

Crowdsourcing: It's arrived, are you on board?



Andrew Nash

GreenCityStreets.com

CIPTEC Project Meeting

Budapest

May 13, 2016

Outline

- What is crowdsourcing?
- Types of crowdsourcing:
 - *Reporting*
 - *Analysis*
 - *Collaboration*
 - *Action*
- **Discuss:** *How can public transport harness the power of crowdsourcing?*

Crowdsourcing

"Simply defined, crowdsourcing represents the act of a company or institution taking a function once performed by employees and outsourcing it to an undefined (and generally large) network of people in the form of an open call."*

... But, what are these functions?

*Source: Jeff Howe, Wired 2006, from:
<https://en.wikipedia.org/wiki/Crowdsourcing>

Reporting

Crowdsourcing data is *easy*

- Social media
- Reporting applications
- Sensor data (automatic, e.g., from phone)

(Crowdsourced data is part of what people mean when they talk about **Big Data**.)

[Home](#) [Connect](#) [Discover](#) [Me](#)

Tweets

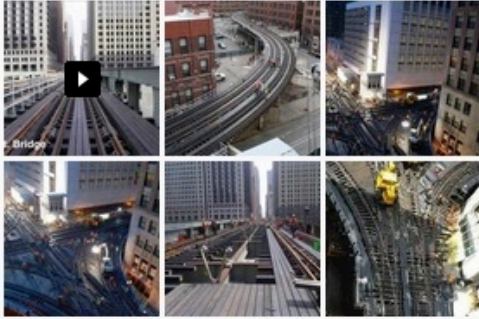
Following

Followers

Favorites


Lists


Tweet to cta






View all photos and videos

Who to follow · Refresh · View all

 **Streetfilms** @Streetfilms
Followed by Aimee Custis and oth...
Follow

 **Future Mobility Now** @fumono
Followed by BestPracticeMobility ...
Follow

 **Darrel W. Cole** @transPR
Followed by Karen Quinn Fung an...
Follow



**cta** 
@cta

Official Twitter feed of the Chicago Transit Authority (the CTA)!
Chicago, IL · <http://www.transitchicago.com>

6,987
TWEETS


52
FOLLOWING


22,042
FOLLOWERS


 


Tweets

All / No replies

 **cta** @cta 9h
79 79th buses are temporarily rerouted via 79th, Ashland, 83rd, Damen, and 79th.
Expand

 **cta** @cta 14h
Some 95th-bound Red Line trains are operating with delays after earlier fire department activity at Sheridan. Service is resuming.
Expand

 **cta** @cta 15h
95th-bound Red Line trains are experiencing a delay at Sheridan due to fire department activity.
Expand

 **cta** @cta 18h
The temporary reroute of 3, 4, 6, 14, 10, 126, 130, 146, 147 buses near Grant Park has ended.
Expand

Chicago Transit Authority – Twitter Feed



Create Page

Recent

2013
2012
2011
2010
1976
1975
1971
1969
1968
1960
1957
1955
1950
1939
1930
1927
1905
1900
1898
1896
1894
Founded



VBZ Züri-Linie

VBZ Züri-Linie

7,041 likes · 293 talking about this

✓ Liked

Message



Product/Service

Die Verkehrsbetriebe Zürich mit ihren Fahrzeugen gehören zu Zürich wie die Limmat und der See. Umsteigen lohnt sich. www.vbz.ch

About · Suggest an Edit



Photos

7,041

Likes



Fahrplan



VBZ Apéro Game



Events



Videos

Welcome

Welcome

Highlights ▾

Zurich Public Transport Authority – Facebook Page

Report an Issue

Follow this Place

Sort by: Hotness ▾

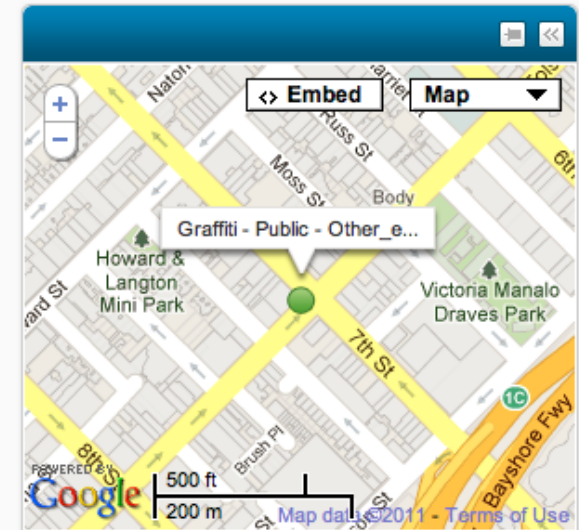
- 2

Graffiti - Public - Other_enter_additional_details_below
Acknowledged
 290-298 7th St San Francisco, CA 94103, USA - South Of Market
 reported about 8 hours ago
 SF311 about 8 hours ago
 Your request to SF311 has been accepted. Your service request ID is 992366
[Join the conversation!](#)
- 2

Garbage and/or overgrowth near building **Acknowledged**
 142 Brighton Ave San Francisco, CA 94112, USA - Ingleside
 reported about 9 hours ago
 SF311 about 9 hours ago
 Your request to SF311 has been accepted. Your service request ID is 992335
[Join the conversation!](#)
- 2

Graffiti - Public - Other_enter_additional_details_below **Acknowledged**
 Ocean Ave & Aptos Ave San Francisco, CA 94127, USA - Ingleside
 reported about 9 hours ago
 SF311 about 9 hours ago
 Your request to SF311 has been accepted. Your service request ID is 992333
[Join the conversation!](#)
- 2

Illegal_Dumping **Acknowledged**
 1927 Alemany Blvd San Francisco, CA 94112, USA - Outer Mission
 reported about 15 hours ago



| Top Users | Who's Watching |
|--|----------------|
| Sinclair | |
| Raph | |
| Neighboreyes | |
| hubbert | |
| sodapop | |
| More Top Users Nearby > | |



FixMyTransport

Euston, we have a problem

BETA

[ABOUT](#)

[FEEDBACK](#)

[mysociety](#)

[DONATE](#)

[OUR SITES](#)

[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

How does it work?

What FixMyTransport does

- ✉ Reports problems
- 🔍 Finds people responsible
- ♥ Grows support
- 📶 Tracks progress
- ✓ Gets things done

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

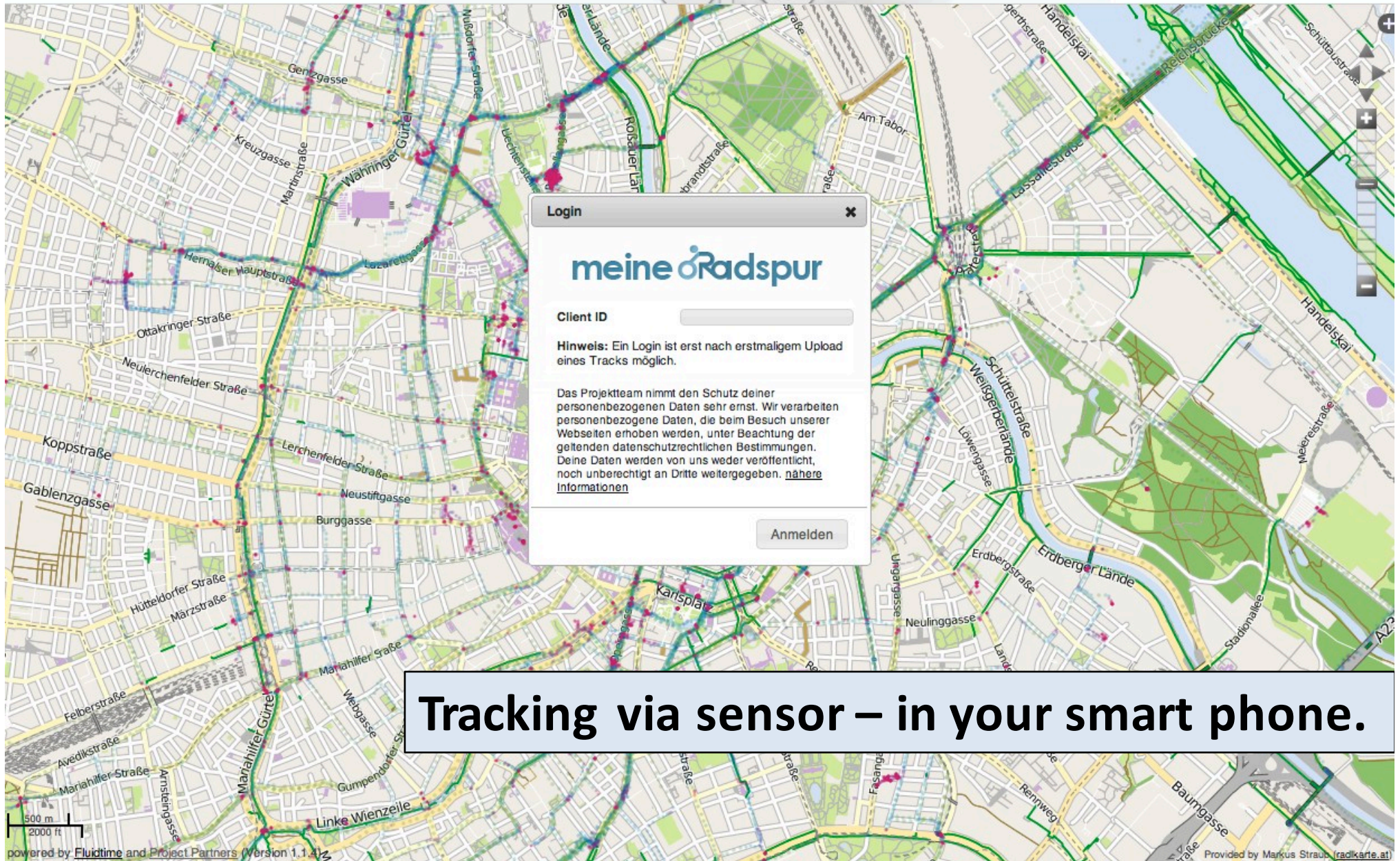


Browse Site

[View recent issues](#)

[View routes by region](#)

[Map of issues](#)



Tracking via sensor – in your smart phone.



What's Street Bump?

Street Bump is a crowd-sourcing project that helps residents improve their neighborhood streets. Volunteers use the Street Bump mobile app to collect road condition data while they drive. The data provides governments with real-time information to fix problems and plan long term investments.

Find and report Potholes using smart phone accelerometer sensor.

Where is Street Bump being used?

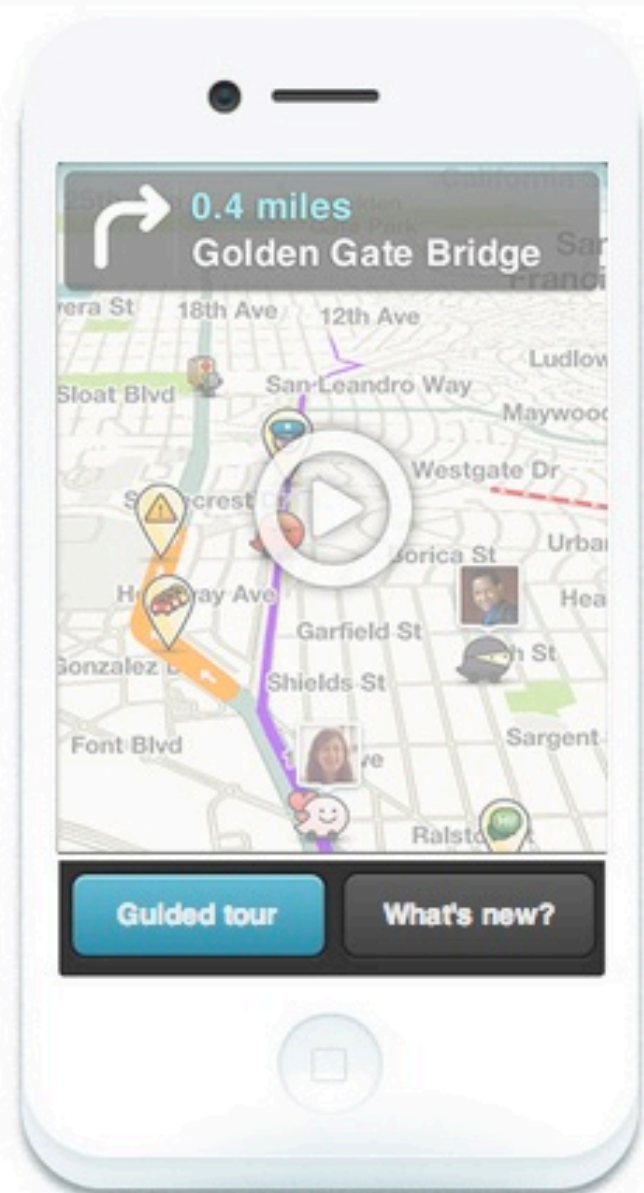
1,837 trips recorded, 102,506 bumps detected

17 bumps reported in Boston, Massachusetts about 15 hours ago



Sensor-based data: Street Bump, Boston

<http://streetbump.org/>



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



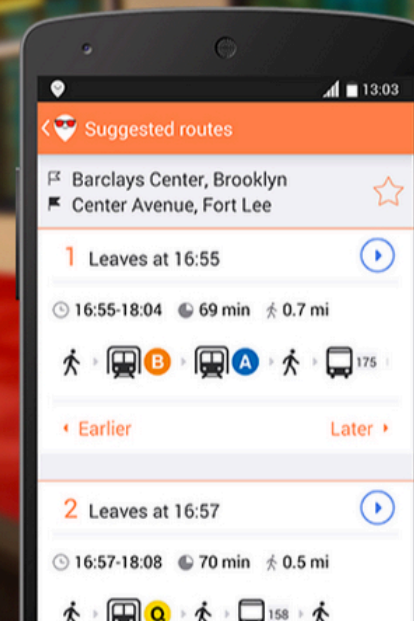
Waze is the world's fastest-growing community-based traffic and navigation app. Join other drivers in your area who share real-time traffic and road info, saving everyone time and gas money on their daily commute.



RIDE PUBLIC TRANSIT SMARTER

Get the fastest, least crowded routes in real time

DOWNLOAD APP



NAVIGATE YOUR CITY

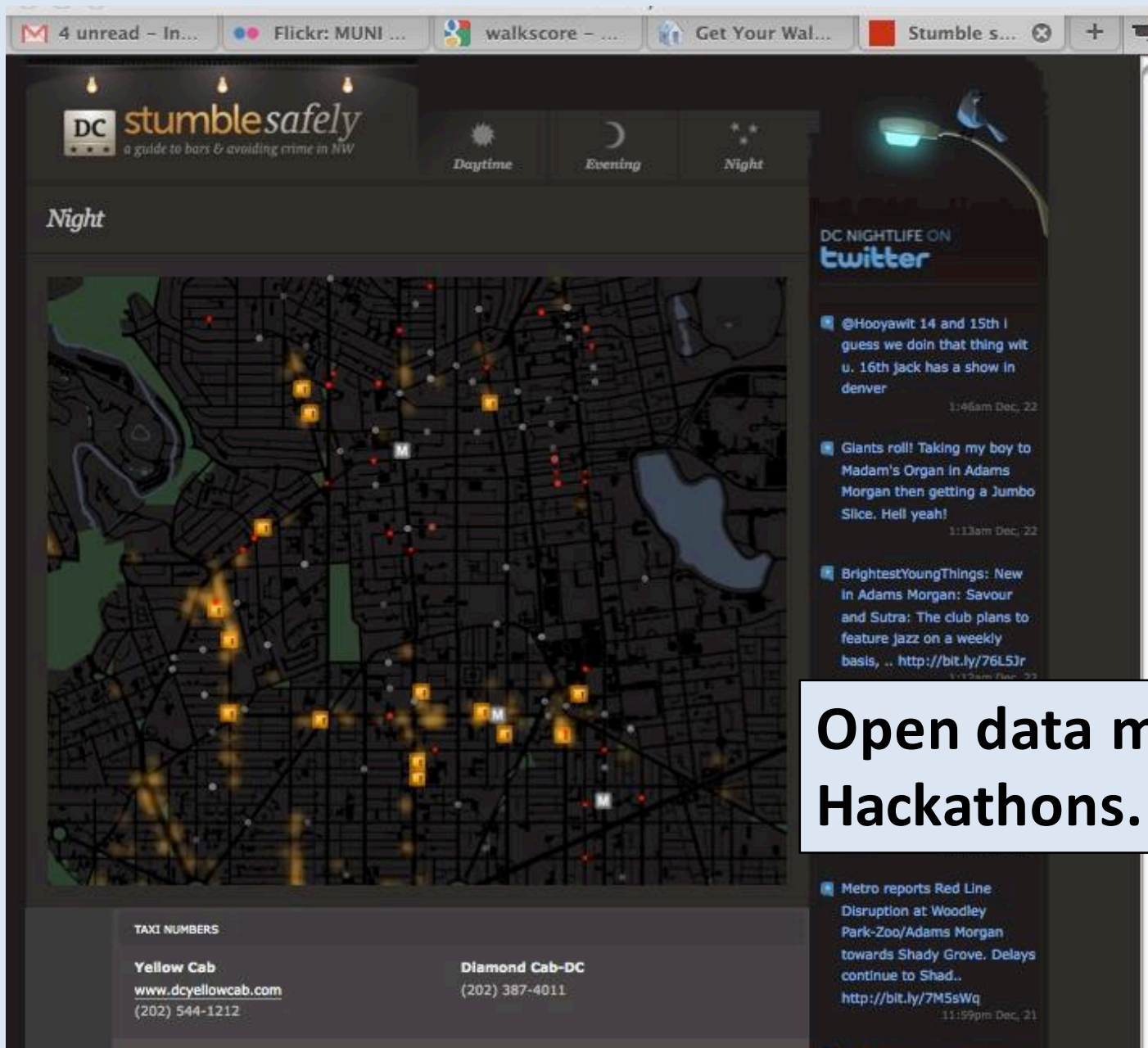
Moovit takes the hassle out of using public transit by giving you all the info you need, right at your fingertips.

Analysis

Analyzing data is *easy*

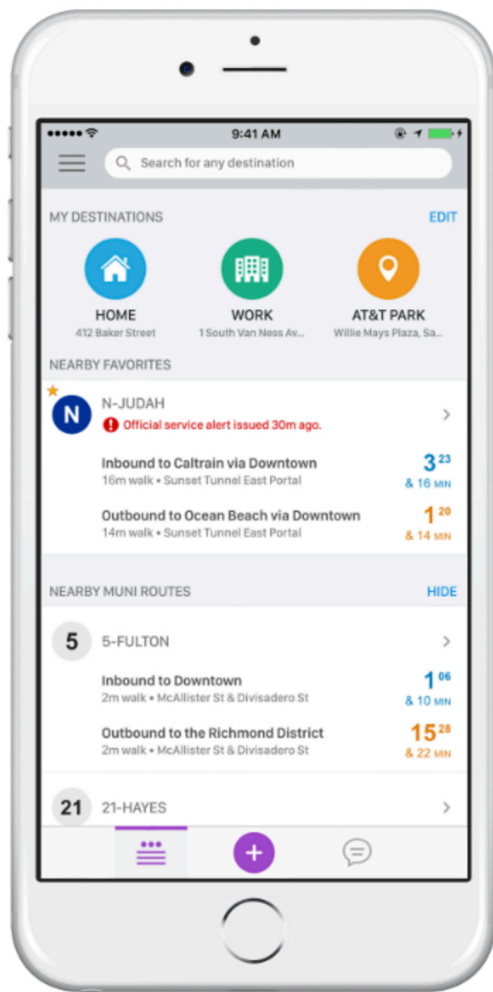
- (Smart) city data;
- Application data (e.g. Waze);
- Citizen data (cheap sensors).

*... vastly improved computing enables **anyone** to analyze scenarios, evaluate service, and develop their own transport plans.*



Open data mash-ups.
Hackathons.

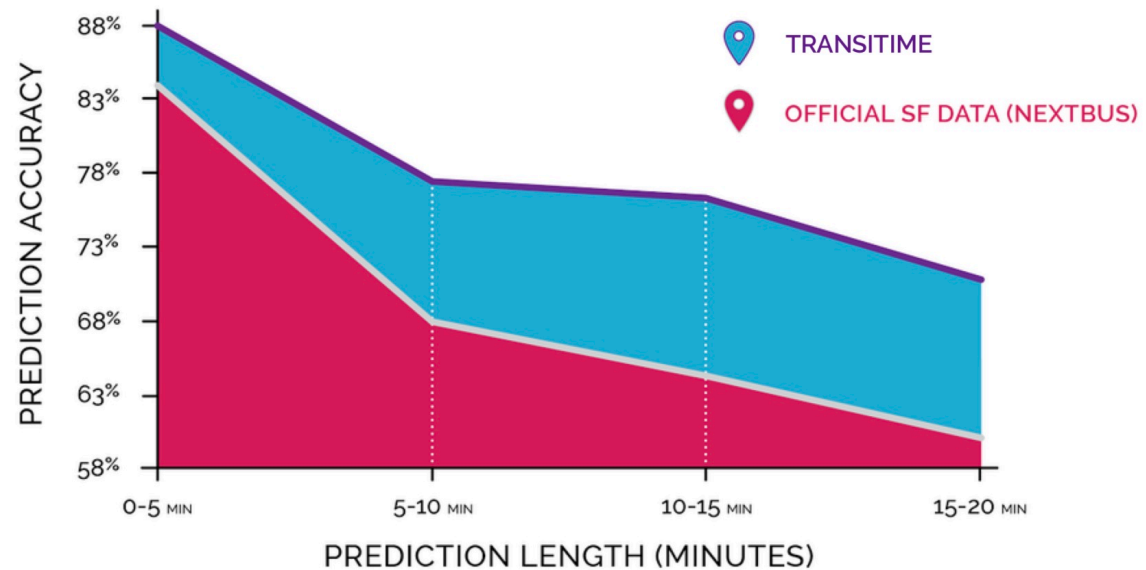
Citizen developed applications and visualizations from open data.
Stumble Safely, Washington D.C.



Meet Transitime

Swiftly has developed a more accurate real-time transit arrival prediction algorithm, called Transitime, to provide you with more accurate arrival and departure times. These predictions are accurate up to 20% more often than most current city-wide systems and bus stop signs.

PREDICTION ACCURACY

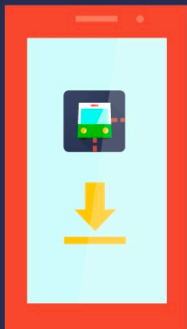


Swift app and “Transitime” analysis tool <http://goswift.ly>

More accurate than transit agency data?

¿Cómo participo?

1



Descarga la app

Disponible para dispositivos Android 4.1 y superior.

2



Mapea

Usa la app para registrar tus recorridos en autobús, microbús y vagoneta en equipo o de forma individual.

3



Gana premios

Los mapeadores más activos ganarán aparatos electrónicos y hasta 30,000 pesos en efectivo.

Crowdsourcing a map where none exists <http://mapatoncd.mx/>
Mexico City private mini-buses



What is WayCount?

WayCount is a hardware and web platform for crowdsourcing automobile and bicycle traffic count data.

WayCount was created with the belief that when we collectively gather and share traffic count data, together we can create a leap in understanding the movement patterns of automobiles and bicycles which will positively influence transportation design decisions.

The WayCount device works like other traffic counters but with key differences: **lower cost** and **open data**. At 1/5th price of a comparable product, the WayCount device is affordable. The [Uploader](#) allows you to seamlessly upload and manage your data, making it instantly available to anyone online.

What Does WayCount measure?

WayCount measures and records the following four parameters:

- The **quantity** of automobiles and bicycles

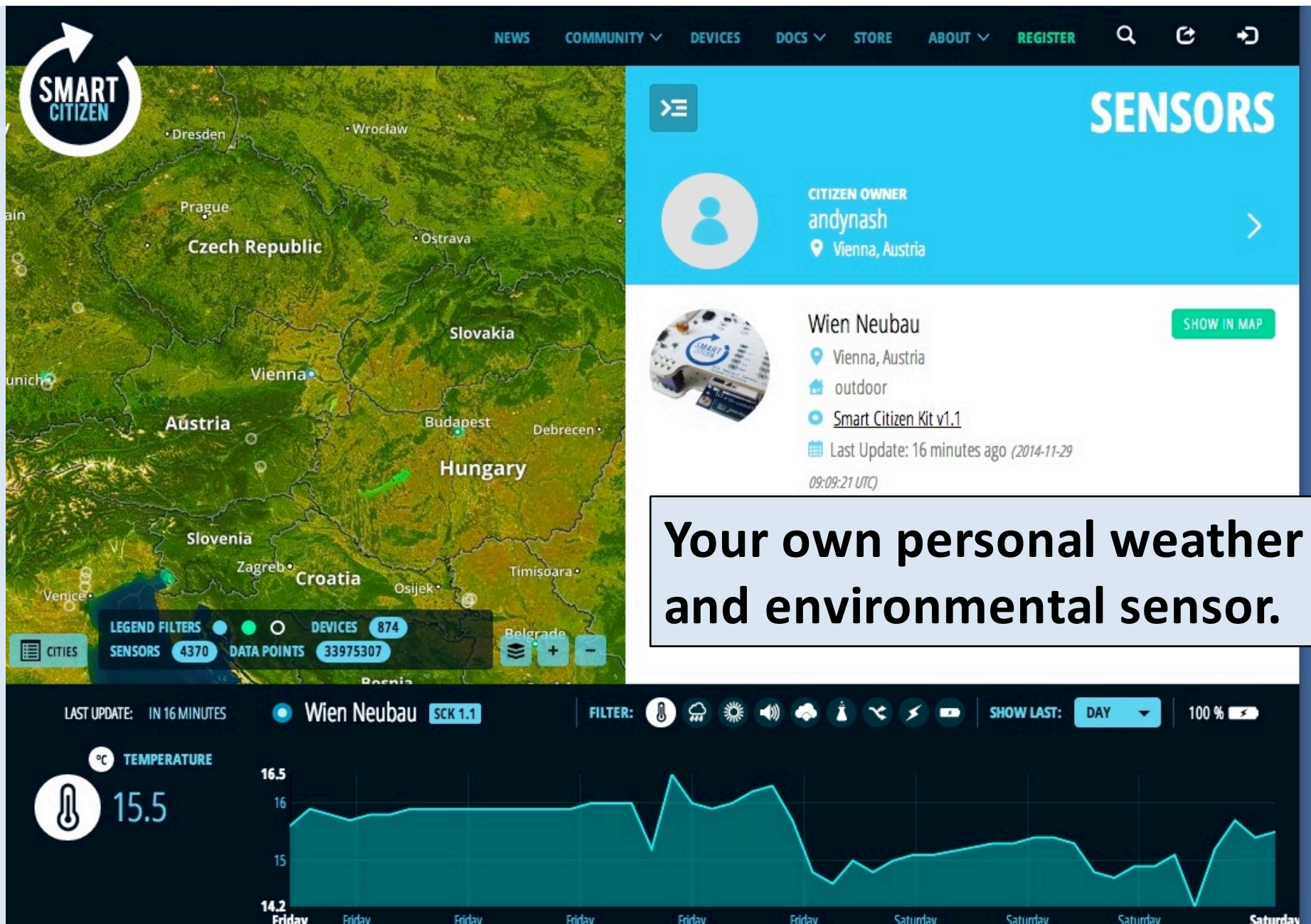
Why Count Traffic?

Data is Power. Collectively, the WayCount user community has the potential to build a rich repository of traffic count data for busy boulevards, bike paths, alley ways, neighborhood streets, and any other traffic path that deserves measurement. With a better understanding of automobile and bicycle ridership patterns, we can inform the design of better cities and towns.

Your own personal traffic counter.
Cost: 200 Euros.

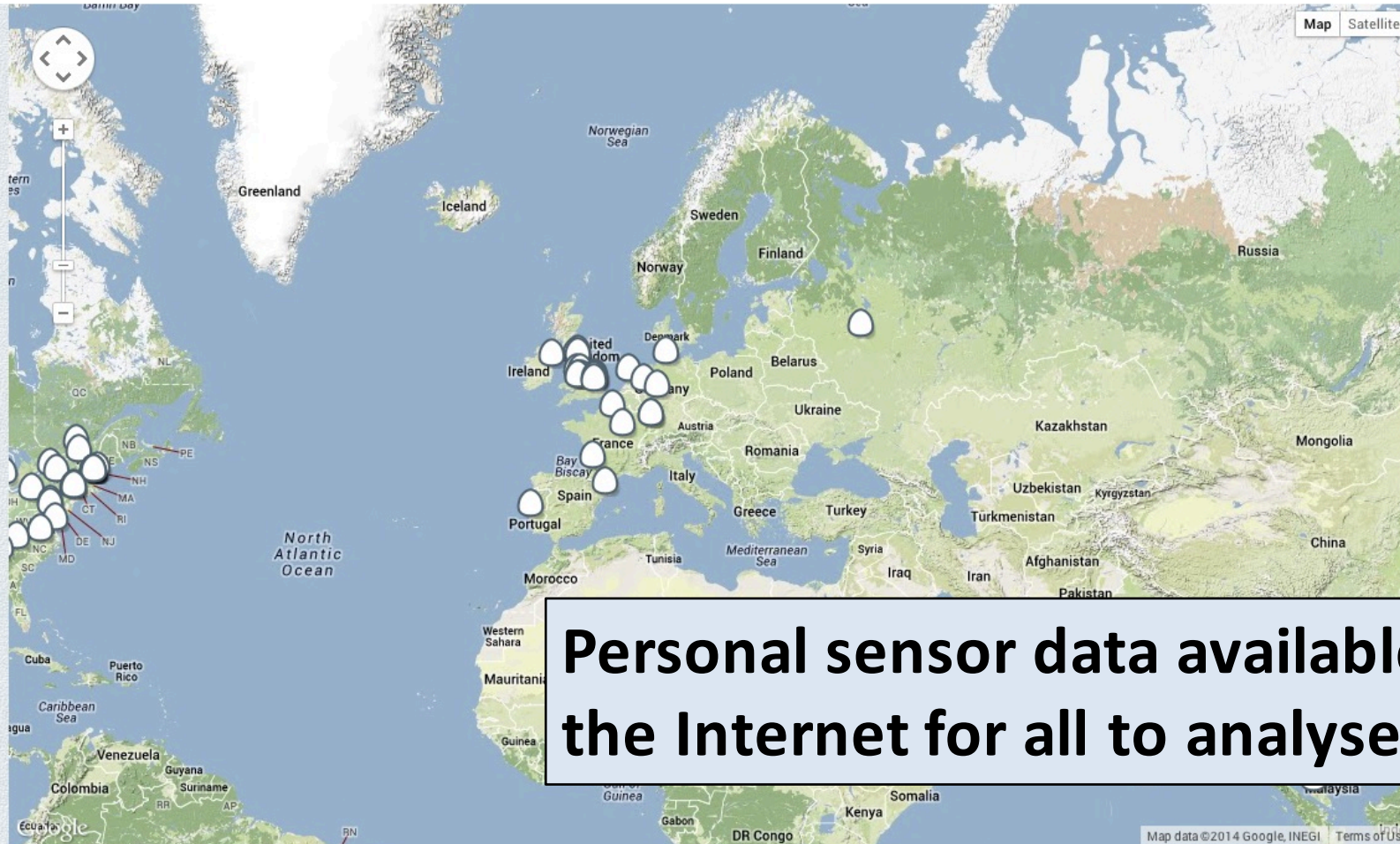
necessary improvements to the design, maintenance, and policy of transportation systems.

This information can be used in combination with, or separately from, conventional measurements like Annual Average Daily Traffic (AADT). AADT is a standardized indicator for measuring the rate of automobiles traveling down a street and is a value used by transportation engineers to help guide changes to



Your own personal weather and environmental sensor.

Smart Citizen sensor and software <http://www.smartcitizen.me/>



Personal sensor data available on the Internet for all to analyse.

What is it?

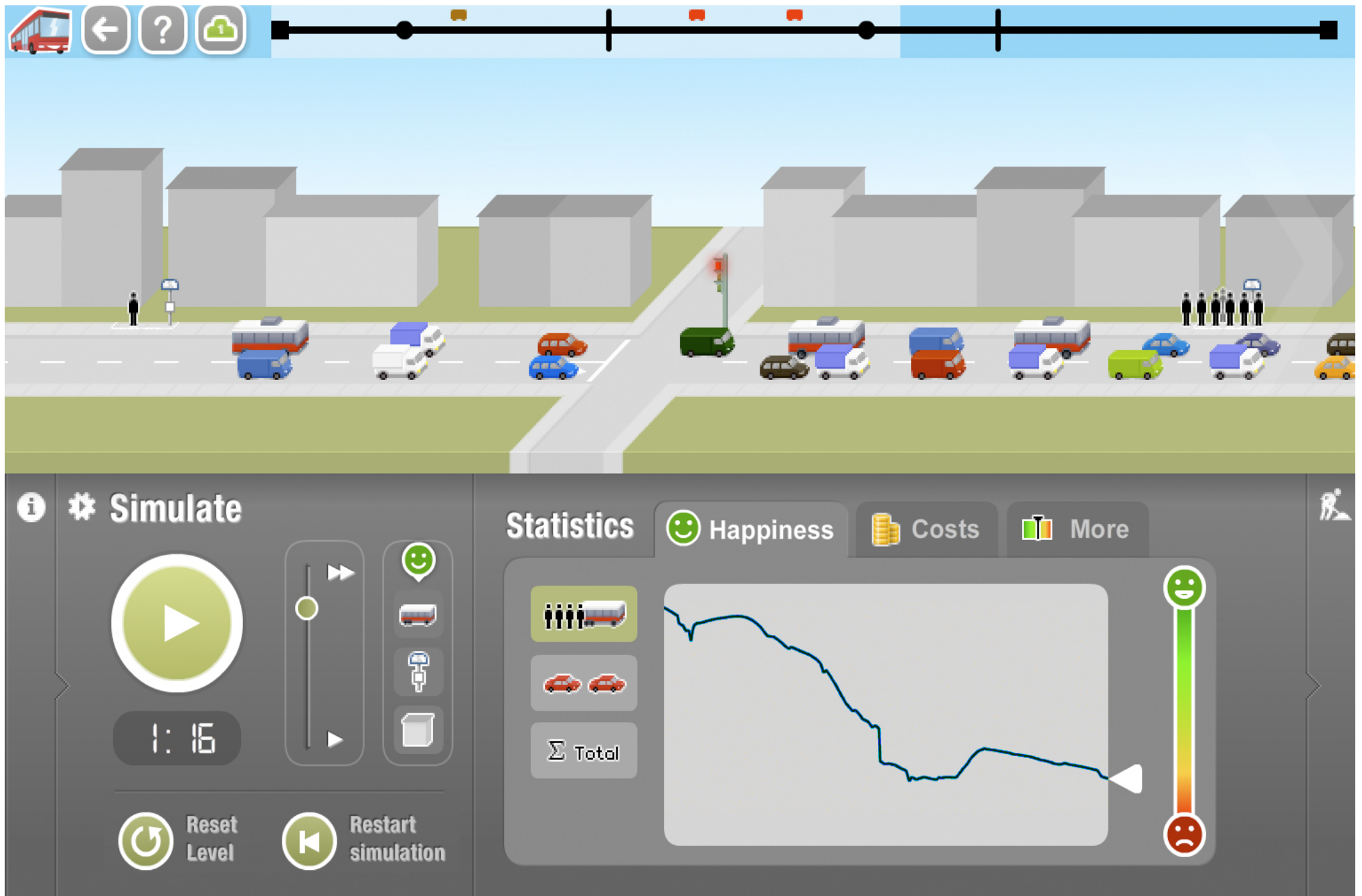
A community-led air quality sensing network that gives people a way to participate in the conversation about air quality.

Design

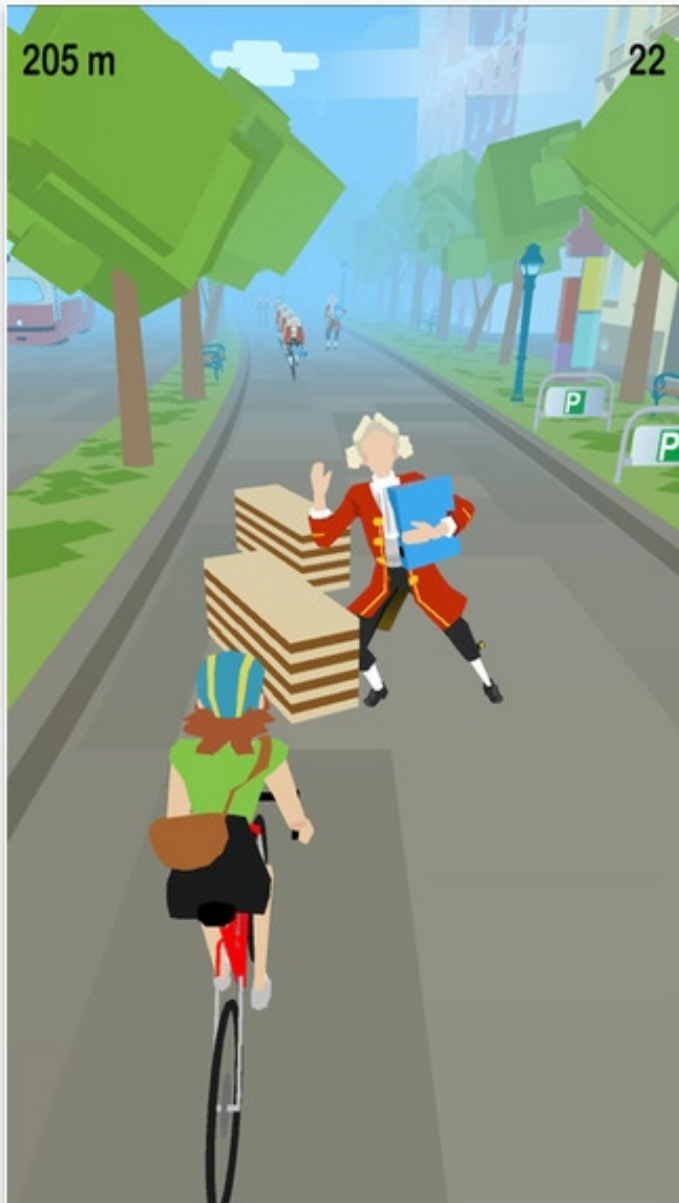
Collaboration is becoming more *efficient*

- Education – transport planning is complex;
- Better processes – meeting management;
- Increased engagement – more is better.

Better collaboration improves the quality of ideas, increases the ability to implement and test new ideas, and helps build community spirit.



Bus Meister game → greencitystreets.com – Fun → Learning



Ringstrasse 150 - Ring Ride



Help make the Ringstrasse better



Organisationen



Radlobby Wien

In Wien kümmern sich die Radlobby-Vereine ARGUS (Arbeitsgem



RadKummerKasten

Rad-Ärgernisse direkt an die Zuständigen der Stadt Wien senden? Das geht ganz



Rasen am Ring

Die Plattform „Autofreie Stadt“ tritt am Internationalen Autofreien

Ring Ride game → ringstrasse150.com – Fun → Advocacy

[Forum](#)[Game](#)[Best Practices](#)[Login with Facebook](#)

Sustainable Urban Transport

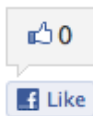
Helping you make transport in your city more sustainable.



GreenCityStreets Forum

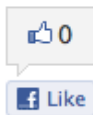
The GreenCityStreets Forum provides a place for you to recommend sustainable transportation ideas for your community. You can support (Like) or comment on ideas already in the Forum or add your own ideas. Use the links to display all the ideas for a city, for a public transport line or from another user. Beta Version - Everyone can read GreenCityStreets Forum posts but currently you need to login via Facebook to add posts, support or comment.

Latest Forum Posts



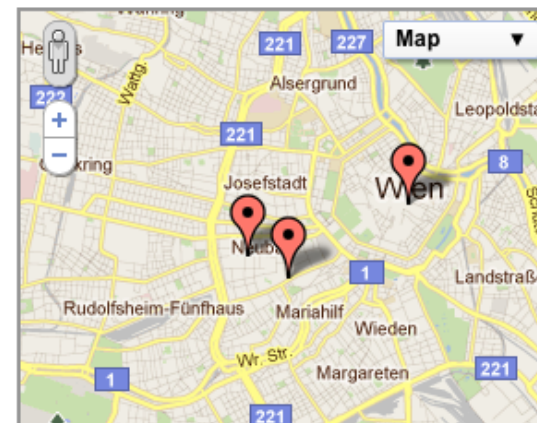
Wien | 13A stuck in traffic **13A**

in mariahilfstrasse 60, Wien
by [Andrew Butler Nash](#) about 1 hour ago



Wien | Tram 49 comes in bunches **49**

in Westbahnstrasse, Wien
by [Andrew Butler Nash](#) about 1 hour ago




GreenCityStreets.com ... Facebook-based collaboration

Citymapper is offering Londoners journeys involving Crossrail, which doesn't exist yet

Unless you live in a rural area, or your phone battery ran down in 2012, or you're still relying on a Nokia with a copy...

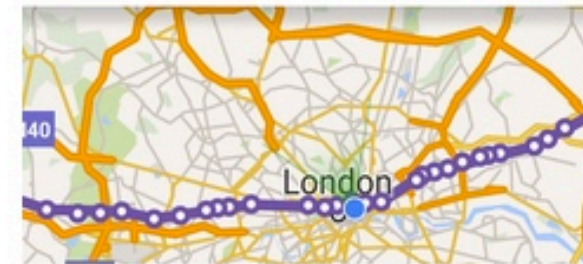
www.citymetric.com

Crossrail

STATUS 

TWITTER

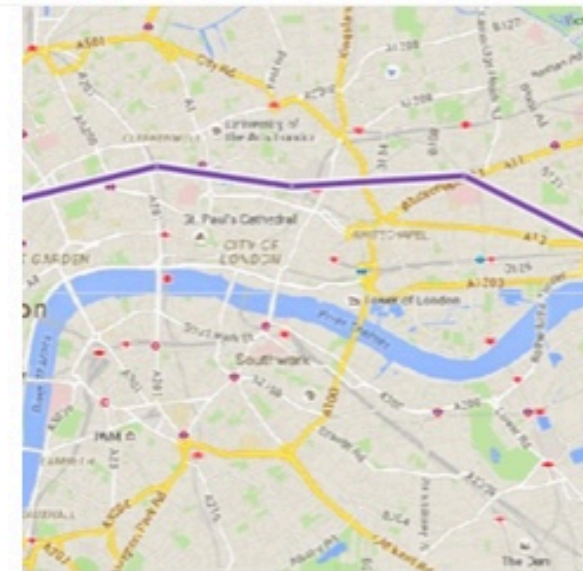
ion: Shenfield · Maidenhead ▾



You can now see how much shorter your commute will be in the future via Crossrail using Citymapper

Canary Wharf to Oxford Circus in 26 minutes? Doesn't sound too bad. According to Citymapper, that's how long it will...

uk.businessinsider.com



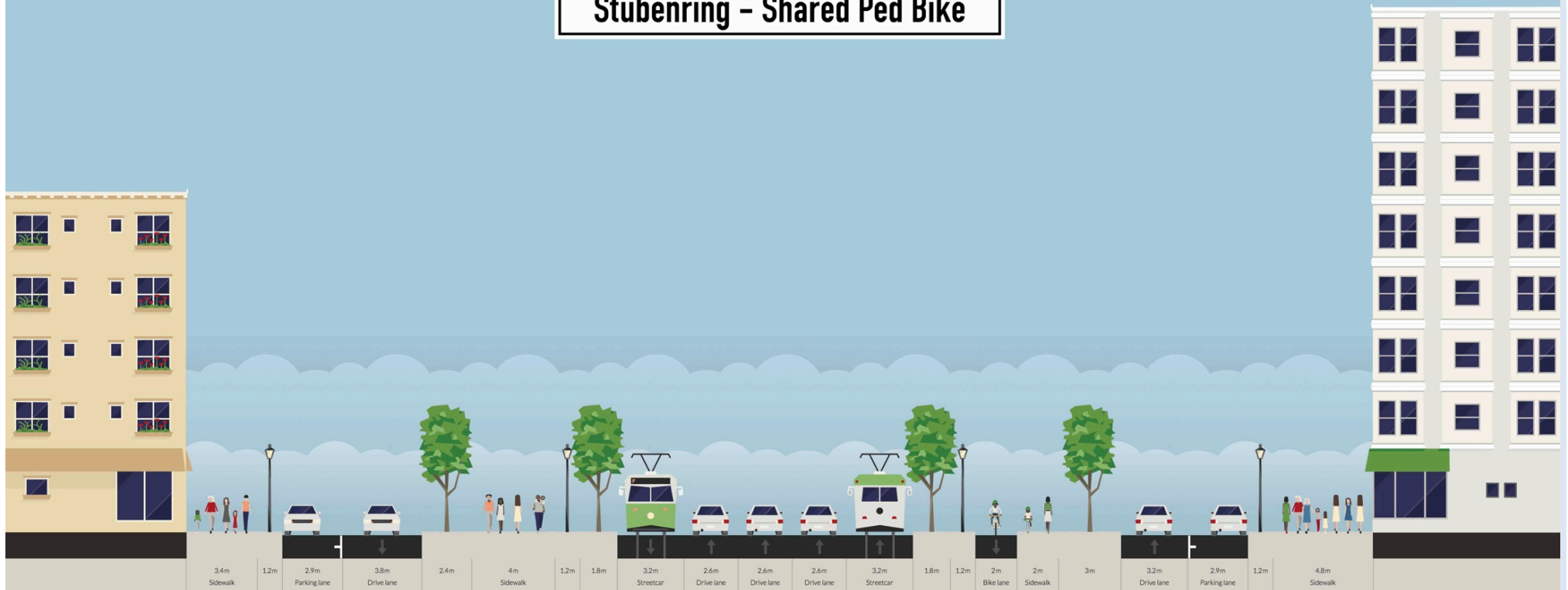


Visualization ... Participatory Chinatown Boston

Using virtual reality to help understand city planning.

<http://www.participatorychinatown.org/>

Stubenring - Shared Ped Bike



Visualisation of street cross sections... **streetmix**

<http://streetmix.net>

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SUPPORT GOOD IDEAS.
SHARE WITH FRIENDS.**

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Or sign up with [your email address](#)

487

Like

Share

447

Tweet

140

Share

48

+1

0

Email

PROJECT DETAILS

- About the Project
- How It Works
- Who's Listening?
- Rewards Store

Select Language

Powered by [Google Translate](#)

CONTRIBUTORS

| 1 | lucy A | 56 |
|---|-----------|----|
| 2 | David D76 | 44 |
| 3 | kilty B | 10 |
| 4 | Ronald M | 2 |

Use your points to get Rewards →

Living Innovation Zones

Civic Innovation:
What innovative project would you like to see on the sidewalks of Market Street?

The Living Innovation Zones (LIZ) program is all about bringing San Francisco's innovative spirit and ideas out onto the streets to create spaces to learn...

3498 209 5 Days Remaining

My idea is... [Add Idea](#)

CATEGORIES

Neighborhood Stories
Neighborhood Stories

[View Challenges](#) 620 Interactions

Transportation & Mobility
Transportation & Mobility

[View Challenges](#) 6789 Interactions

San Francisco Mind Mixer website

www.improveSF.com



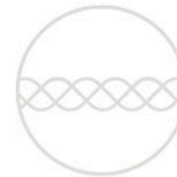
1. Talk things through

Start a discussion on any topic, and bring in the right people. Share diverse perspectives and develop ideas together.



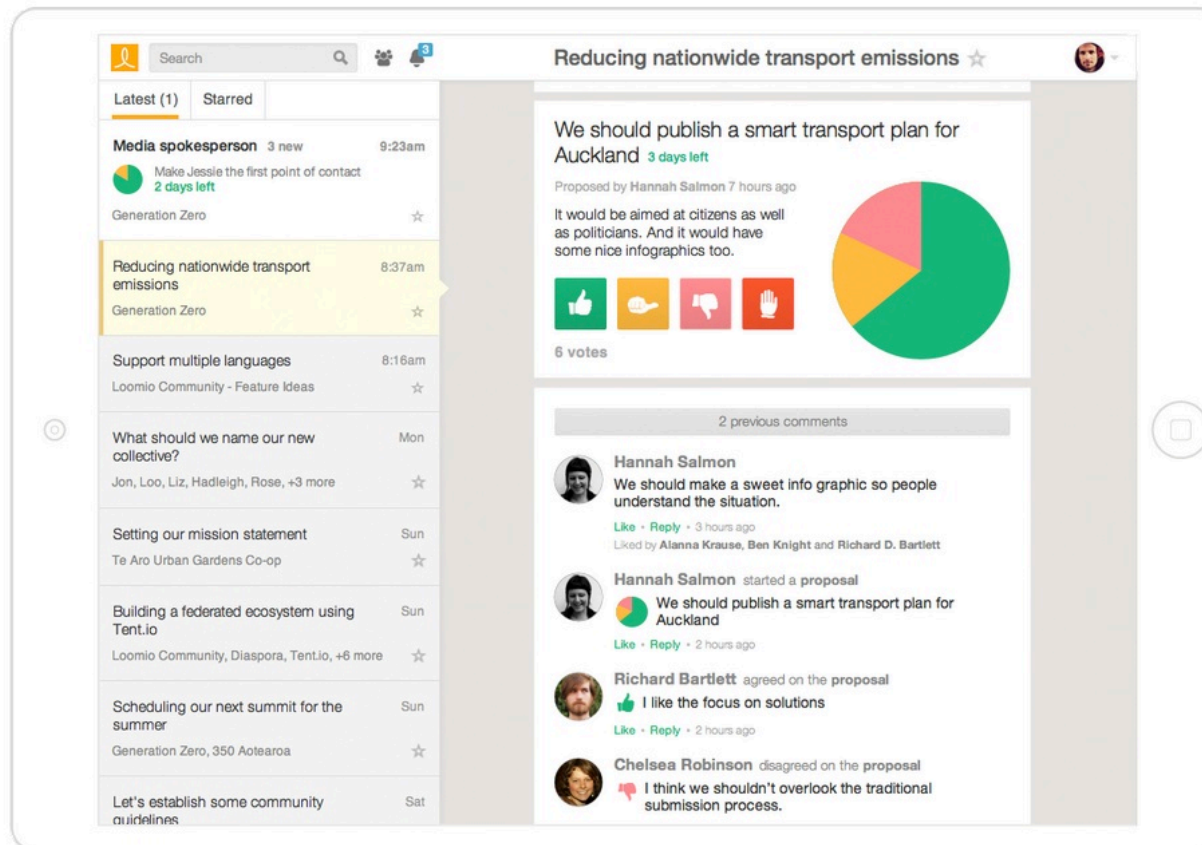
2. Build agreement

Anyone can propose a course of action. People can agree, abstain, disagree, or block – so you can see how everyone feels, and why.



3. Decide together

Develop the proposal together so that it works for everyone. Every decision has a clear deadline, so you always get a clear outcome.



Loomio – public infrastructure for collaborative decision making
www.loomio.org - the application was crowd-funded!

Provide

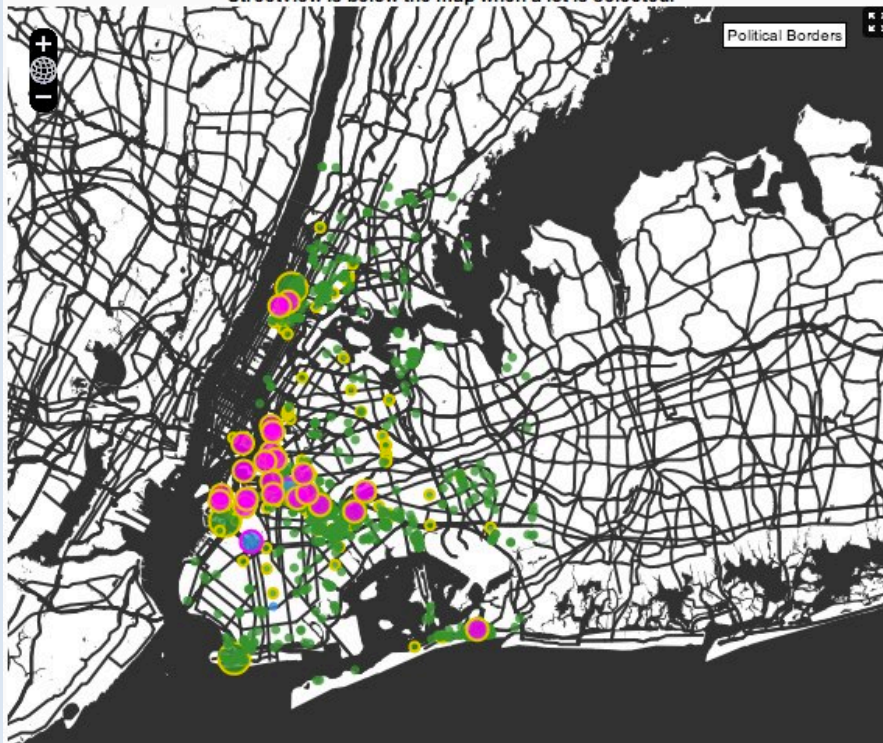
Providing transport is becoming *open*

- Status information via social networks (Twitter);
- Implementation via civic groups (596 Acres, Casserole);
- Behaviour modification (Chromaroma, Walk-a-Stop);
- Crowd-sourced civic works (Spacehive, Kickstarter);
- Service providers & sharing (Uber, BlahBlahCar, Bridj).

*... how does **crowdsourced production** impact public transport?*

Lot size: 0 to 3+ acres

Streetview is below the map when a lot is selected.



This map shows sites of potential community projects. We have taken several different sources of information about vacant publicly owned land, chosen the most accurate information from each and shared them here. This is our commons. We also add few private lots whose owners have volunteered their land for community use.

- ☒ public vacant lots
- ☒ public vacant sites being organized around (114)
- ☒ public vacant sites where groups have access (22)
- ☒ private vacant sites (1)
- ☒ private vacant sites being used by community (3)
- ☐ community gardens on public land
- ☐ gutterspaces



Upcoming Events

596 Acres at GreenThumb Grow Together in the Bronx

Saturday, March 29 from 8:30 a.m. to 4 p.m.

596 Acres' Citywide General Organizing Meeting

Saturday, April 5 from 1 p.m. to 3:30 p.m.

Book Binding with 596 Acres at Build It Green in Gowanus!

Saturday, April 5 from 1 p.m. to 3:30 p.m.

[view all upcoming events](#) | [view past events](#)

Recent news

News From the Acres - March 20, 2014

March 20, 2014 in [news from the acres](#)

Vacant Acres Dinner at the Sunview with Uncle Ruth

March 17, 2014 in [Other Cities](#)

News From the Acres - March 13, 2014

March 13, 2014 in [news from the acres](#)

Information exchange and organisation ... 596 Acres

Search for lots near an address:

Boroughs:

☒ Bronx

☒ Brooklyn

☒ Manhattan

☒ Queens

You are currently looking at:

1221 public vacant sites on **1375** lots on **432.592** acres ...how big is that?

114 public vacant sites being organized around on **214** lots on **54.025** acres ...how big is that?

22 public vacant sites where groups have access on **37** lots on **4.218** acres ...how big is that?

1 private vacant sites on **1** lots on **0.305** acres ...how big is that?

3 private vacant sites being used by community on **3** lots on **0.163** acres ...how big is that?

0 community gardens on public land on **0** lots on **0** acres ...how big is that?

0 gutterspaces on **0** acres ...how big is that?



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.

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.

IT'S NOT TOO FAR.

Plan, design and install quick, light and affordable street signs for people.

 Follow @WalkYourCity

 Like 2.2k



Atlantic Beach, NC

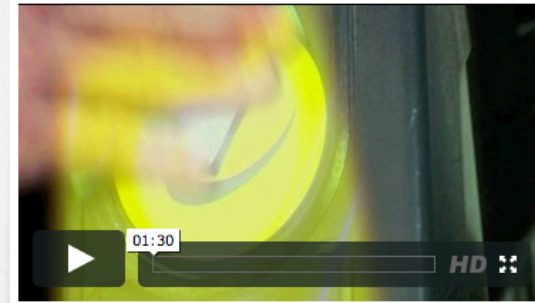
 Feedback & Support

HOW IT WORKS

Chromaroma, adding colour to your journeys

A new game for London...

Sign Up Now or [find out more](#)



Use your Oyster card to play online

Chromaroma takes your travel data
and makes it into a game where every journey
counts in a competition for the city!

Play with friends or compete against them

Set records, earn
achievements, go on real missions.
Travel like you mean it!



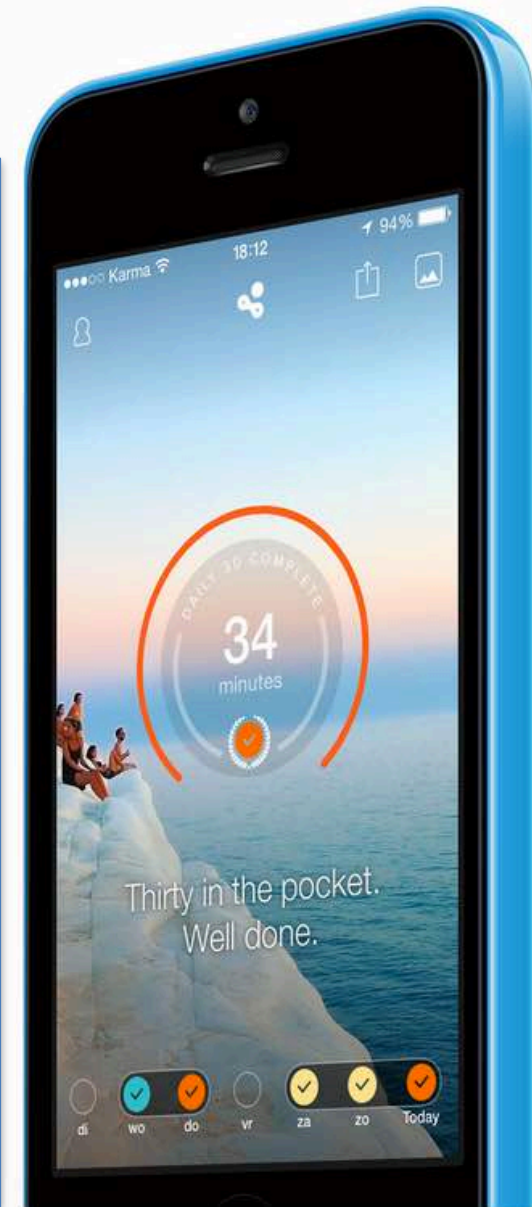
Chromaroma game → Fun → Influence behaviour



Human is an all-day activity & calorie tracker that inspires you to move 30 minutes a day.

Activity monitor (e.g., Human)
+
Public transport travel planner
+
Real time transport data (official / user)
+
Social networking
=
Walk-a-Stop

Users receive push data when stations are crowded suggesting they walk or bike one or two stations. Activity is rewarded (transit tickets), social networking provides info about good routes, interesting shops, companions to walk with, and/or system suggests, *It's a nice day why not walk?*



Walk-a-Stop → Info + Social Network → Influence behaviour

the love shack bus stop

by Dana Jo

[Home](#)[Updates](#) **23**[Backers](#) **88**[Comments](#) **6**[Athens, GA](#)[Public Art](#)

Funded! This project was successfully funded on Jan 3, 2012.

Update #22

Mar 2 2012

[love shack bus stop is finished and installed!]

2 comments [Like](#)

{hey there everyone, i have some pictures up on my website that you you can see by [clicking here](#). also, if you did not get to pick up your backer rewards at the opening, i will be mailing them to you on monday as well as the prints for my \$75-100 folks. again, thank you all so very much for helping make the love shack bus stop a reality!}



88

backers

\$3,015


pledged of \$2,500 goal

0


seconds to go



Project by
Dana Jo
Athens, GA
[Contact me](#)

 First created · 2 backed

 Dana Jo Cooley 1120 friends

 [danajocooley.com](#)

[See full bio](#)

Pledge \$5 or more

 14 backers

a postcard art print of the love shack

Crowdfunding for civic improvements ... **Kickstarter**

The logo for BlaBlaCar, featuring the words "Bla Bla Car" in a sans-serif font. "Bla" is green, "Bla" is blue, and "Car" is red. The logo is centered at the top of the page.

Bla Bla Car

Trusted ridesharing

Connecting people who need to travel with drivers who have empty seats

Choose the country for your rideshare



Confirm

[HOME](#)[ANNOUNCEMENTS](#)[SERVICE AREA](#)[WE'RE HIRING](#)

CONNECTING THE CITY

Bridj is your everyday transportation system that adapts in real time to where you live work and play.

App-based public transport

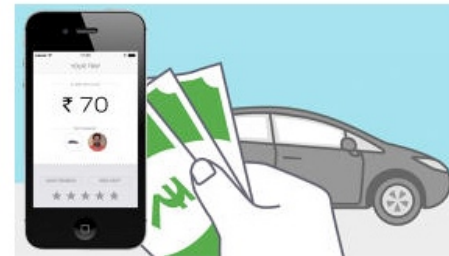


Uber



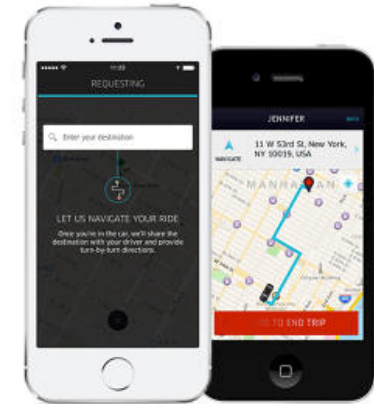
UBER'S BIG BET #1: UBERPOOL

This service lets riders heading the same way share an Uber and save. CEO Travis Kalanick believes that UberPool "has the potential to be as affordable as a taxi and as convenient as a car."



UBER'S BIG BET #2: CHINA AND INDIA

"To put it frankly, China represents one of the largest untapped opportunities for Uber, potentially larger than the U.S.," Kalanick wrote investors in a letter this spring. The same goes for India, where, befitting Uber's hyper-localized strategy, it has launched auto rickshaws, cash payments, and an SOS safety button.



UBER'S BIG BET #3: DRIVERLESS CARS

Although autonomous vehicles represent

"One of the most subtle underlying issues with the rise of Uber is the company's **slow siphoning of the political will** to fix existing – or build new – public transit infrastructure in major cities. ... The people left riding public transit become, increasingly, the ones with little or no political weight to demand improvements to the system." Matt Buchanan, The Awl, <http://www.theawl.com/2015/08/ubiquity>

Boston will use Waze data to measure 'block the box' ticketing push



Via Flickr user [Robbie Shade](#)



Curt Woodward
[Follow](#)

City officials want to know whether writing tickets actually makes drivers change their bad behavior. They're hoping to get some help from people



Summary

Summary

1. Crowdsourcing is *drastically* changing transport.
2. Information technology has *fundamentally changed the roles* of government, residents, and companies.
3. Crowdsourcing is *already happening* in public transport, at least at the margins.
4. If you don't do it – *someone else* will.

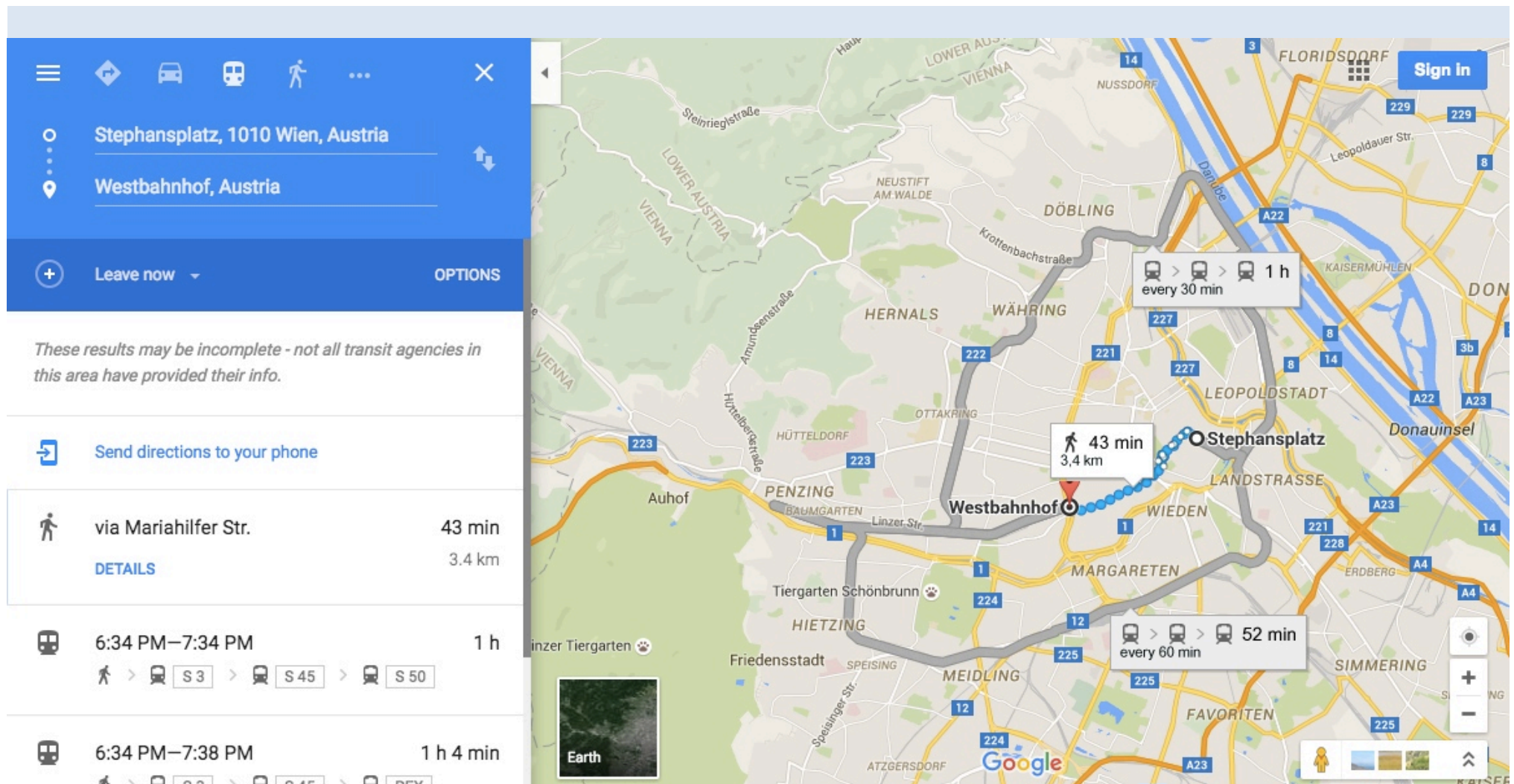
So, the dilemma:

*How can public transport agencies
harness the power of crowdsourcing
for the public good?*

Crowdsourcing and CIPTEC Innovations

CIPTEC identifies **31** innovations (big to small!)

1. Hard for any one agency to do them all (**alone**).
2. Most ***lend themselves to crowdsourcing*** solutions.
3. Agencies could **share** a set of open source solutions.
4. Recognise that someone is already working on these and they will be happy to **sell** you a solution!



Don't reinvent the wheel ... Google Maps Transit

WienerLinien does not provide data in GTFS format: users directed to railway and many other apps not available (CityMapper).



Andrew Nash develops engaging public participation applications and games designed to improve city live-ability and transport.

- GreenCityStreets.com
- Ringstrasse150.com
- AndyNash.com