transition.city: bringing transit planning in the hands of everyone

Presented by Yannick Brosseau

Room: 106
Start: 15:00
Story

Bus synchronicity in Verdun
http://transition.city
https://github.com/chairemobilite/transition/

https://yannickbrosseau.com
« Make a transit planning tool that answers the needs of professional planners but is easy enough for everybody »
Aren’t you a kernel engineer?
... In a mobility research team

https://www.polymtl.ca/mobilite/
Applied research: Our toolbox

- Evolution (Travel survey platform)
- Os2car (Congestion)
- Octavi (Taxi)
- Transition (Transit planning)
  - Include TrRouting
Transit planning 101
Description of the tool
- Functionalities
- How it's made
Open Data source
Live Demo??
Research challenges
What is transit planning?
Who are we targeting?

- Transit planners
- Civil servants
- Elected officials
- General public
Simulation and optimisation

- Genetic algorithm
Modern C++ routing engine for shortest paths in road networks.

- Flexible import of OpenStreetMap data.
- Handles continental sized networks within milliseconds.
- Supports car, bicycle, walk modes; easily customized through profiles.

Get in Touch.
- IRC Channel
- Mailing List
- Twitter
trRouting

• Connection Scan Algorithm (CSA)
  – https://i11www.iti.kit.edu(extra/publications/dpsw-isft
r-13.pdf
    • Intriguingly Simple and Fast Transit Routing?
    • Julian Dibbelt, Thomas Pajor, Ben Strasser, and Dorothea Wagner, from Karlsruhe Institute of Technology (KIT)

• Written in C++ (Might convert to Rust)
Data Sources

- Road and path network
- Transit network
- Population and places
- Trips
Open Data

- Open Database License (ODbL)
OpenStreetMap

• Most of the required information
Validating the map

- Pedestrian and cycling link (with connection and access tags)
- Split sidewalks and cycling paths
- Add doors on big buildings
- Realign streets, check one ways, speed limits
- Add all POIs (At least with types and name), draw commercial and industrial buildings, add numbers of floors
GTFS

- General Transit Feed Specification
- 2 variants:
  - Schedules
  - Real-time
Open Metro

Welcome! Here you'll find a variety of Metro data and reports with more added all the time. We're committed to an open and transparent Metro and invite you to use this information to help us improve your system.

CTFS Schedule Data
The Google Transit Feed Specification is an open format that Google created to allow transit agencies to easily provide schedule data to Google Transit.

GIS Data
GIS Data are shapefiles representing existing or planned Metro Rail, Metro fixed-guideway buses, and Metro-owned railroad rights-of-way (ROW).
The Mobility Database

https://database.mobilitydata.org/

The Mobility Database catalogs is a repository of 1800+ mobility datasets across the world. It has over 150 updated datasets previously unavailable on TransitFeeds (OpenMobilityData).

We're in the first phase of building a sustainable, central hub for mobility data internationally.

See the catalogs repo  Download the catalogs CSV

What about TransitFeeds?
Population

- OSM Buildings
- Land use registers
- Census information
Travel surveys
Future plans
References

• Chaire Mobilite publications and reports :
  – https://www.polymtl.ca/mobilite/publications

• Transit Network Design using a Genetic Algorithm with Integrated Road Network and OD Matrix
Attributions

- https://commons.wikimedia.org/wiki/File:M%C4%9Bln%C3%ADk,_Gar%C3%A1%C5%BEe_%C4%8CSAD_St%C5%99edn%C3%AD_%C4%8D%C3%A1st_Irisbusu_Crossway.jpg
- https://pixabay.com/photos/lab-laboratory-research-scientific-385348/
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