

# A Visual Comparison of Route Choices to Shortest Paths

How Much Do The Used Paths Deviate from The Shortest Paths?

## Shortest Path Flow

The traffic flow would continue to confluence if everyone takes the shortest paths.



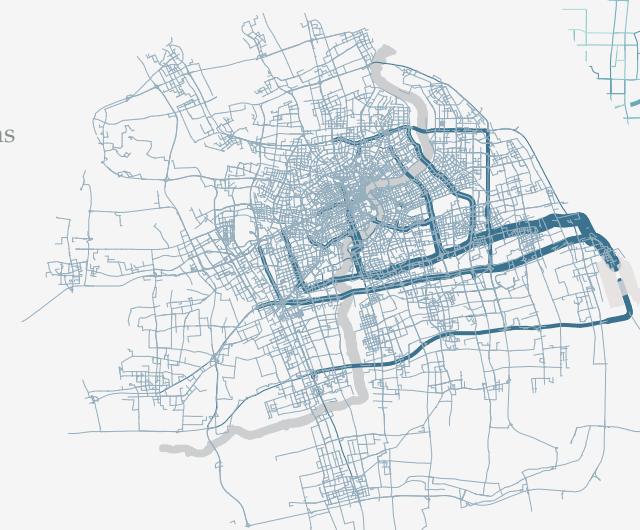
## Multiple Route Choices

However, people may choose different routes even from the same origin.



## Used Path Flow

The real-world traffic flow conforms to the road network structure.



## Preference for Rings

Despite increased deviations, ring-like roads are attractive for higher speed.



## Direct Radial Spokes

Bypassing the city center, radial structures are more aligned with the shortest paths.



## The River Barrier

Both the shortest paths and used paths rely on bridges and tunnels to cross the river.



## The Same Destination

People are less deviated from the shortest paths as they approach the airport.

Projection: Azimuthal Equidistant  
Standard Point: 121.8083°E, 31.1443°N  
10 Kilometers

Scale: Central Map: 1: 250,000  
Shortest Paths Inset: 1: 900,000  
Route Choice Inset: 1: 500,000  
Used Paths Inset: 1: 900,000

Data Source: OpenStreetMap  
Taxi Company  
Cartographer: Yuhua Ji  
Data: Dec/13/2021