Waterfront Recreations along Delaware River

ARE THERE SPECIFIC PLACES/ACTIVITIES THAT SHOULD BE BUILT ON THE WATERFRONT?

- CURRENT SITUATION ⬅
- POSSIBLE IMPROVEMENT

Background – Delaware River

- the River of the Year for 2020

- serves fifteen million people

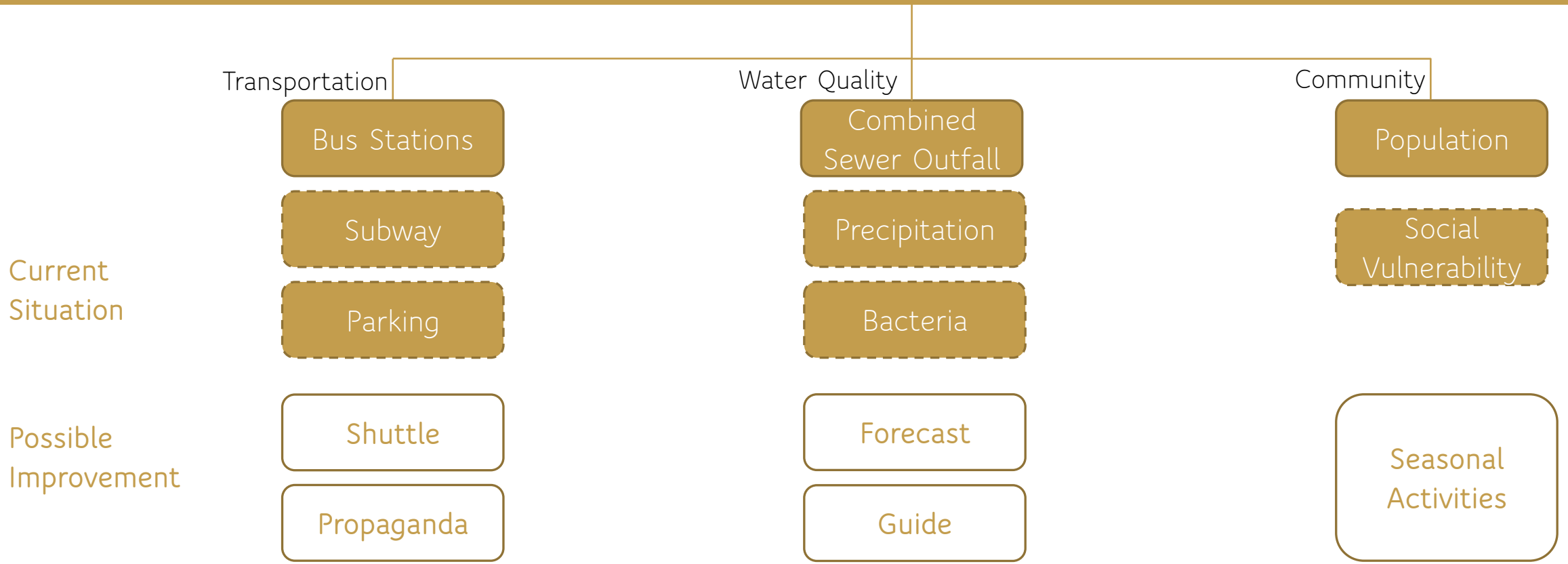
- a 27-mile stretch of the river between Philadelphia, PA, Camden, NJ and Chester, PA that needs improvement

- many projects are currently working on this improvement

- potential for waterfront recreation

Recreation

Clean Up: Waterfront Location, Address, Activity Types, Access to Shore



Analysis

Recreation Category

Most Immersive:

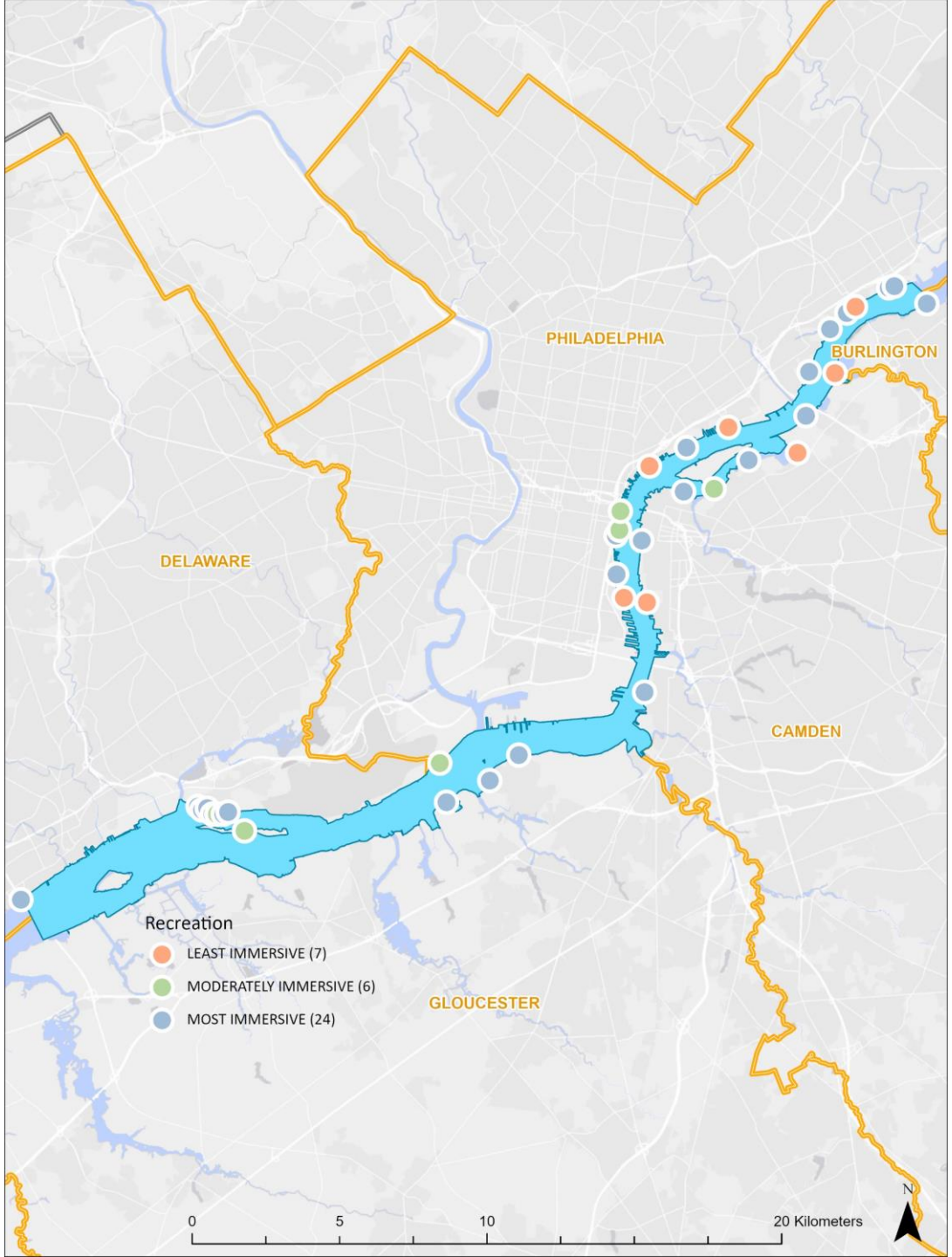
Swimming, Wading, Jet Skiing, Paddle Boarding, Kayaking

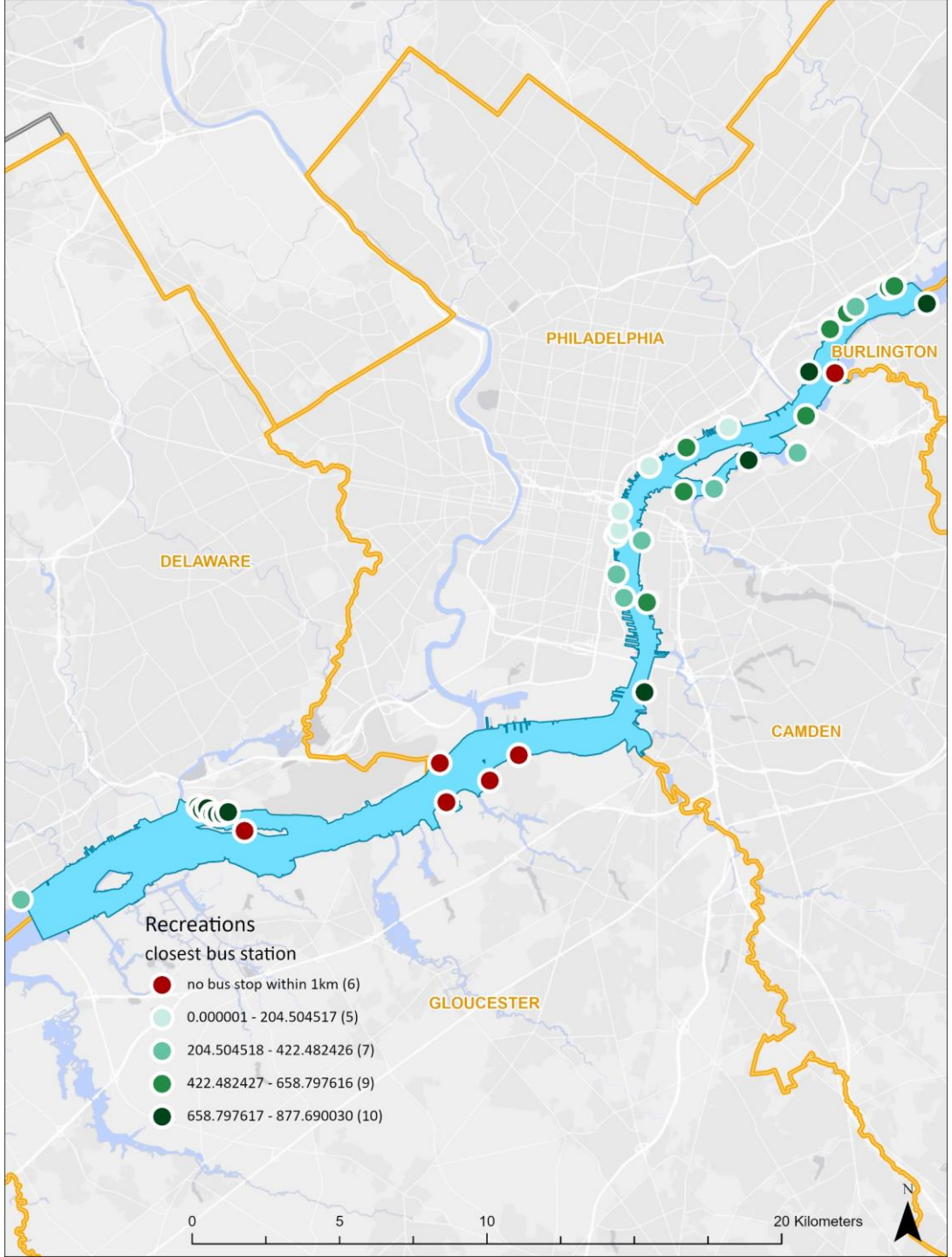
Moderately Immersive:

Paddle Boating, Motor Boating, Sail Boating

Least Immersive:

Fishing





Analysis

Bus station

CSO

In [*]:
```
from datetime import datetime
import pandas as pd

def main():

    #read file
    file = r'C:\Users\jrach\Desktop\Jiang_Rui_RecreationPhilly\raw_data\NE_CSO.xlsx'###
    data = pd.read_excel(file)
    print("raw:",data)
    #convert date time to date(year,month,day)
    data["Date"] = data["Datetime [EST\EDT]"].dt.date

    # use date to sum up daily volume for each CSO outfall
    data = data.groupby(['Date']).sum()

    #check
    print("check:",data)

    #write the output excel file
    name = "CSOdaily2019.xlsx"###
    savefile=data.to_excel(name)
    print("Excel file created sucessfully")

main()
```

```
raw:        Datetime [EST\EDT]  D_FRW  D02  D03  D04  D05  D06  D07  D08  D09  ...  \
0      2019-01-01 00:00:00    0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0  ...
1      2019-01-01 00:15:00    0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0  ...
2      2019-01-01 00:30:00    0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0  ...
3      2019-01-01 00:45:00    0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0  ...
4      2019-01-01 01:00:00    0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0  ...
...                    ...    ...  ...  ...  ...  ...  ...  ...  ...  ...  ...
35035  2019-12-31 22:45:00    0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0  ...
35036  2019-12-31 23:00:00    0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0  ...
35037  2019-12-31 23:15:00    0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0  ...
35038  2019-12-31 23:30:00    0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0  ...
35039  2019-12-31 23:45:00    0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0  ...
```



```
             D11  ...         T06  T07         T08       T09         T10  \
Date              ...
2019-01-01   0.0  ...    0.000000  0.0    0.000000  0.000000    0.000000
2019-01-02   0.0  ...    0.000000  0.0    0.000000  0.000000    0.000000
2019-01-03   0.0  ...    0.000000  0.0    0.000000  0.000000    0.000000
2019-01-04   0.0  ...    0.000000  0.0    0.000000  0.000000    0.000000
2019-01-05   0.0  ...  102.338071  0.0  472.367576  9.638279   52.678404
...          ...  ...         ...  ...         ...       ...         ...
2019-12-27   0.0  ...    0.000000  0.0    0.000000  0.000000    0.000000
2019-12-28   0.0  ...    0.000000  0.0    0.000000  0.000000    0.000000
2019-12-29   0.0  ...    0.000000  0.0   20.837165  0.000000    5.640634
2019-12-30   0.0  ...    0.000000  0.0   18.877763  0.000000    9.018012
2019-12-31   0.0  ...    0.000000  0.0    0.000000  0.000000    0.000000
```

Analysis

Population