

# **PRELIMINARY ASSESSMENT REPORT TO DETERMINE SUITABLE AREAS FOR NEW GREEN SPACES IN METROPOLITAN PARIS**

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# INTRODUCTION

- Context current pandemic COVID-19
- Growing cities and urban population
- Need for green areas, forests, open spaces
- Building new green areas, managing the existing ones?

# DATA

Wikipedia: source of  
administrative data

	Nom	Pop_2015	Dens_2015	Arr
10	Popincourt	149834	40827	11
17	Buttes-Montmartre	197580	32875	18
19	Ménilmontant	195556	32702	20
9	Entrepôt, anciennement Enclos Saint-Laurent	91770	31754	10
2	Temple	35049	29956	3
16	Batignolles-Monceau	168533	29724	17
14	Vaugirard	234994	27712	15
18	Buttes-Chaumont	185654	27342	19
8	Opéra[ <i>note 1</i> ]	59408	27251	9
12	Gobelins	183216	25625	13
13	Observatoire	139992	24821	14
4	Panthéon	59333	23359	5
11	Reuilly (hors bois de Vincennes)	142340	22345	12
1	Bourse	20796	21006	2
15	Passy (hors bois de Boulogne)	165487	20921	16
5	Luxembourg	42428	19734	6
3	Hôtel-de-Ville	27146	16966	4
6	Palais-Bourbon	54133	13235	7
7	Élysée	36694	9457	8
0	Louvre	16545	9041	1

# DATA

Paris open data: source of geographic data (json and shp files)

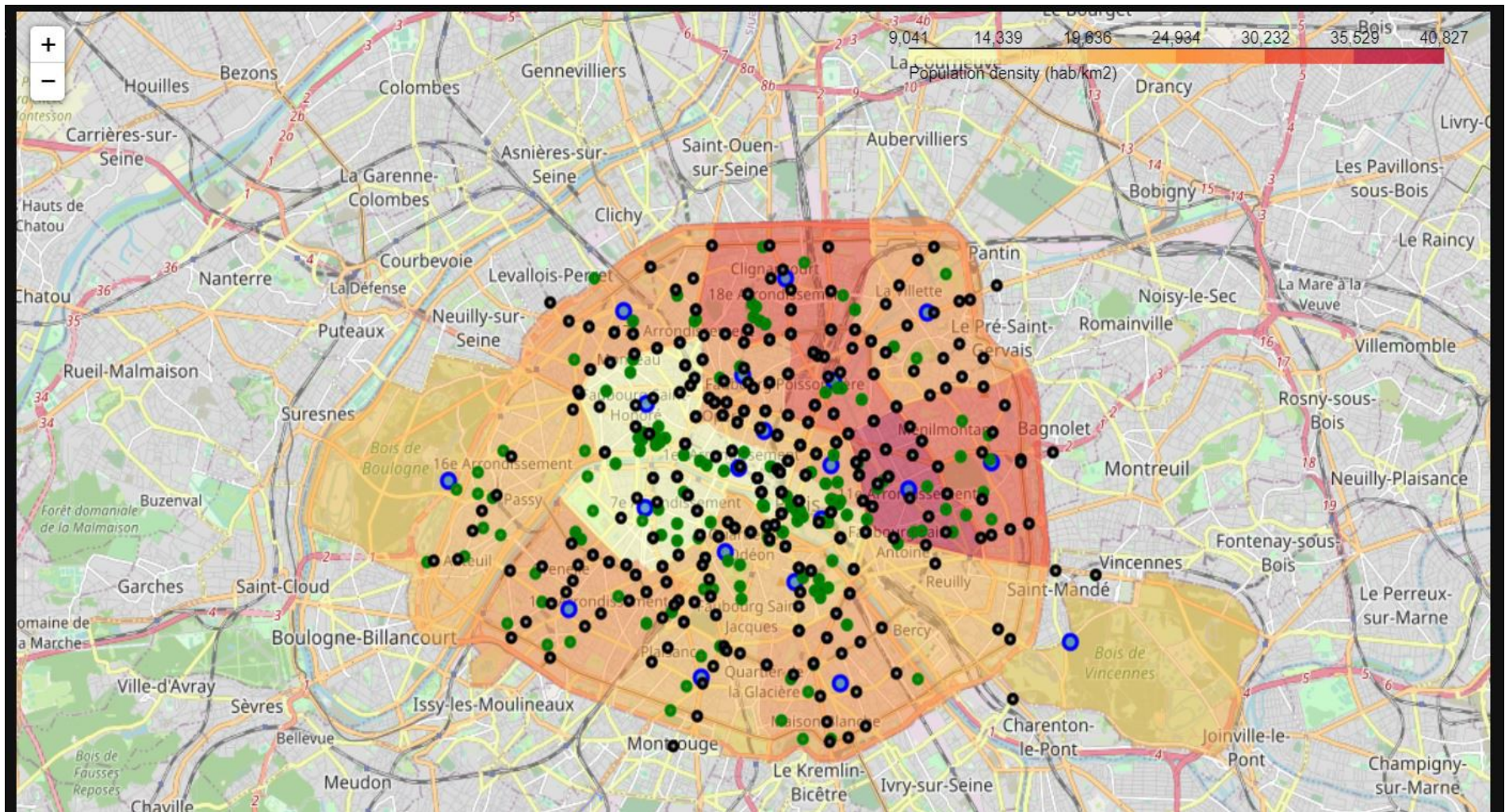
	Nom	Arr	Lat	Lon
0	Temple	3	48.862872	2.360001
1	Palais-Bourbon	7	48.856174	2.312188
2	Panthéon	5	48.844443	2.350715
3	Élysée	8	48.872721	2.312554
4	Reuilly	12	48.834974	2.421325

# DATA

## Foursquare API: garden and transports data

	Neighborhood	Neighborhood Latitude	Neighborhood Longitude	garden	lat_g	lon_g	Venue Category
0	Temple	48.862872	2.360001	Jardin des Archives Nationales	48.859929	2.358660	Garden
1	Temple	48.862872	2.360001	Jardin Anne Frank	48.861695	2.354984	Garden
2	Temple	48.862872	2.360001	Jardin de Sully	48.854987	2.364055	Garden
3	Temple	48.862872	2.360001	Jardin Francis Bourgeois-Rosiers	48.857423	2.360201	Garden
4	Temple	48.862872	2.360001	Jardin de l'Hôtel de Sens	48.853842	2.358404	Garden

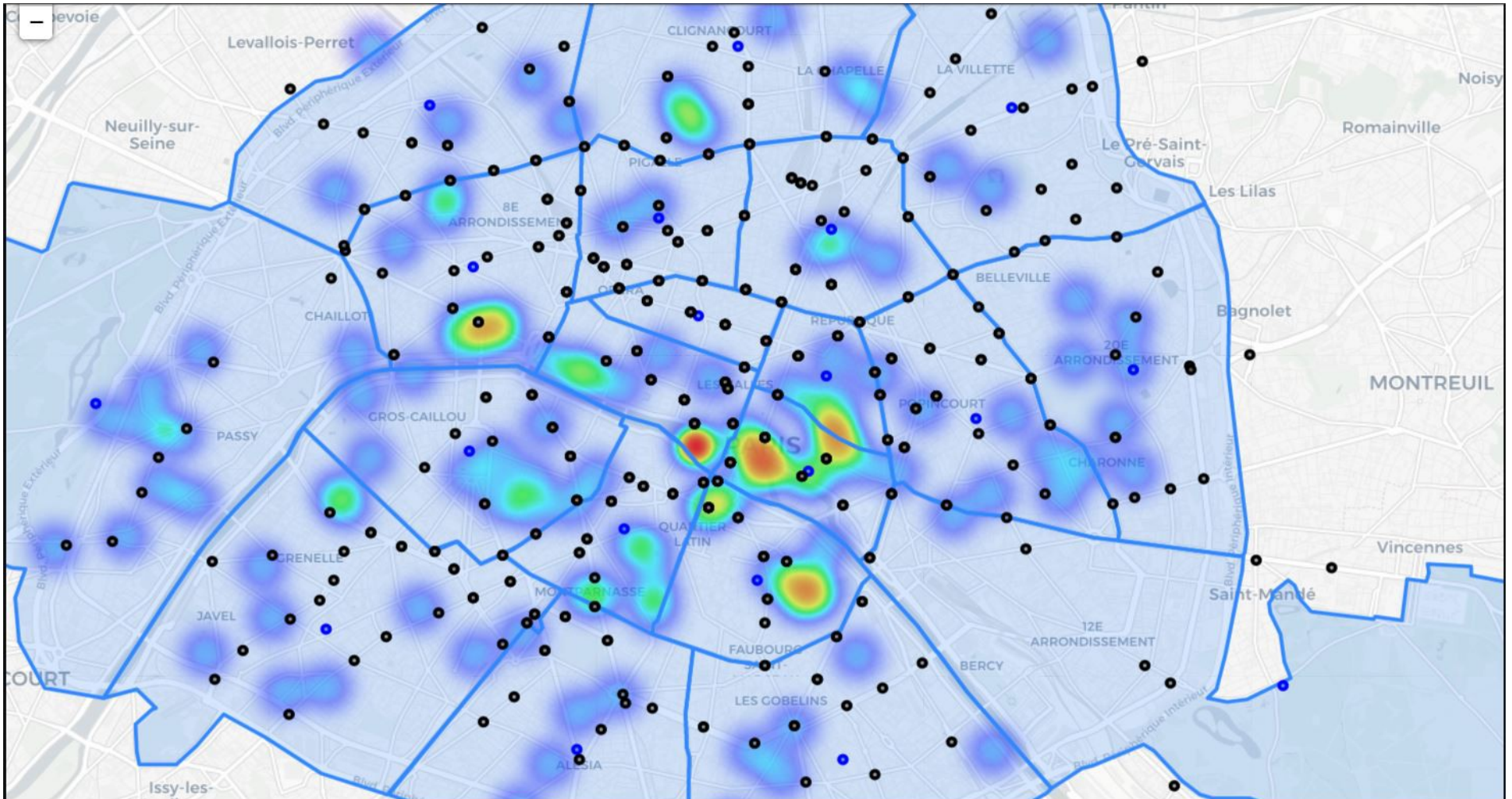
# RESULTS



Paris map with population density by arrondissement and garden and public transport stops/stations



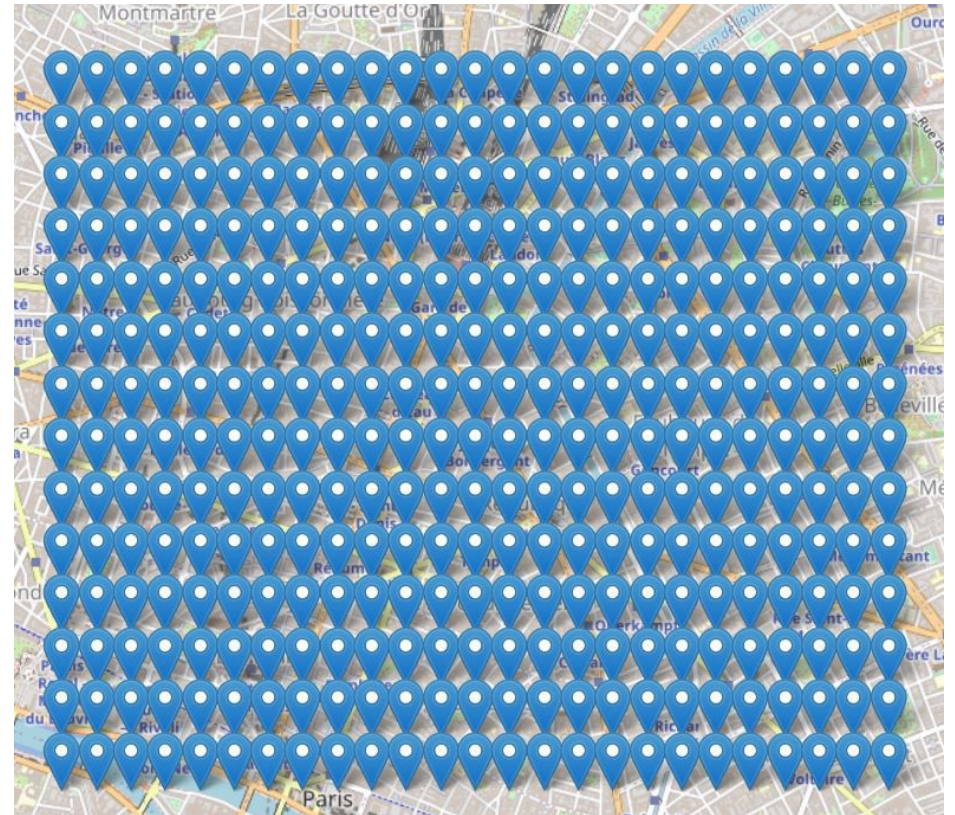
# RESULTS



Paris gardens heatmap with public transports (metro and bus) stops/stations

# RESULTS

- Selection of the 5 most suitable neighbourhoods for new green areas
- Design of a point grid for these areas to locate the best candidates

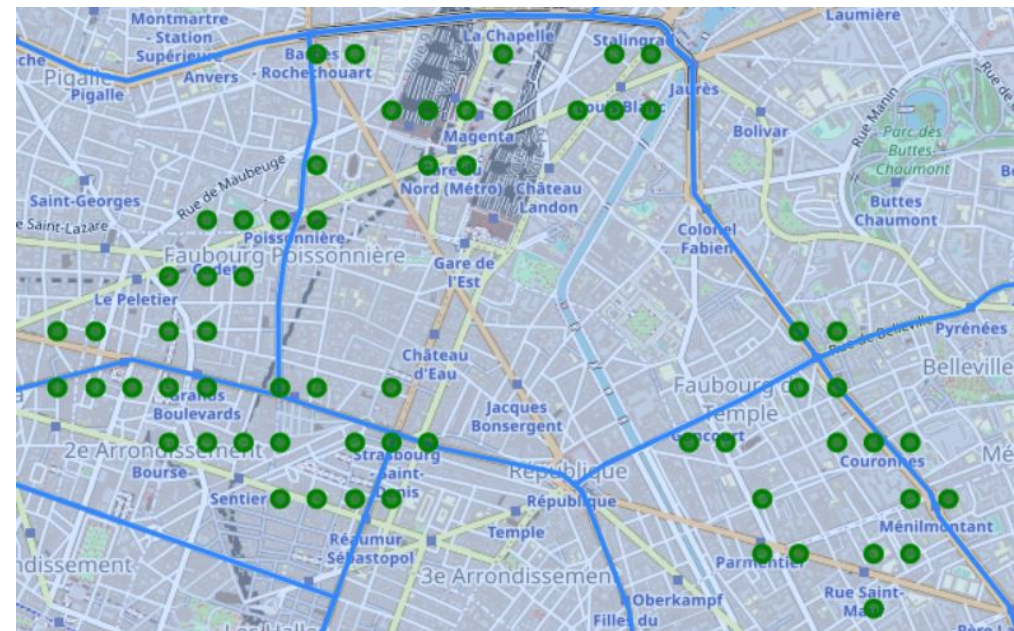




# RESULTS

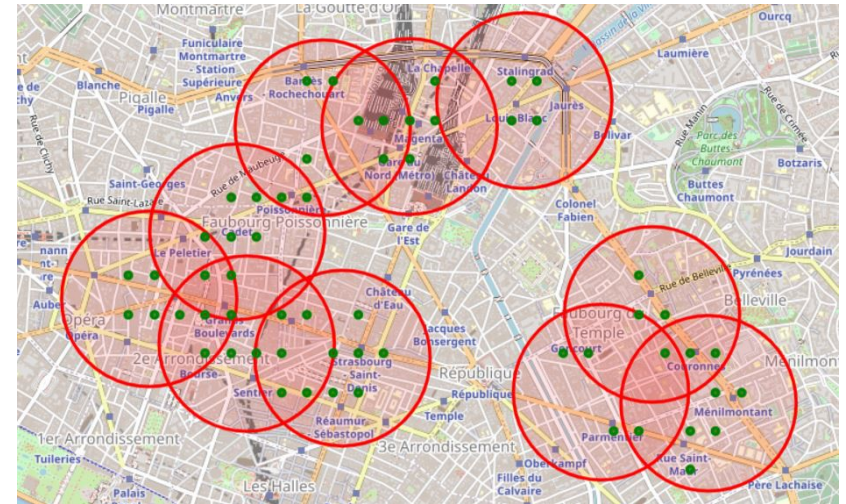
Selection criteria:

- No gardens or parks in a (minimum) radius of 500m
- Public transport stop/station within a maximum distance of 200m



# RESULTS

- K-means clustering: 10 clusters/groups were formed from the 62 candidates
- Geographic coordinates and approximative address for the cluster centers were provided



	lat	lon	address
0	48.881	2.351	(Les Demoiselles d'Honneur, Rue de Rocroy, Qua...
1	48.866	2.381	(Dèmonia, Avenue Jean Aicard, Quartier Saint-A...
2	48.875	2.344	(Grand Orient de France, 16, Rue Cadet, Quarti...
3	48.870	2.345	(Centre des Finances Publiques, Rue d'Uzès, Pa...
4	48.882	2.367	(231, Rue La Fayette, Quartier de l'Hôpital Sa...
5	48.869	2.353	(25, Rue Sainte-Apolline, Quartier des Arts-et...
6	48.867	2.373	(Relais Parmentier, Avenue Parmentier, Quartie...
7	48.872	2.338	(BNP Paribas, Rue Laffitte, Quartier du Faubou...
8	48.881	2.358	(no, Rue du Faubourg Saint-Denis, Quartier Sai...
9	48.871	2.377	(École maternelle Présentation, Rue de la Prés...

# DISCUSSION

- Choice of the most appropriate neighbourhoods/arrondissements
  - Location, population density
- Criteria to determine the most suitable spots for new green areas
  - Garden and public transport density, walking distance
- Point grid design
- K-means