2 cases of collaborative mapping: Road safety + Cycling
MUNICIPAL PLANNING INSTITUTE OF MORELIA, MEXICO
The City of Morelia

Morelia is 300 km away from Mexico City

Fuente: Anuario estadístico de los Puertos de México, 2010
The State of **Michoacan**

Morelia is the capital city of **Michoacan State**
Municipality of Morelia

Population: 784,776 people (INEGI, 2015)

Surface: 1,200 km²

Municipality of Morelia. Administrative limits
- Morelia City
- Rural population
- Municipal limit
- Tenancy limit

Source: INEGI 2010
The City of Morelia

Population: 637,511 inhabitants

Workforce: 286,700 inhabitants

Surface: 127 km²
E-W: 21.8 km
N-S: 10 km

Density: 5,019 inhab/km²

Car Ownership: 688 cars/ 1000 inhabitants

(INEGI, 2015)
Modal Split of Morelia

**LOGIT SURVEY, 2013**

- Walking: Includes people who made modal transfer
  - 45%
- Public transport
  - 30%
- Private car
  - 20%
- Taxi
  - 1.9%
- Bicycle
  - 1.3%
- Motorcycle
  - 0.6%

The rest of the trips are made in scholar bus and workers bus.

**INEGI INTERCENSAL SURVEY 2015**

- Public transport
  - School Trips: 34%
  - Work Trips: 45%
  - Total Trips: 40%
- Private car
  - School Trips: 17%
  - Work Trips: 29%
  - Total Trips: 24%
- School/work transport
  - School Trips: 4%
  - Work Trips: 0.6%
  - Total Trips: 2.4%
- Bicycle
  - School Trips: 1.9%
  - Work Trips: 0.3%
  - Total Trips: 1.1%
- Walking
  - School Trips: 31.6%
  - Work Trips: 0.9%
  - Total Trips: 31.6%
- Others
  - School Trips: 0.9%
  - Work Trips: 0.1%
  - Total Trips: 0.9%

*Fuente: LOGIT, 2013*
1. IMPLAN Collaboration on road safety

The **State Council for Accidents Prevention of Michoacán** (COEPRA Michoacán) is a regional governmental organism, formed by a great variety of state-owned institutions involved in the topic of prevention of accidents.

Through the collaboration with **COEPRA Michoacán**, the Technical Secretariat of the National Council for Accidents Prevention (STCONAPRA) and the **National Observatory of Injuries**, it was possible to develop a *heat map* for a better comprehension of the *risk areas* (for all modes of mobility) in the road network of the city of Morelia.
Road accidents density for area unit (25m x 25m)

High
Medium
Low

Roads

Concentration of road accidents in the city of Morelia, 2017

Macrolocalización

Simbología

Road accidents density for area unit (25m x 25m)

High
Medium
Low

Roads

Especificaciones cartográficas

Especificaciones cartográficas:
Datum: WGS 1984 Proyección: UMT Zona 14N

Evolución: Febrero 2018

Escala gráfica: 0 - 750 - 1,500 - 3,000

2. Collaborative Mapping of Cycling Networks

The Collaborative Mapping of Cycling Routes consisted in four main phases:

1. Elaboration, with ONG Bicivilízate Michocán AC, of a methodology, which is formed by an online survey and the “Repubikla” open data platform.

2. Approaching to the 3 main public universities (UMSNH, ITM, UNAM) of Morelia, with their support for hosting the workshops.

3. Registration of cyclist routes in Repubikla.org and application of a route-referenced online survey, by students, academic personal and the involved universities neighbors.

4. Data analysis.
Repubikla es una plataforma de mapeo alimentada por ciudadanos que con una estrategia de crowdsourcing busca generar y centralizar datos sobre la movilidad no motorizada en las ciudades.

Surge de la comunidad OpenStreetMap México con el objetivo de complementar información oficial y ofrecer un diagnóstico sobre el volumen y la diversidad de los desplazamientos ciclistas, la intermodalidad, la movilidad en grupo, la infraestructura, la siniestralidad y la inseguridad en el espacio público. Así los tomadores de decisión y la sociedad civil quedan dotados de una herramienta de diagnóstico para impulsar y diseñar mejores condiciones para una movilidad sustentable y segura.

Las noticias sobre el proyecto se publican [aquí](#).
Approaching to 3 Public Universities

- Morelia’s Institute of Technology
- Architecture Faculty
  St. Nicolás de Hidalgo Michoacan University
- Higher Education National School
  Morelia Campus
  Autonomous National University of Mexico
Mapping process of cycling routes and Survey filing

The drawing process of the cycling routes and the survey filling were made in periods of 3 days for each university, where they provided with computer rooms for the people to assist and give their information.

There were marked **254 routes** by **198 participants** in total.
Results map: Density of **cycling routes**
Results map: **Bicycle infrastructure** approach
Results in the city: **Shared bicycle infrastructure**
Results in the city: **Shared bicycle infrastructure**
THANK YOU

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