

# BEST PLACE FOR A NEW SPORTING FACILITY IN KOŠICE

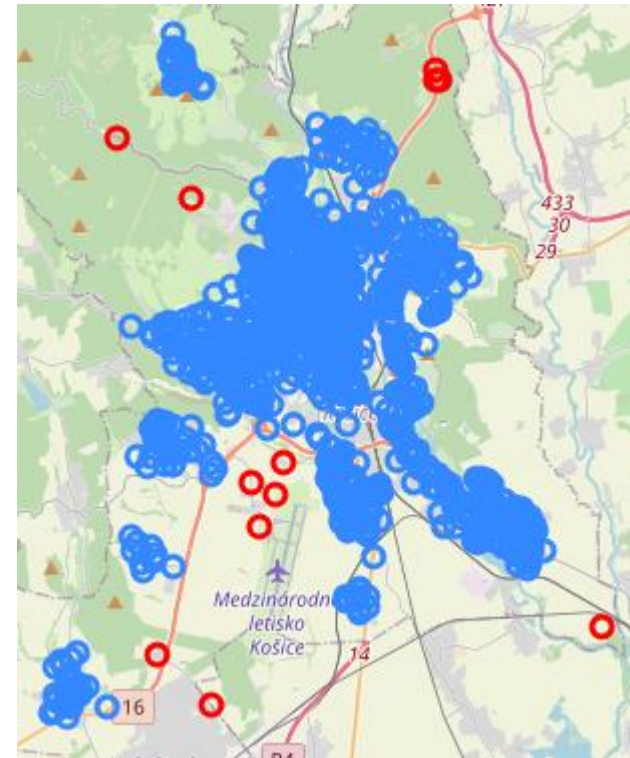
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# WE WANT TO MAKE A SPORT IN KOŠICE

- Find a best place for a new sporting facility based on
  - Highest demand
    - Borough's population
    - Available sporting facilities
  - As far from other facilities as possible
    - Decrease influence of competitiveness

# DATASOURCES

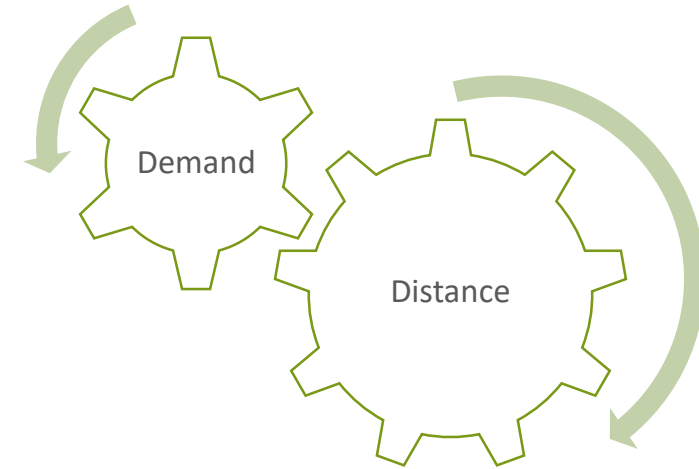
- Boroughs (22)
  - Incl. Population
- Streets (928)
  - Incl. precise location
  - Excl. outliers
- Currently available sporting facilities (~50)
  - Using Foursquare service w/ multiple queries (gym, arena, stadium, tennis, hockey, squash, bowling, golf and badminton)
  - Excl. facilities within school areas
  - Excl. facilities not publicly available
  - Boroughs based on closest street's borough



# METHODOLOGY

- Demand measured by population per one facility

$$Demand = \begin{cases} \frac{Population}{1000 \cdot Facilities} & \text{if } Facilities > 0 \\ - & \text{otherwise} \end{cases}$$



- Best place is a street with maximal distance from the closest facility

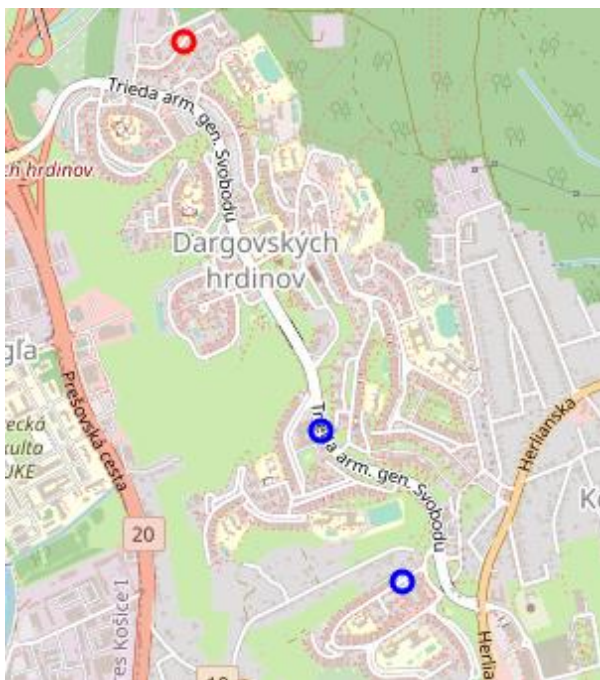
$$\begin{aligned} & \text{Best place} \\ & = \operatorname{argmax}_{street} \{street \mid f(street) = \min_{facilities} \|street - facility\|\}. \end{aligned}$$



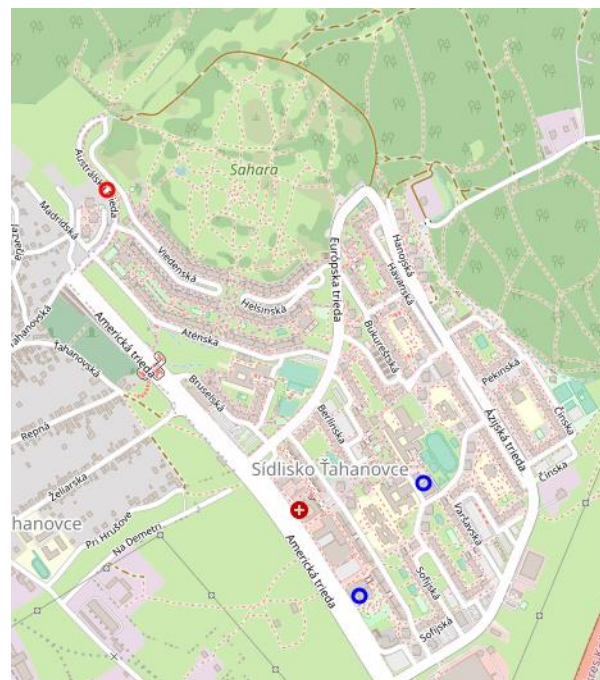
# RESULTS

- Two boroughs, both w/ 2 facilities

Borough	Size [km <sup>2</sup> ]	Population	Facilities	Demand
Dargovských hrdinov	11,09	26 004	2	13,00
Sídliisko Ťahanovce	8,26	22 129	2	11,06
Nad jazerom	3,66	24 613	3	8,20
Sídliisko KVP	1,78	23 603	3	7,87
Šaca	41,21	5 961	1	5,96



**Dargovských hrdinov:**  
Adlerova street



**Sídliisko Ťahanovce:**  
Austrálska trieda