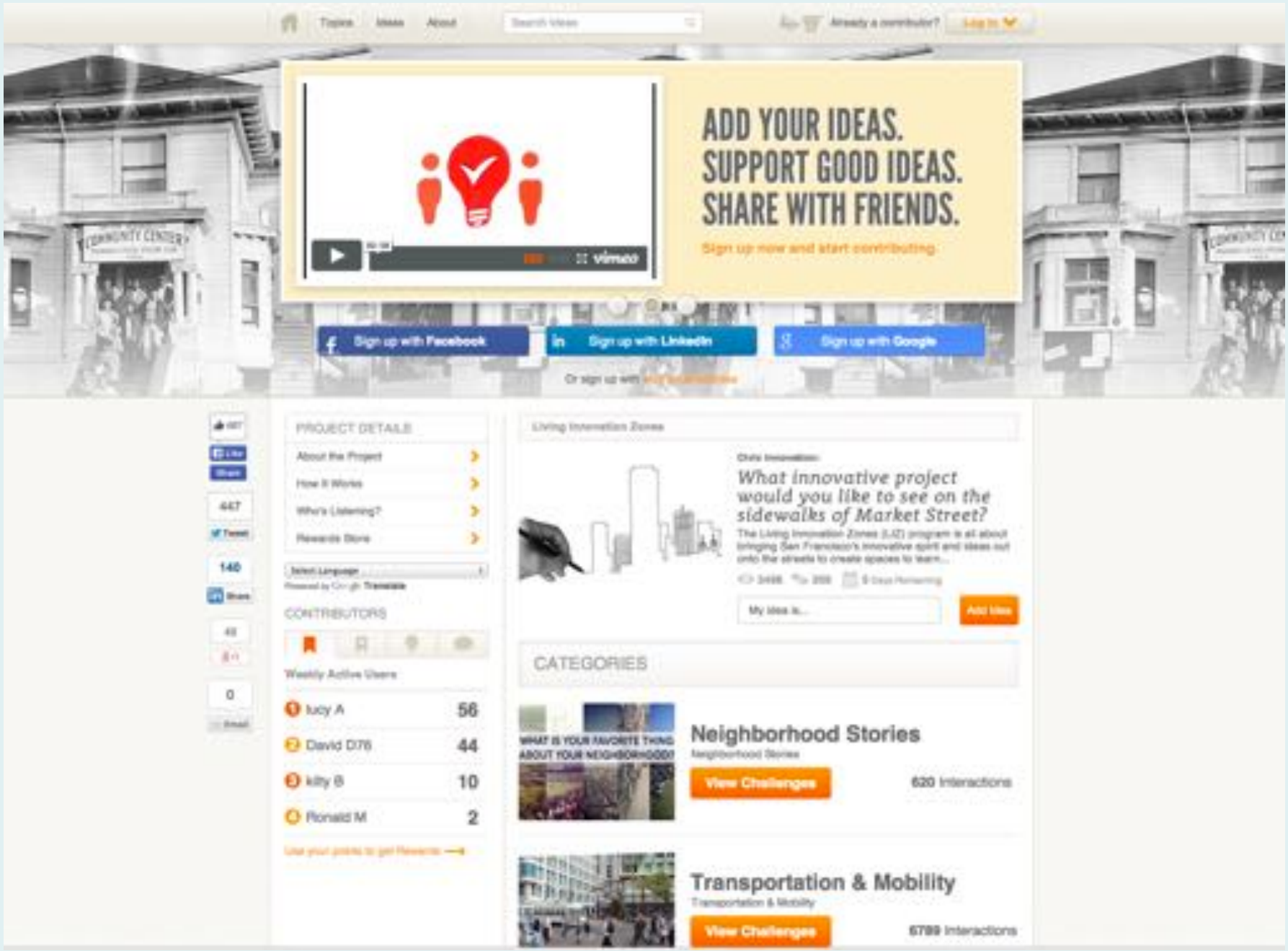
http://www.participatorychinatown.org/



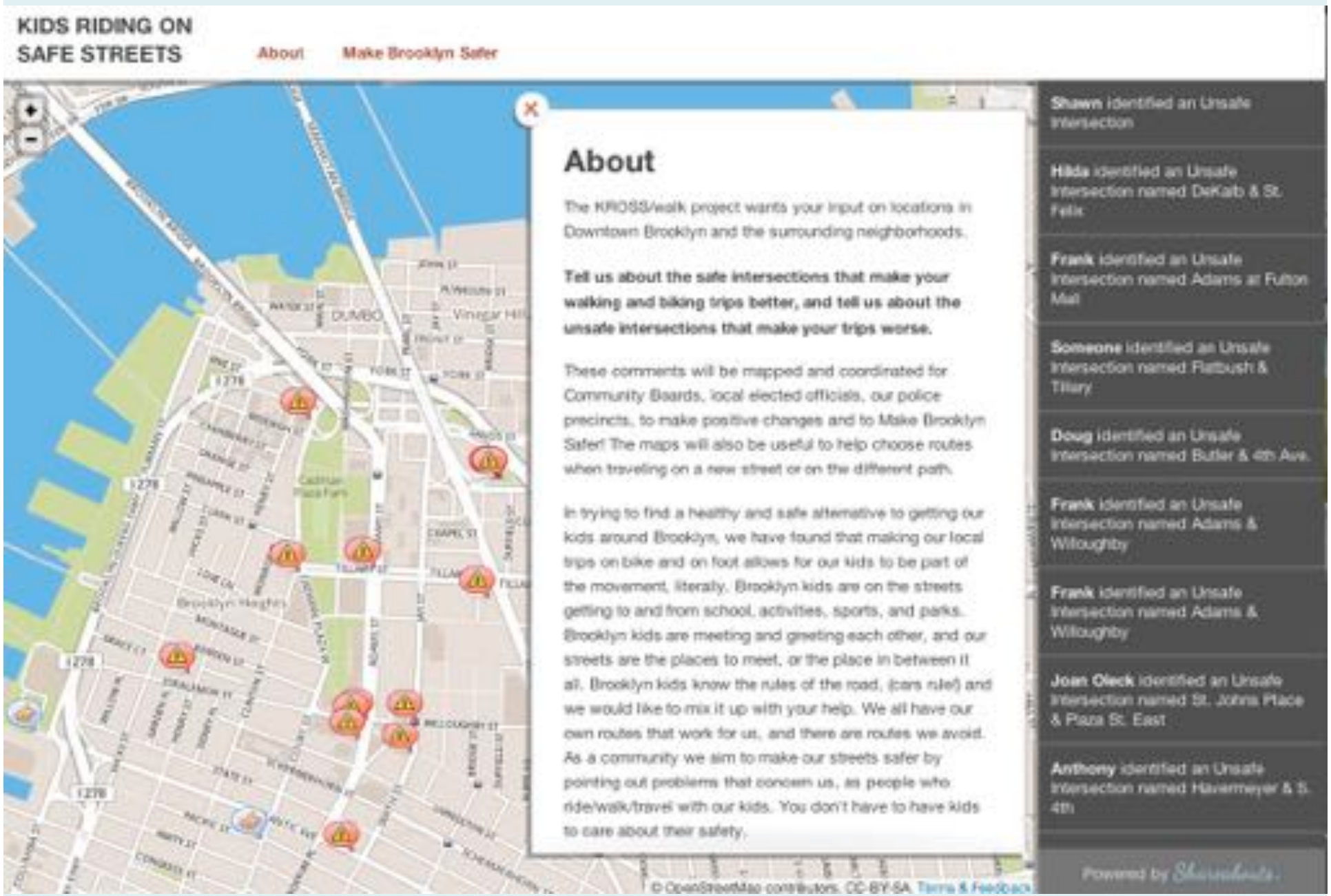
Visualisation of street cross sections... Streetmix

Helping residents understand street design and trade-offs.

http://streetmix.net

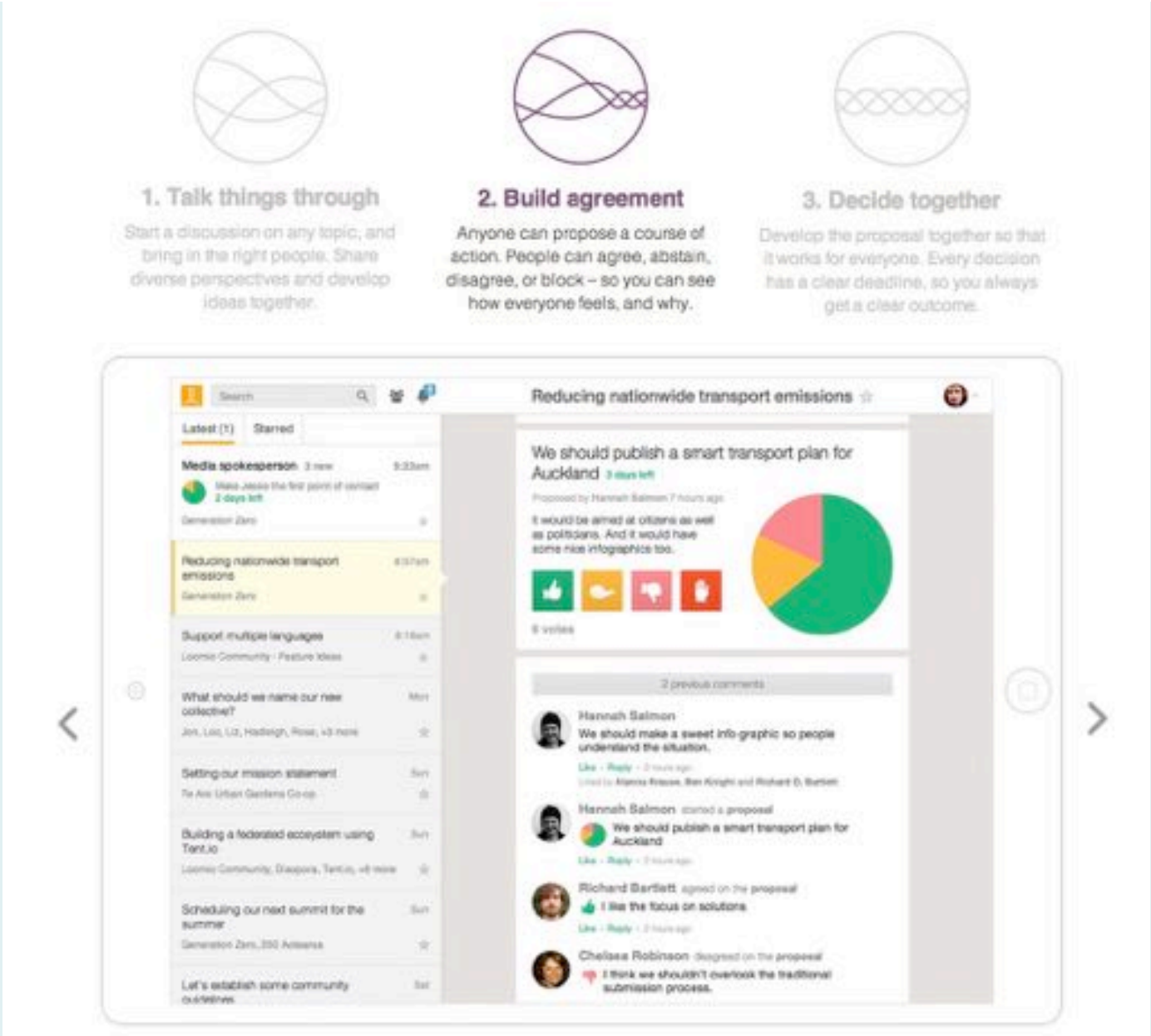


Collaboration Apps: Mind Mixer www.improveSF.com



Shareabouts – geo-based collaboration app

GreenCityStreets.com … Facebook-based collaboration



Loomio – collaborative decision making app

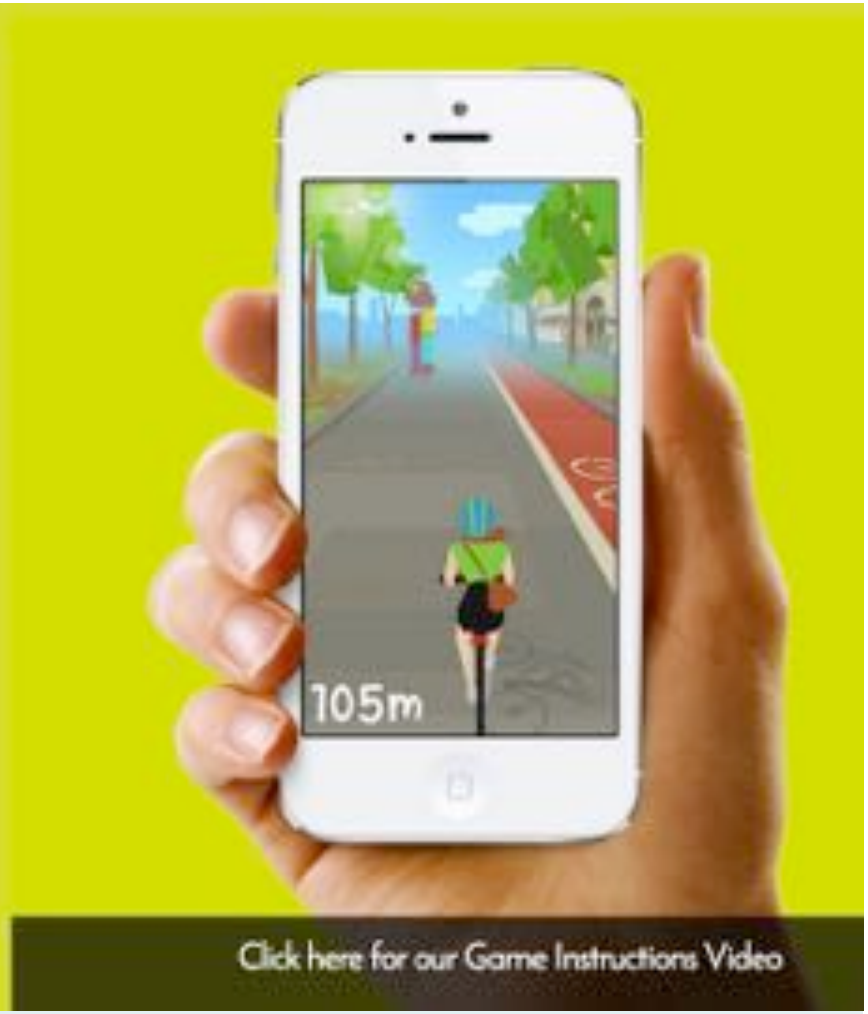
www.loomio.org

Ring Ride Game

Test your skill riding around Vienna's historic Ringstrasse. Look out for Mozart!

DOWNLOAD FROM PLAY STORE

Apple Store: coming soon!



Ring Ride – Game to encourage participation

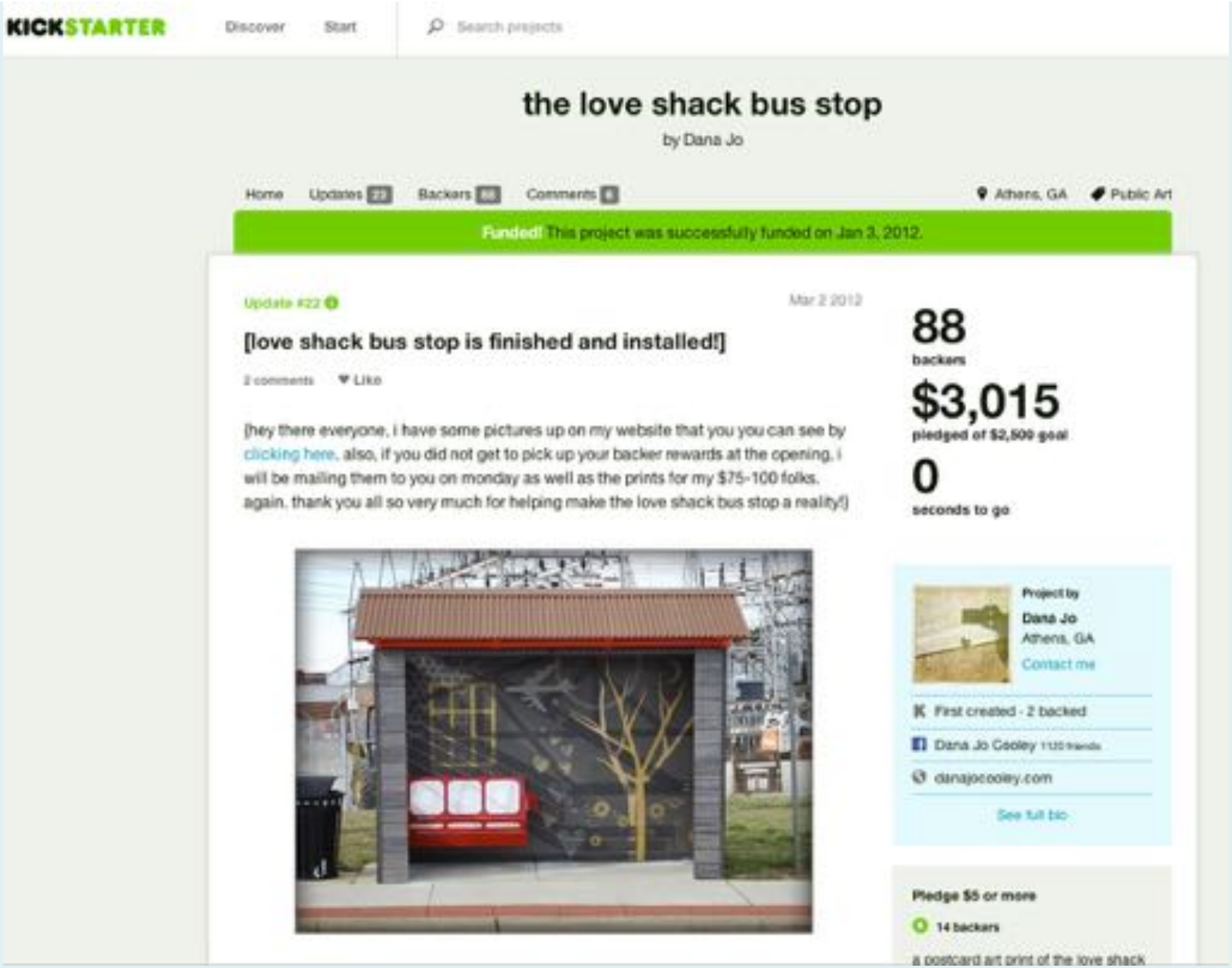
www.ringstrasse150.com

Grr-Grr-Bike – Game for education + engagement. www.grr-grr-bike.com

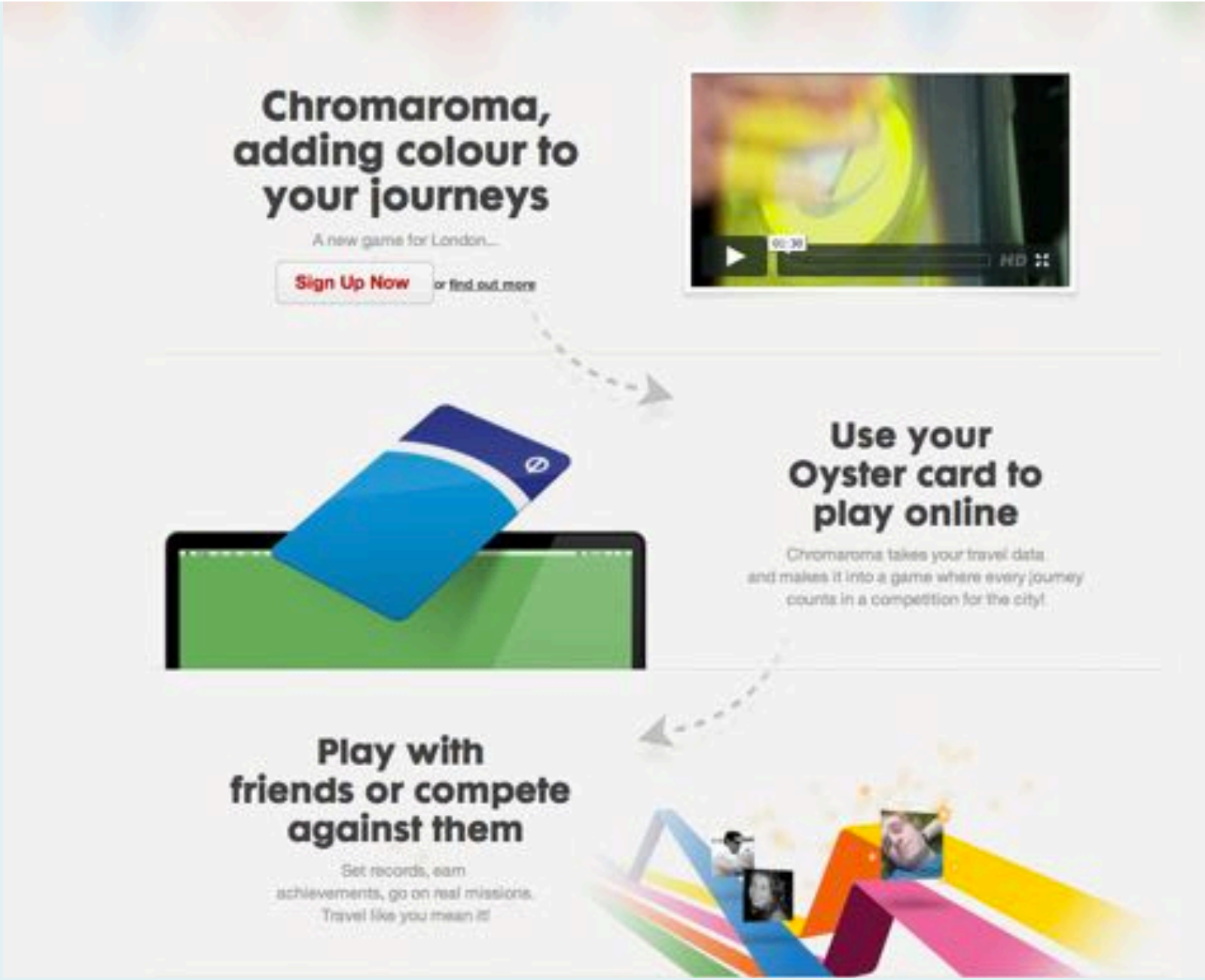
D. Act: *disruptive change*

- **Information** – Twitter real time transport
- **Civic organisation** – 596 Acres, Casserole
- **Sharing society** – P2P ridesharing
- **Crowd-sourced civic works** – Kickstarter
- **Disruptive businesses** – Uber, Bridj

Information exchange and organisation … 596 Acres



Crowdfunding for civic improvements … Kickstarter



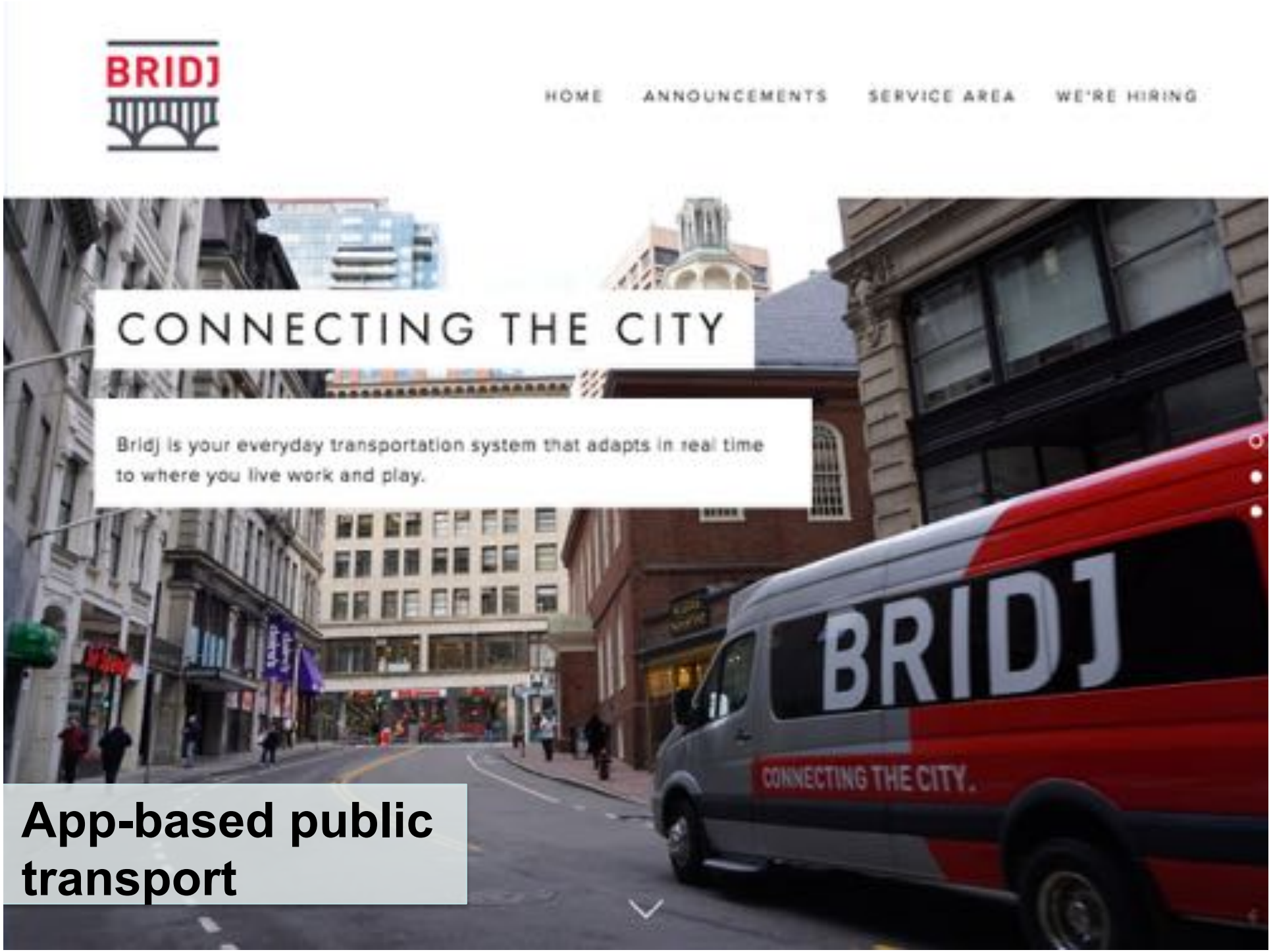
Using games to influence behaviour … Chromaroma (London)

STEAL THIS IDEA: A $600 PROTECTED BIKE LANE DEMO AT AN OPEN-STREETS EVENT

January 24, 2014

Michael Andersen, Green Lane Project staff writer

Chrissy Lee of the Minneapolis Bicycle Coalition sets up a "pop up" bike lane demo last summer.



App-based public transport

Designing passionate, people-powered public services

Casserole is an example of how ***understanding citizens as producers as well as consumers*** leads to services that help communities turn the issues they're passionate about into ways to be more self-sufficient and less invested in expensive public services.

Lessons from Cyberspace

- Information technology has ***fundamentally*** changed the role of government.
- Applications enable active participation in ***planning and operating*** cities …
- … if government does not embrace this active participation – ***someone else*** will!
- Participation apps should be easy, fun and active.

The Empire Strikes Back – Vienna

- Infrastructure investment pays off.

A New Hope – Zurich

- Efficiency is possible.

The Phantom Menace – San Francisco

- Don’t be afraid of congestion.

Return of the Jedi – New York

- Planning needs brains AND courage.

The Force Awakens – Information Technology

- Participation is revolutionizing cities and planning.

Andrew Nash develops engaging public participation applications and games designed to improve city livability and transport.

- GreenCityStreets.com
- Ringstrasse150.com/wp/
- AndyNash.com