Urban or Leisure Cycle Paths?

Proposing a methodology for ranking the cycle paths of Rio de Janeiro according to its relationship to the city’s centrality and demographics.
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Felling lucky?

Two routes - one a 99% through segregates cyclepaths, the other 70% through streets.

Safe route is 33% longer.
So, what about Rio’s Cycle paths?

• What is the extension of Rio’s cycle paths on segregated lanes from traffic, what is the extension on shared lanes, and what is the extension over the sidewalks?

• How many cycle-routes were erased in recent tarmac recaps?

• Is the cycle-path network designed with the same logic as the road system, i.e., as a rational network?

• What is the extension of the cycle routes are isolated from the sidewalks and buildings, how much of them are isolated from the centralities?
Quick Look

The executed cycle paths on Centro and Zona Portuária.
Quick Look
The executed and planned cycle paths on Centro and Zona Portuária.

Executed 3,04km.
Planned 48,17Km
Quick Look

The cycle paths on Centro and Zona Portuária.
Quick Look

The cycle paths on Centro and Zona Portuária.


Km of Cyclo path for 100,000 Inhab:
- Executed: 6,29
- Planned: 9,59
Quick Look

The cycle paths on Copacabana
Quick Look

The cycle paths on Copacabana

Executed___15,28km.
Planned_____5,47Km
The cycle paths on Copacabana

The cycle paths are close to the centralities, but as a general rule, avoid them.
Quick Look
The cycle paths on Copacabana


Km of Cyclo path for 100,000 Inhab:
Executed: 9,50
Planned: 12,89
Quick Look

The cycle paths on Tijuca, Vila Isabel and Catumbi
Quick Look

The cycle paths on Tijuca, Vila Isabel and Catumbi

Executed: 10.84 km
Planned: 11.36 km
Quick Look

The cycle paths on Tijuca, Vila Isabel and Catumbi

Planned cycle-paths pass through the centralities, linking Saens Pena to the Business Center, but not to the west side of this neighborhood.
Quick Look

The cycle paths on Tijuca, Vila Isabel and Catumbi

Population 410,670 Inhab.

Km of Cyclo path for 100,000 Inhab:

Executed 2.64
Planned 5.40

demographic density (Hab./ Ha)
5 - 30
30 - 60
60 - 200
200 - 400
400 - 1200
1200 and denser
Ranking between Urban and Leisure

Urban vs Leisure and Sub-urban

**Urban Cycle Paths:**
- Has *eyes on the street*: Visual contact with the buildings that are facing to the streets and connected or with easy connection to the sidewalks.
- Close to densely populated areas.
- Close to centralities areas.

**Leisure or sub-urban cycle paths**
- Has no *eyes on the street*.
- **Leisure or sports:**
  - More than 100m from centralities or populated areas.
  - Has a landscape appeal, is in or a leads to a tourist spot.
- **Sub-urban:**
  - More than 100m from centralities or populated areas.
  - Connect neighborhoods or centralities.
  - Has more than a 1.000m of length.
Urban Cycle Paths:

- Close to densely populated areas.
- Close to centralities areas.
- Has *eyes on the street*: Visual contact with the buildings that are facing to the streets and connected or with easy connection to the sidewalks.
Leisure or sports

- More than 100m from centralities or populated areas.
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Of the cycle paths or Rio, 41.6Km are on the mountains of Maciço da Tijuca.
Sub-urban cycle paths

- More than 100m from centralities or populated areas.
- Connect neighborhoods or centralities.
- Has more than a 1.000m of length.

The cycle path on Av. Salvador Allende. They are totally isolated from urban areas. Image: Google Street View.

A cycle path estrada do Mato Alto. Image: Google Street View.
Cycle Paths and Centralities:
The heat map indicates clusters of activities.
Cycle Paths and demographic density:

Each polygon is a census sector from IBGE.
Cycle Paths type:
Urban, Sub-urban and Leisure - Sports
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Urban, Sub-urban and Leisure - Sports
Some dense areas, like Grajaú, Maré and Laranjeiras, got their cycle paths, but the map shows that there still no connection between them.

**Cycle Paths type and Urban Density:**

There’s a concentration of urban cycle paths on more dense areas.
Cyclo paths seems to evade central areas, with the exception of the recent Laranjeiras’s (2017) and Av. Rio Branco (2016) Cyclepaths.

**Cycle Paths and centralities:**

With rare exceptions, cyclo paths seems to evade central areas.
Conclusion

We got plans to expand our network, and most of our cycle paths are on urban areas.
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Rio is undergoing a paradigm shift, from an old mentalaty...
Conclusion...?

Some new cyclo paths are very different from the old ones, demanding cyclists to get off their bicycles. The evolution of this segment in Laranjeiras is a good example - and even shows how easy it is to fix some mistakes.

There’s still much to do in Rio yet. We need to produce more data and analyse it. To make our future decisions and policies based on this analyses and even test some ideas.
Data source

- Cycle Path shapes are from Data Rio, Prefeitura da Cidade do Rio de Janeiro. [<http://www.data.rio/datasets/rede-ciclov%CC%81ria-visualiza%CC%81%C3%A7%C3%A3o>]

- Highway system and point cloud for centralities are from Open Street Maps: [<http://overpass-turbo.eu/?template=key&key=highway>]


- Satellite Images and Relief Shades are from Google Maps.