

TRANSFORM 4EUROPE

PROPOSAL GROUP 2:

Ekaterina (SU), Simoni (SU), Martim (UCP) & Giovanna (UniTS):

REIMAGINE LYULIN

Nature-based solutions for community well-being.

Stakeholder challenge in Sofia 04/06/2025

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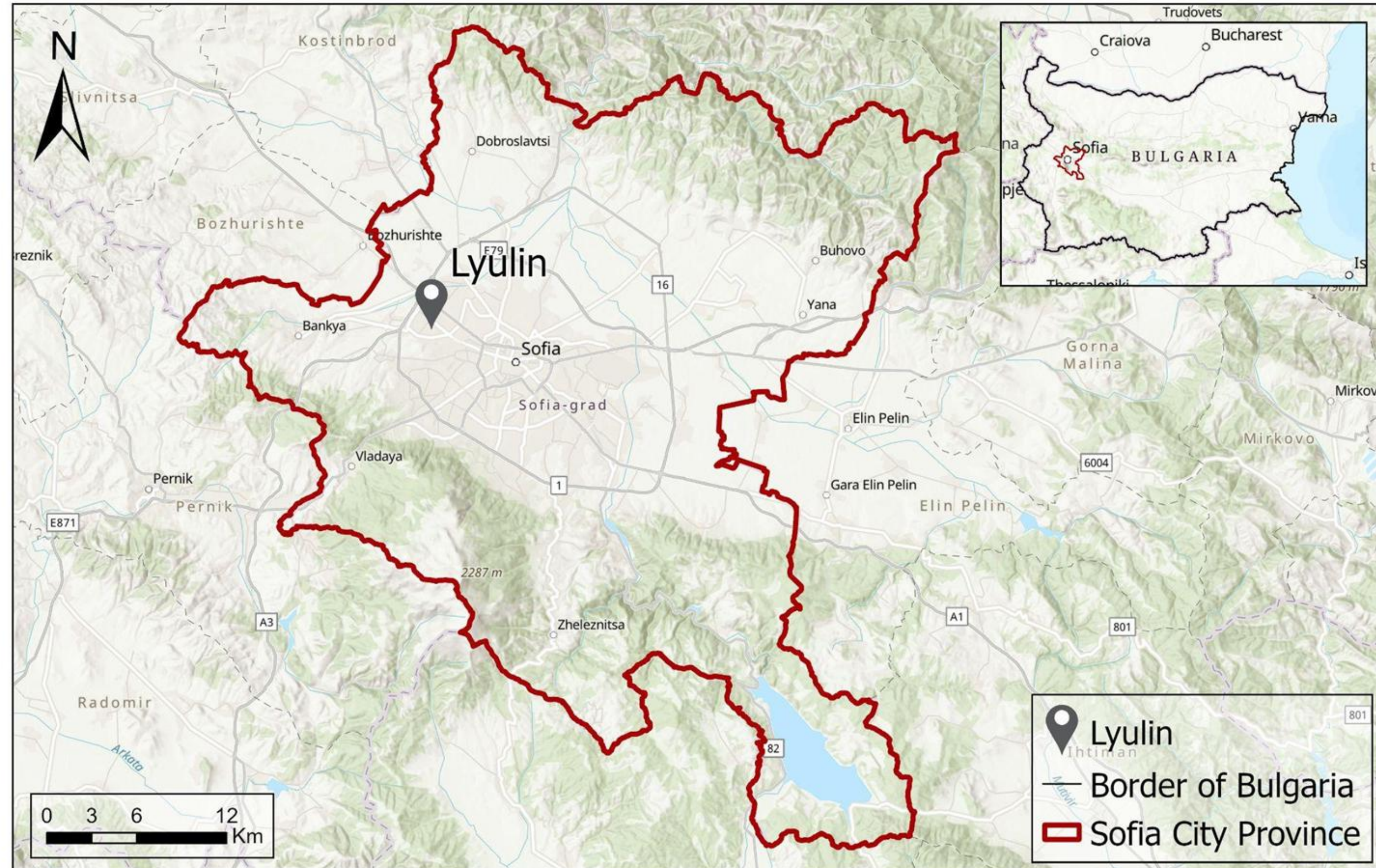
IV. Implementation strategy

- Stakeholder
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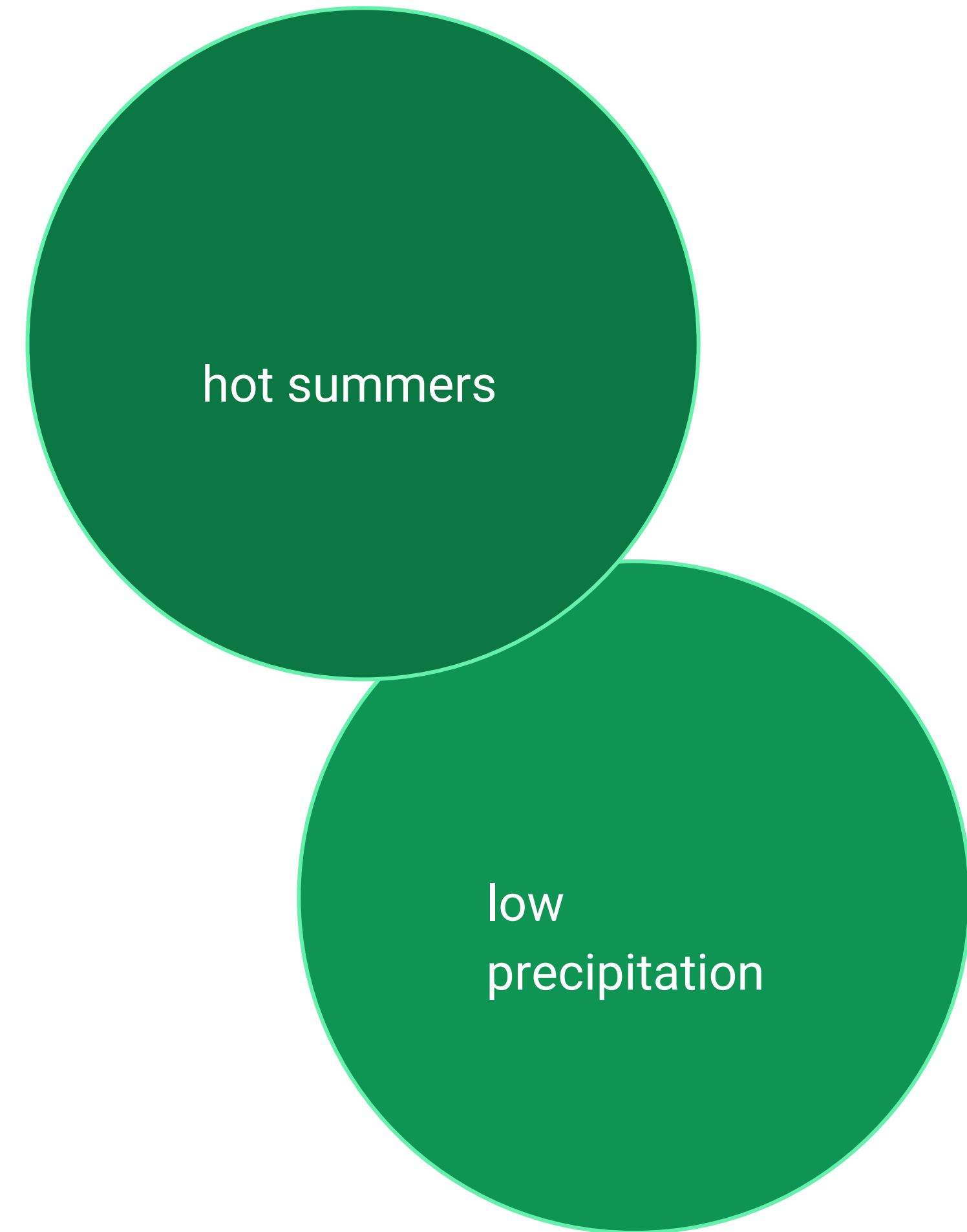
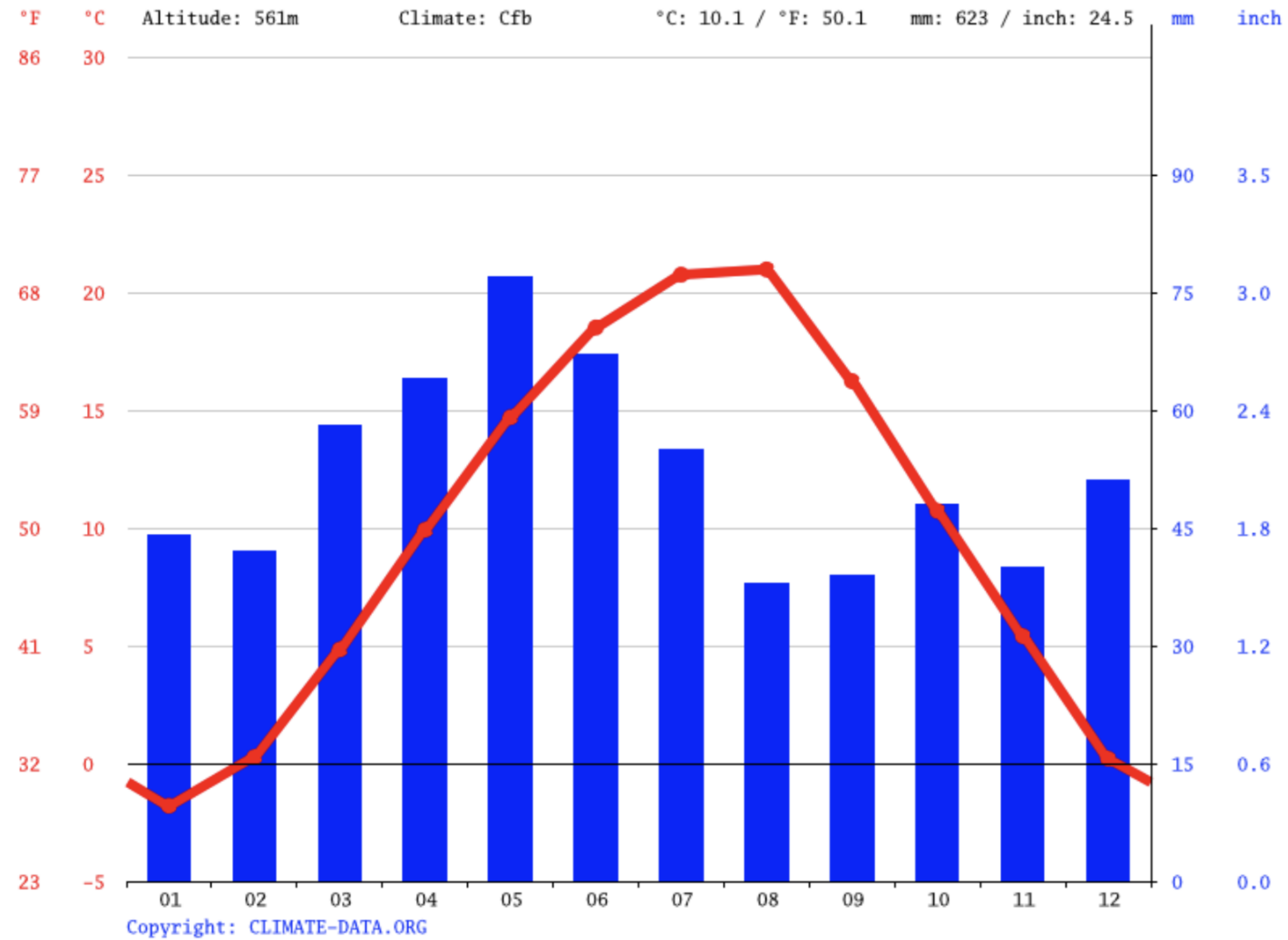
I. Framing Lyulin

Lyulin District: Location within Sofia and Bulgaria



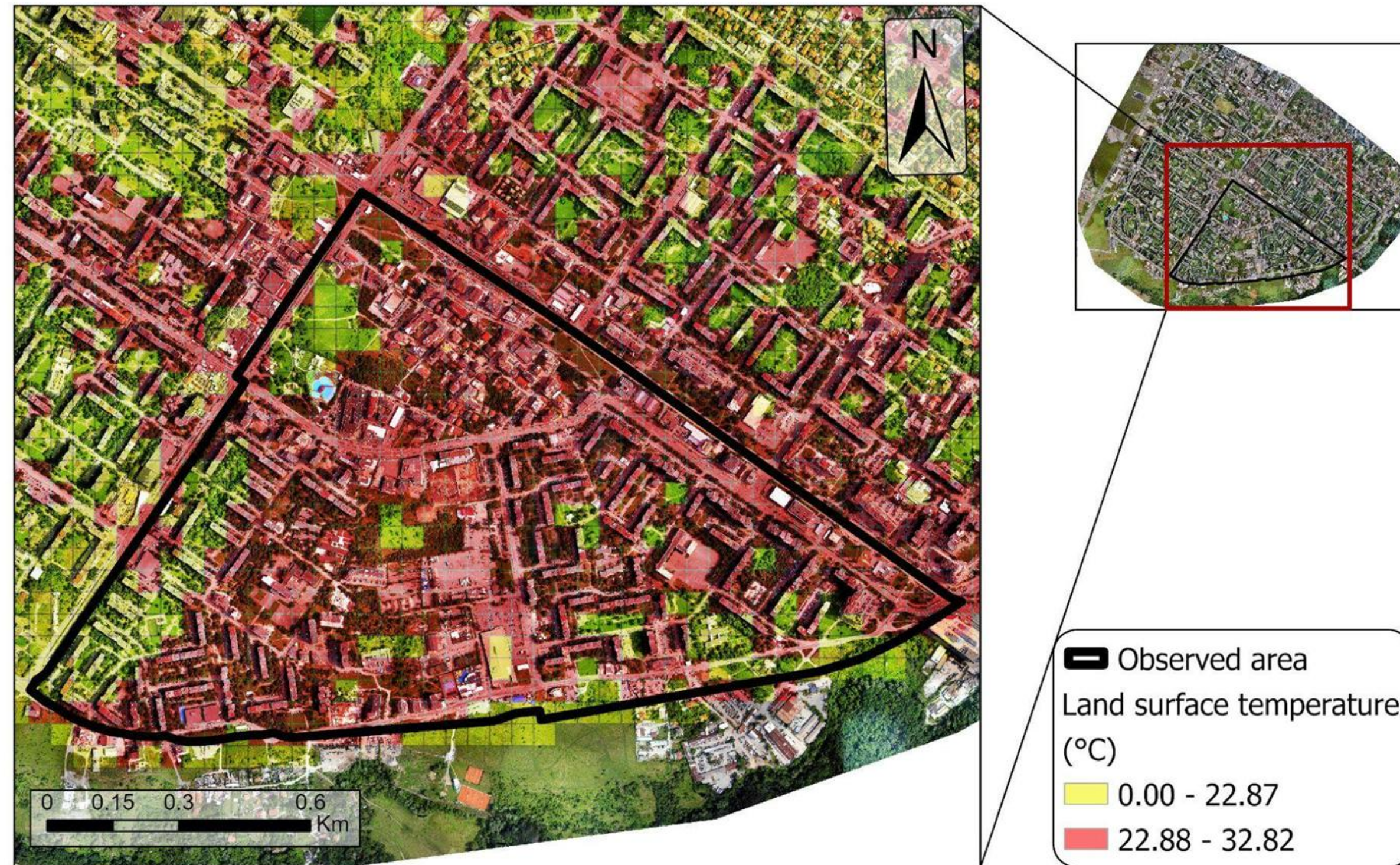
Temperature

CLIMATE GRAPH // WEATHER BY MONTH SOFIA



II. Problem identification

Land Surface Temperature in Lyulin

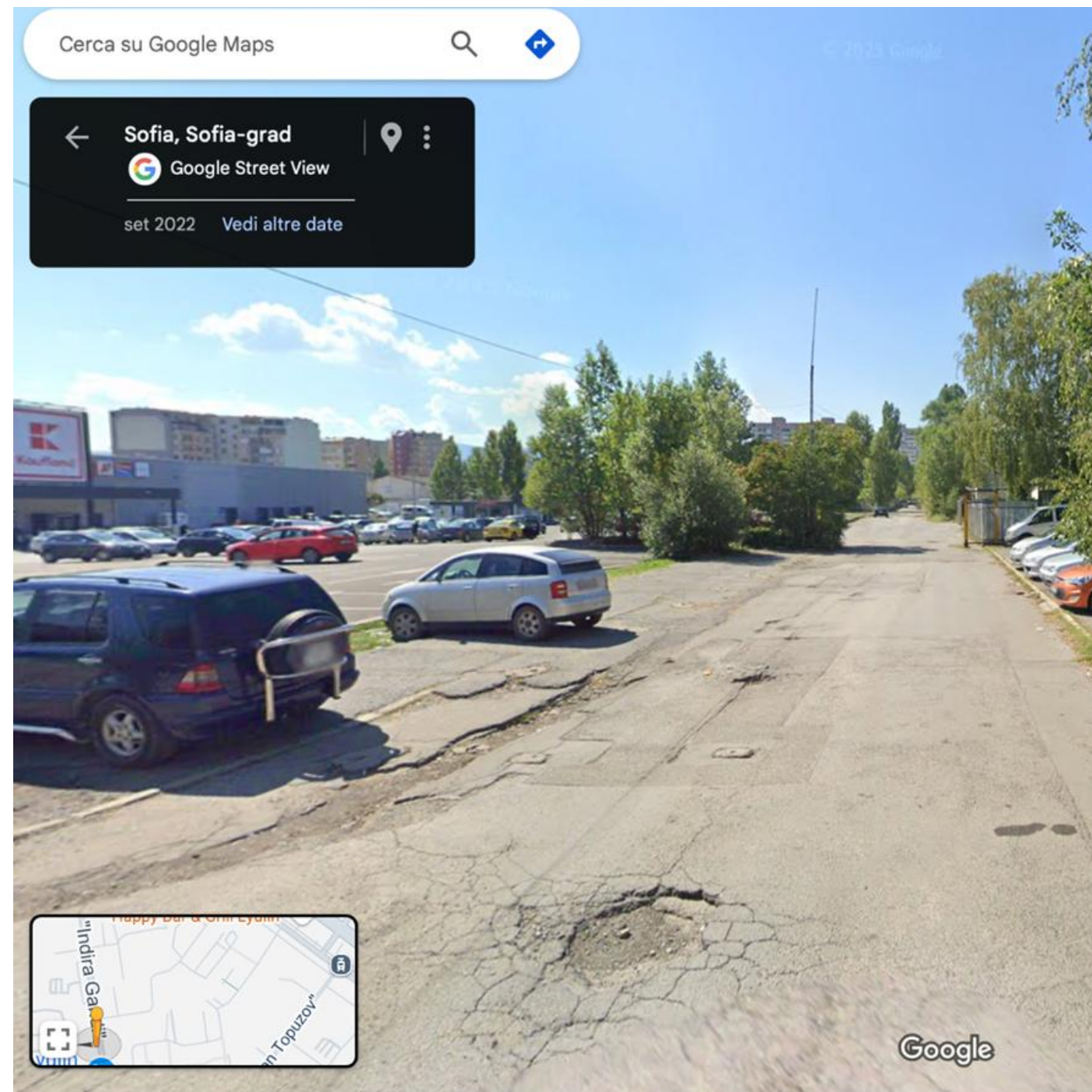


urban heat island phenomenon

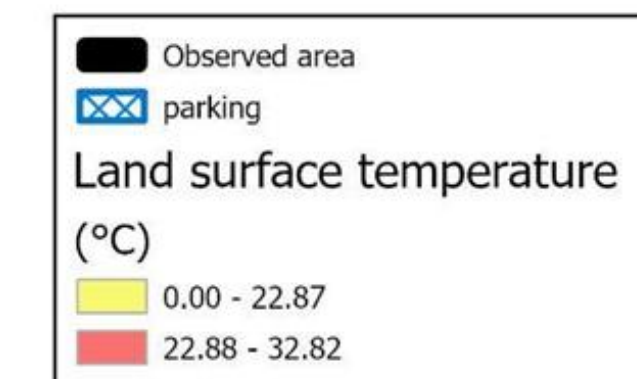
temperatures (indicated as red) too high

II. Problem identification: parking situation

Urban Heat Island effect around parking areas in Lyulin



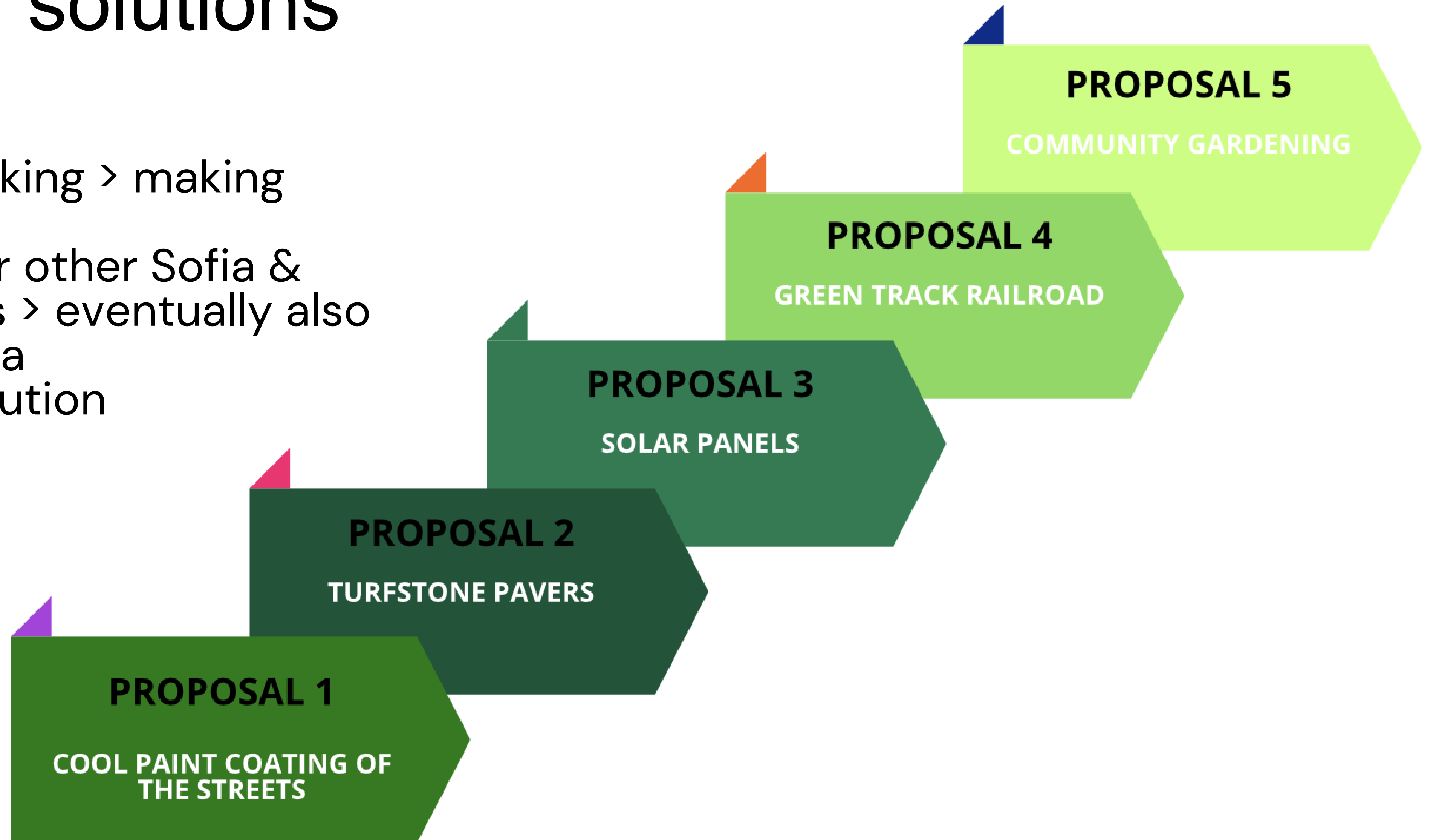
The map illustrates the Urban Heat Island (UHI) effect in the Lyulin district, Sofia, using land surface temperature data overlaid on an orthophoto. It highlights temperature variations within the observed area, where densely built zones show significantly higher surface temperatures compared to green and open spaces. The analysis also includes the distribution of parking areas to assess their spatial relationship with heat intensity.



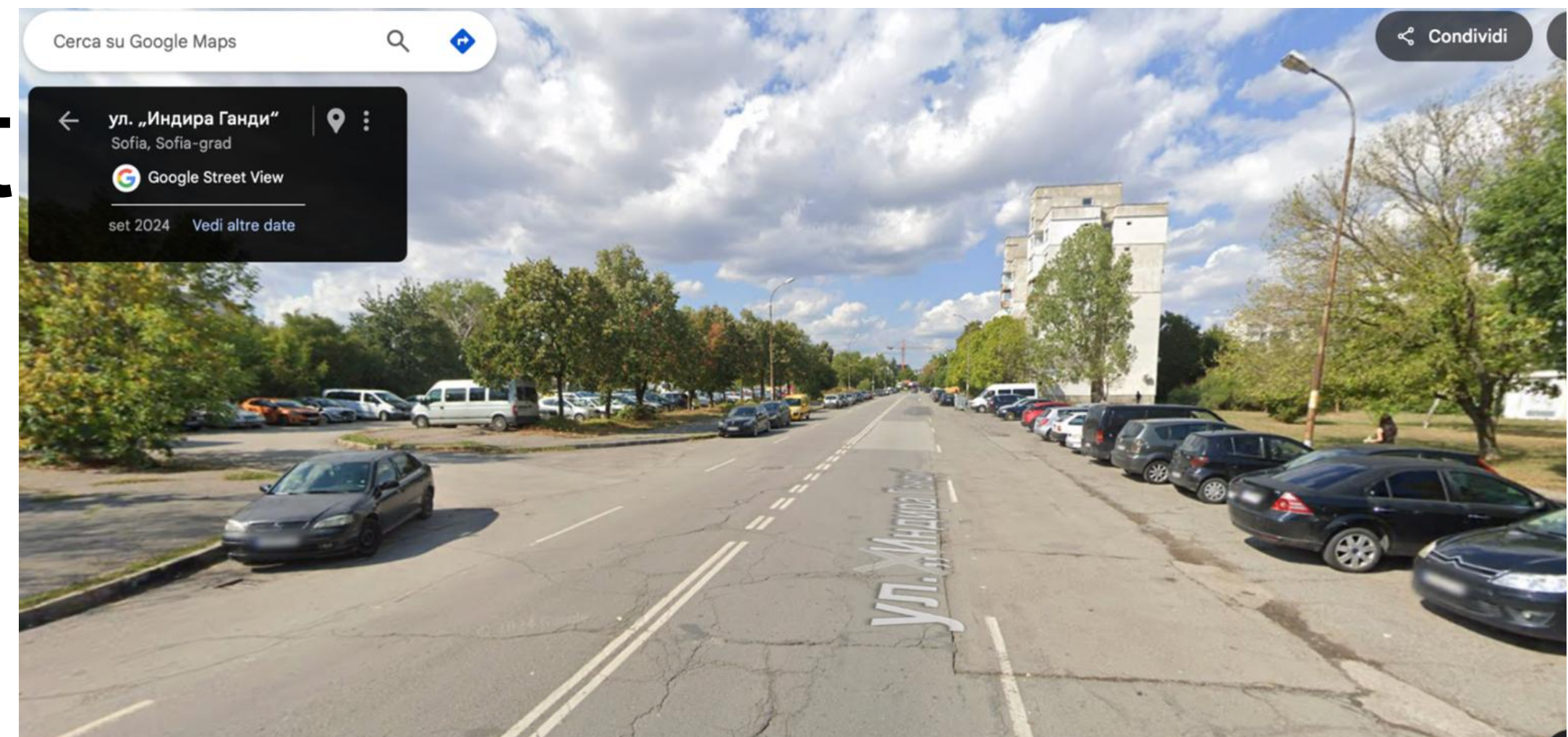
What do we propose?
DESIGN SOLUTIONS

III. Design solutions

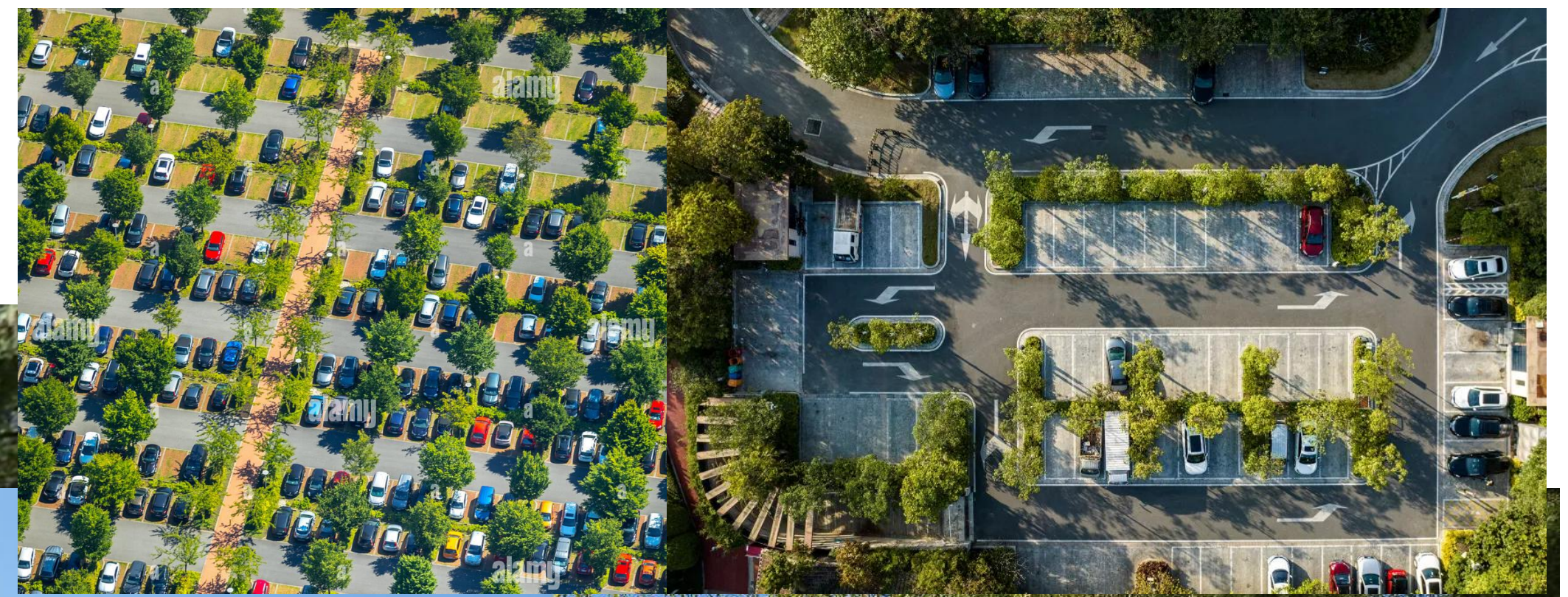
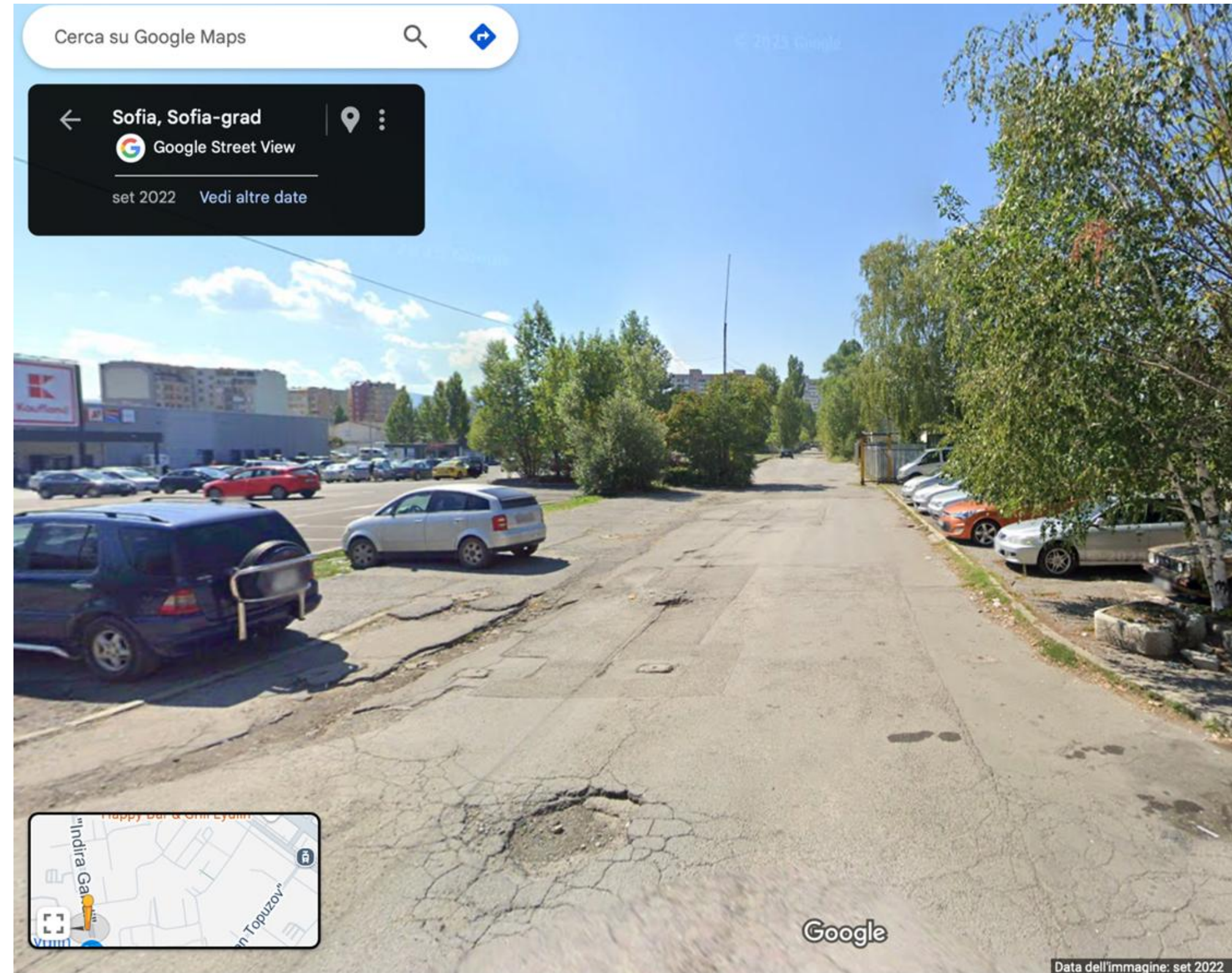
- long-term thinking > making Lyulin resilient
- replicability for other Sofia & Bulgarian areas > eventually also outside Bulgaria
- permanent solution



Proposal 1: Cooling paint



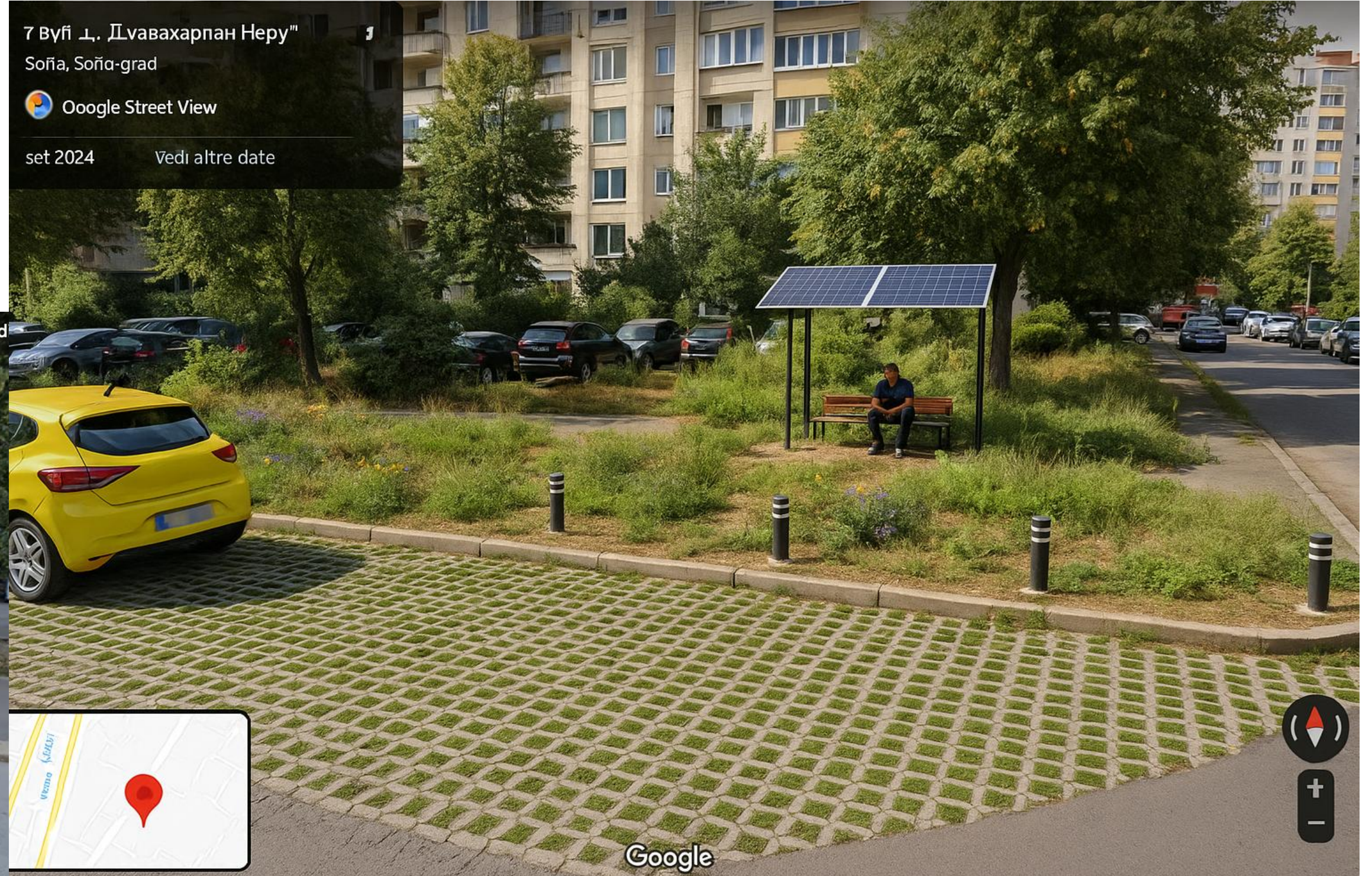
Proposal 2: Turfstone pavers



42.710211, 23.259065
zh.k. Lyulin 6, ul. "Indira Gandhi",1324
Sofia

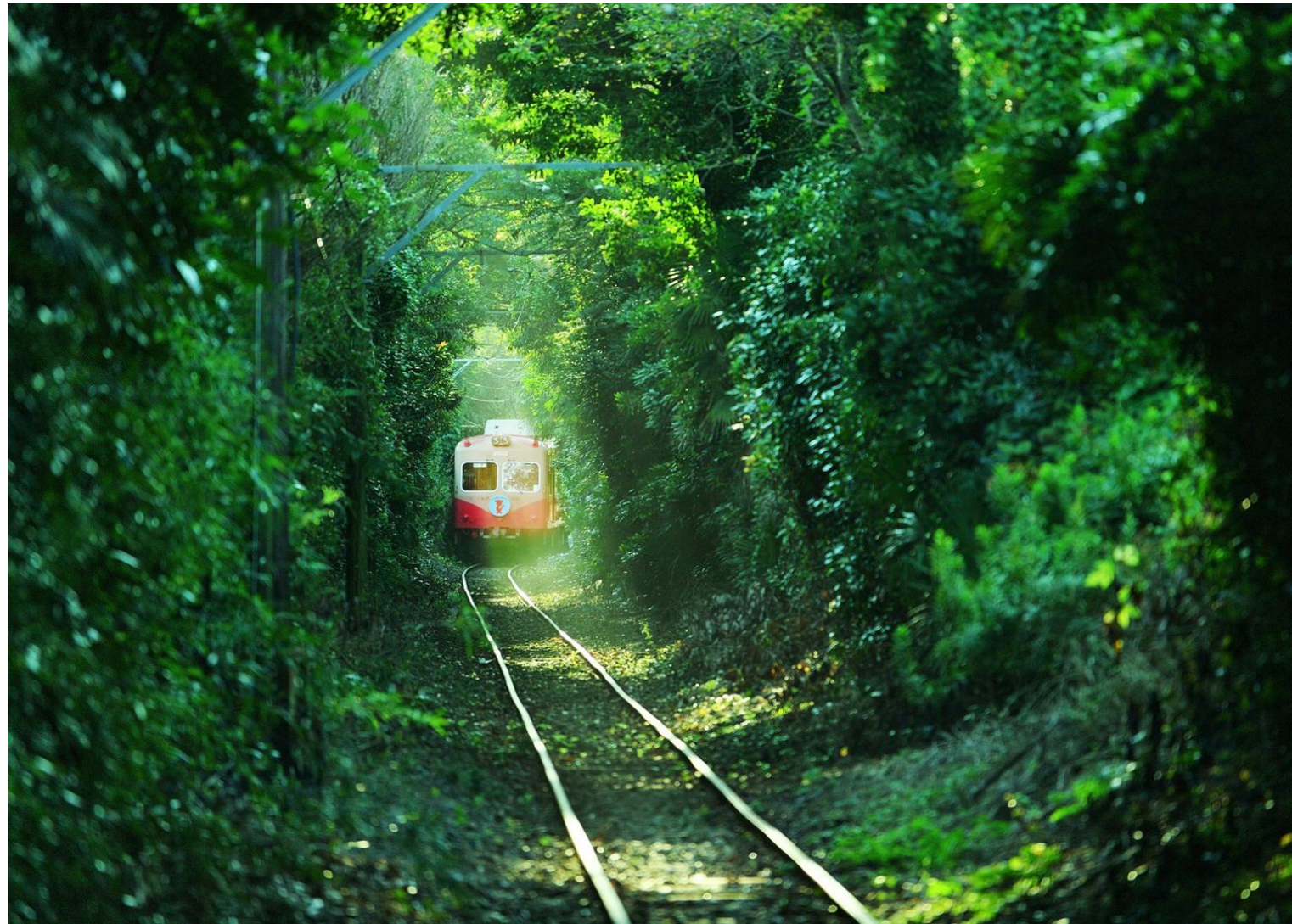


Proposal 3: Solar panel bus station



42.712318, 23.258668
zh.k. Lyulin 6,1336 Sofia




Proposal 4: Green track railroad



Land surface temperature and railroad in Lyulin

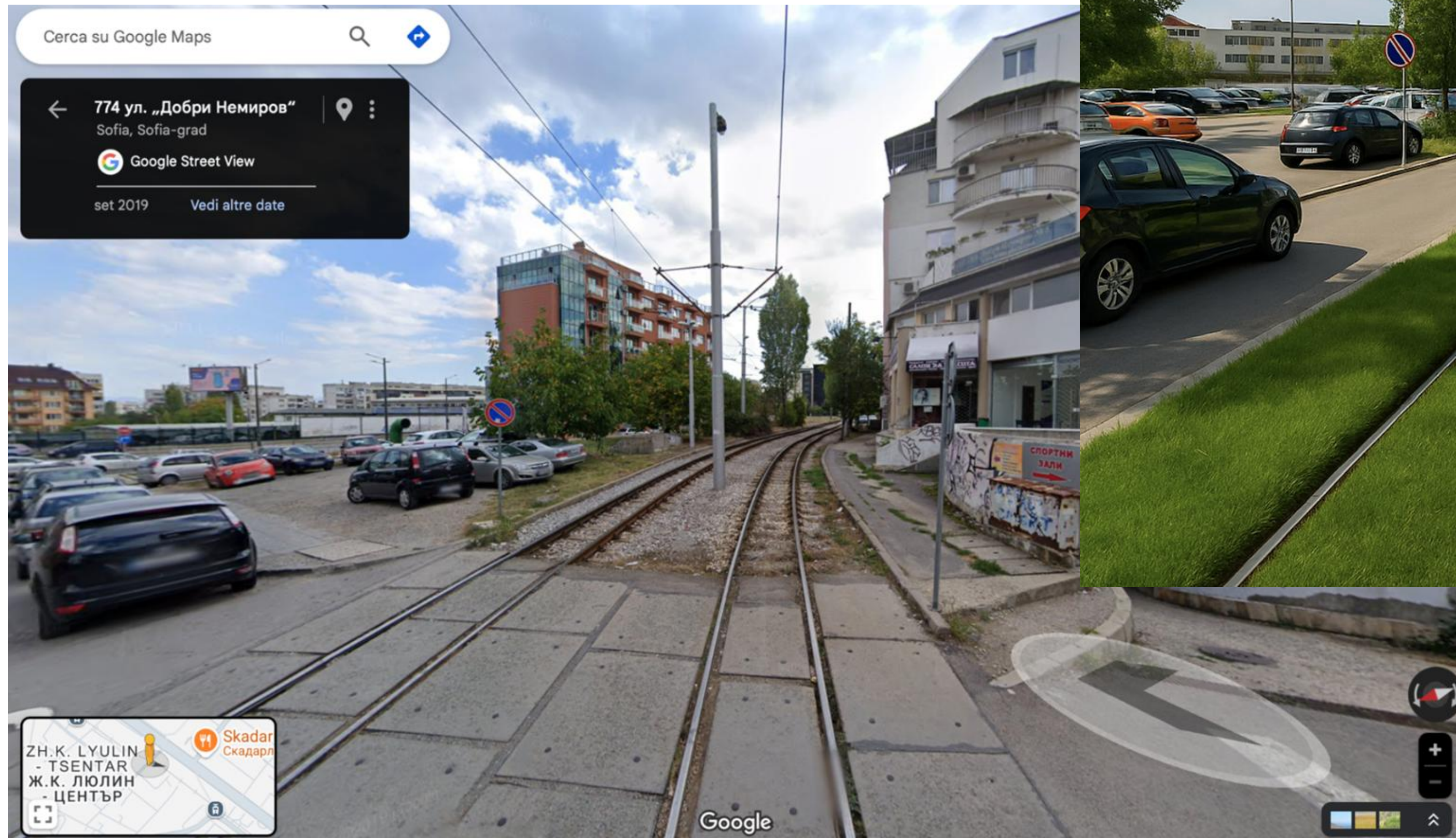
This map shows the land surface temperature (LST) distribution in the Lyulin district of Sofia, overlaid with the railroad corridor. Railroad corridors can be made greener by planting native grasses, shrubs, and trees along the tracks, creating green belts that absorb heat, cool the air, and connect urban green spaces.

Legend

-  Railroad
- Land surface temperature (°C)**
- LST_MEAN**
-  0 - 25
-  25,01 - 32,82

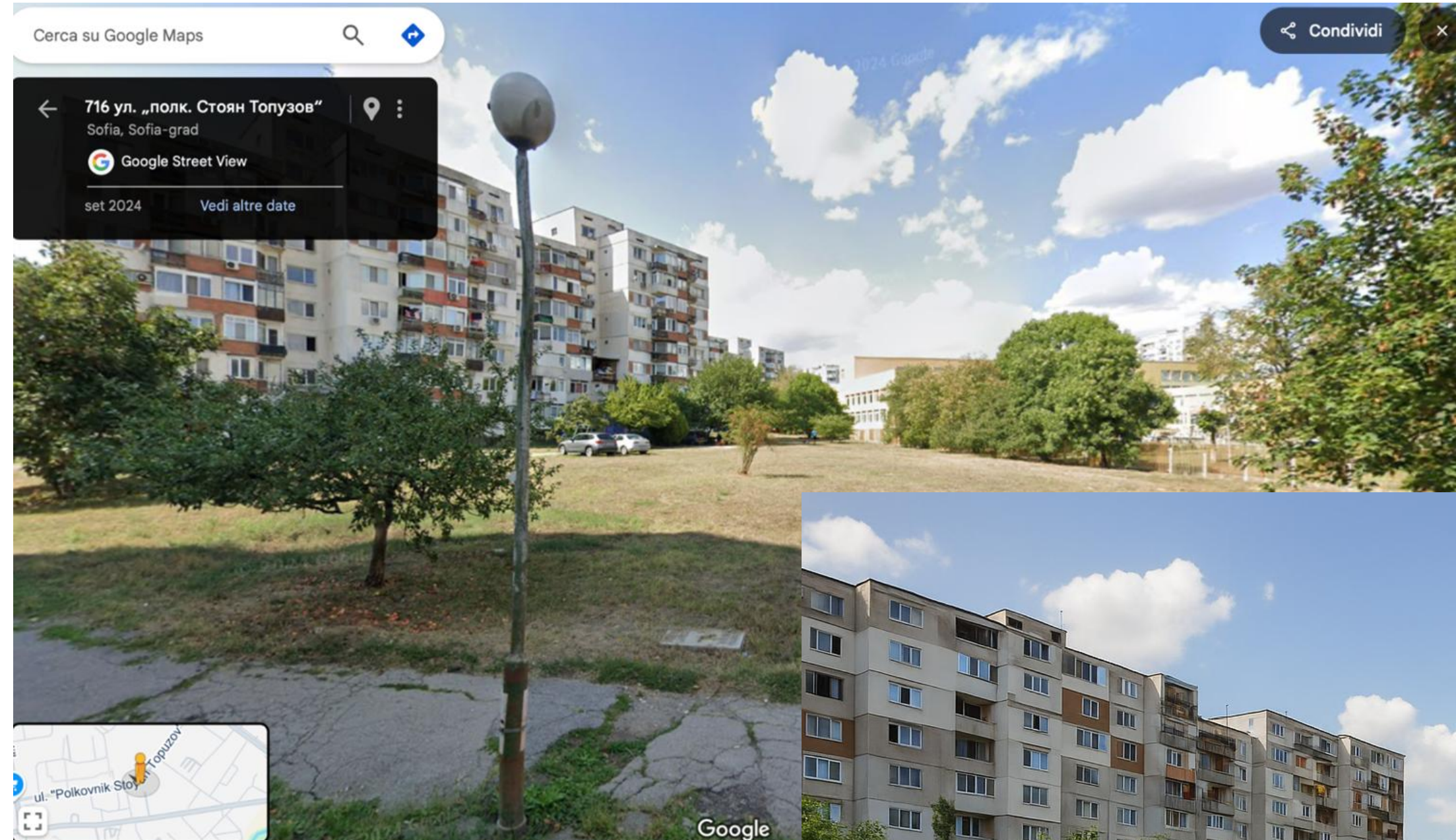


Oslo



42.716776, 23.258920
zh.k. Lyulin - Tsentar, ul. "Dobri Nemirov" 774-2,1324
Sofia

Proposal 5: Community gardening

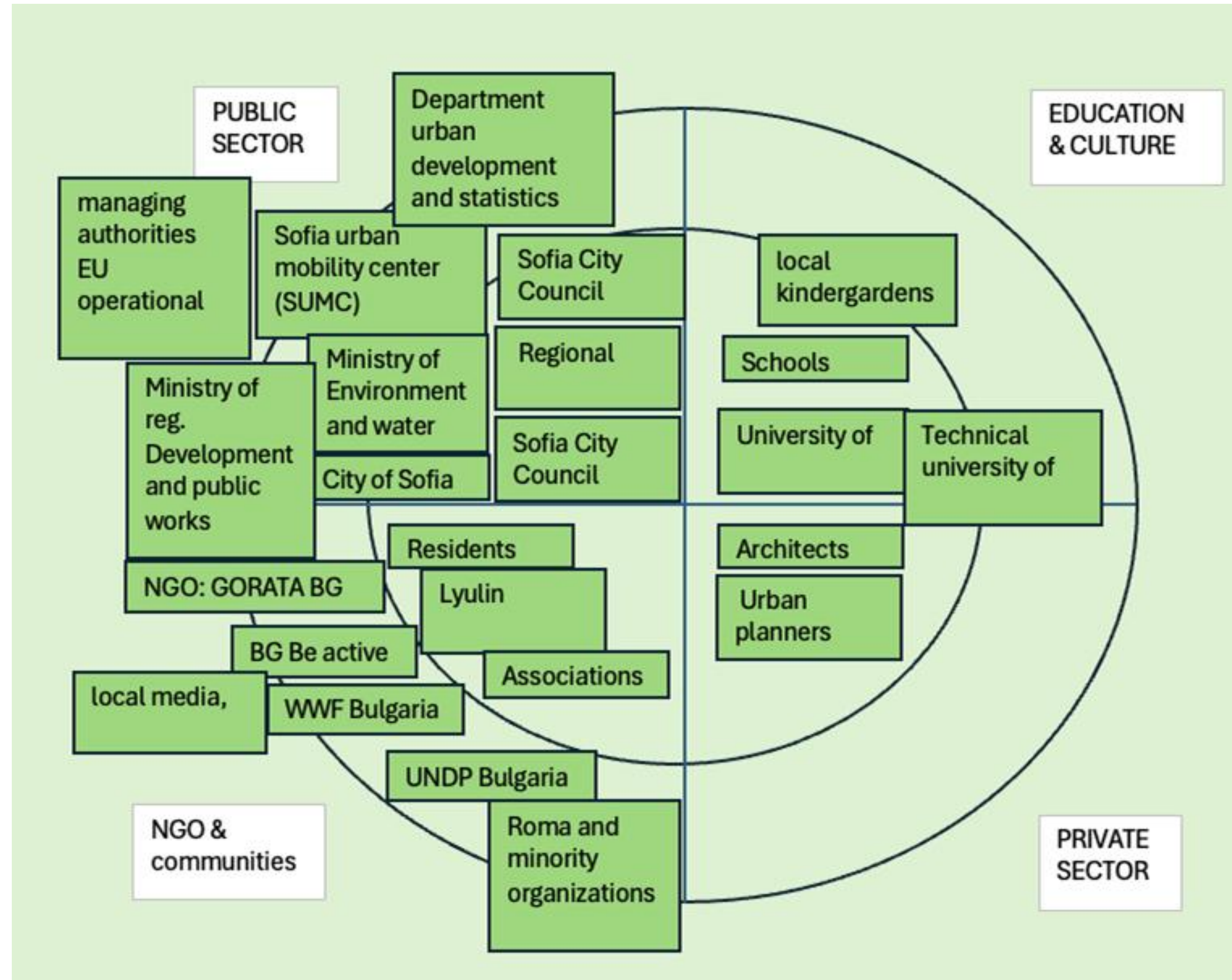


42.710813, 23.263585
zh.k. Lyulin 7, ul. "Polkovnik Stoyan
Topuzov", 1324 Sofia



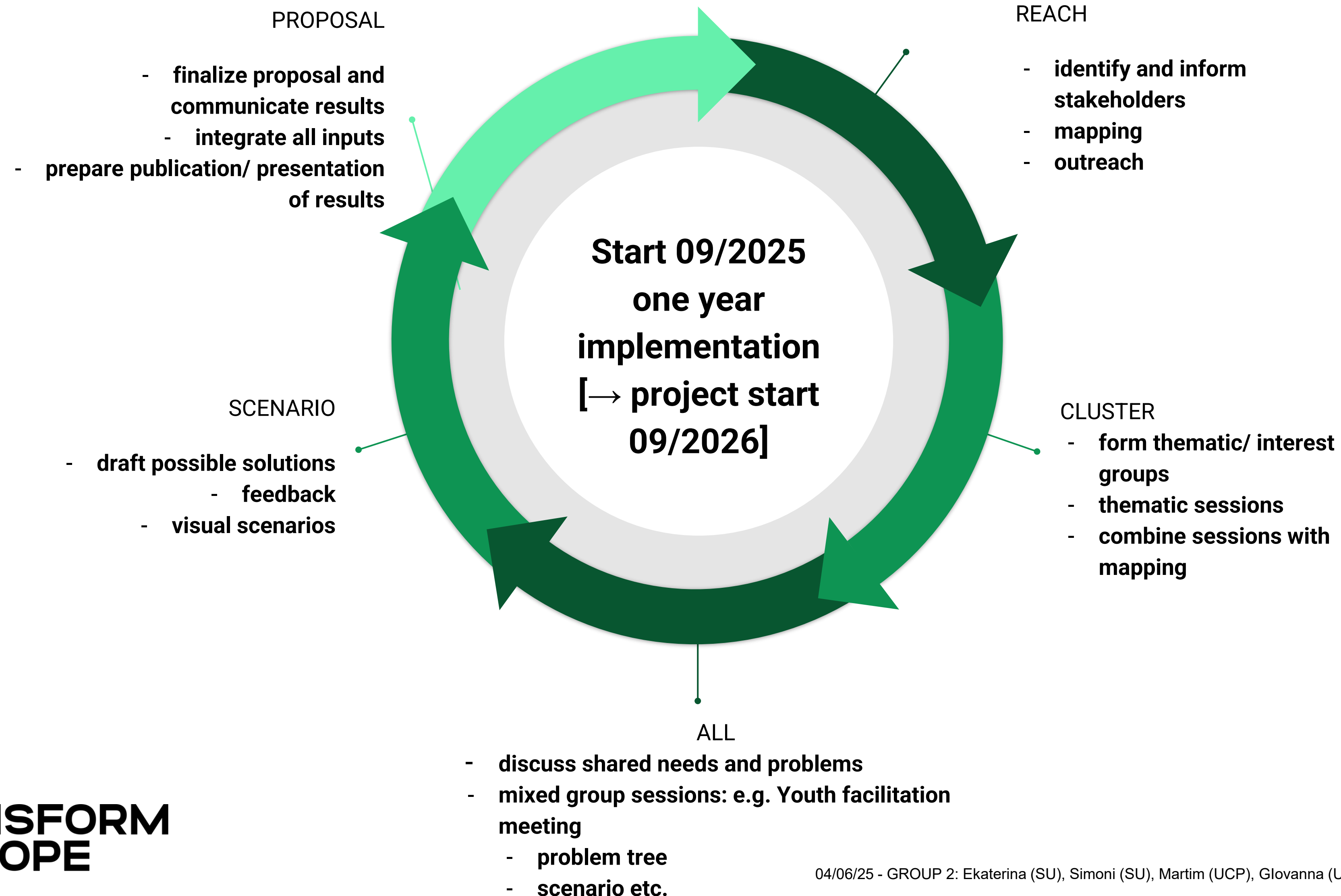
**HOW CAN WE
IMPLEMENT THESE
IDEAS?**

IV. Stakeholder identification



N.B. Graph is a representation done by the authors with Excel.

Stakeholder engagement



HOW TO FINANCE THESE IDEAS?

General funding

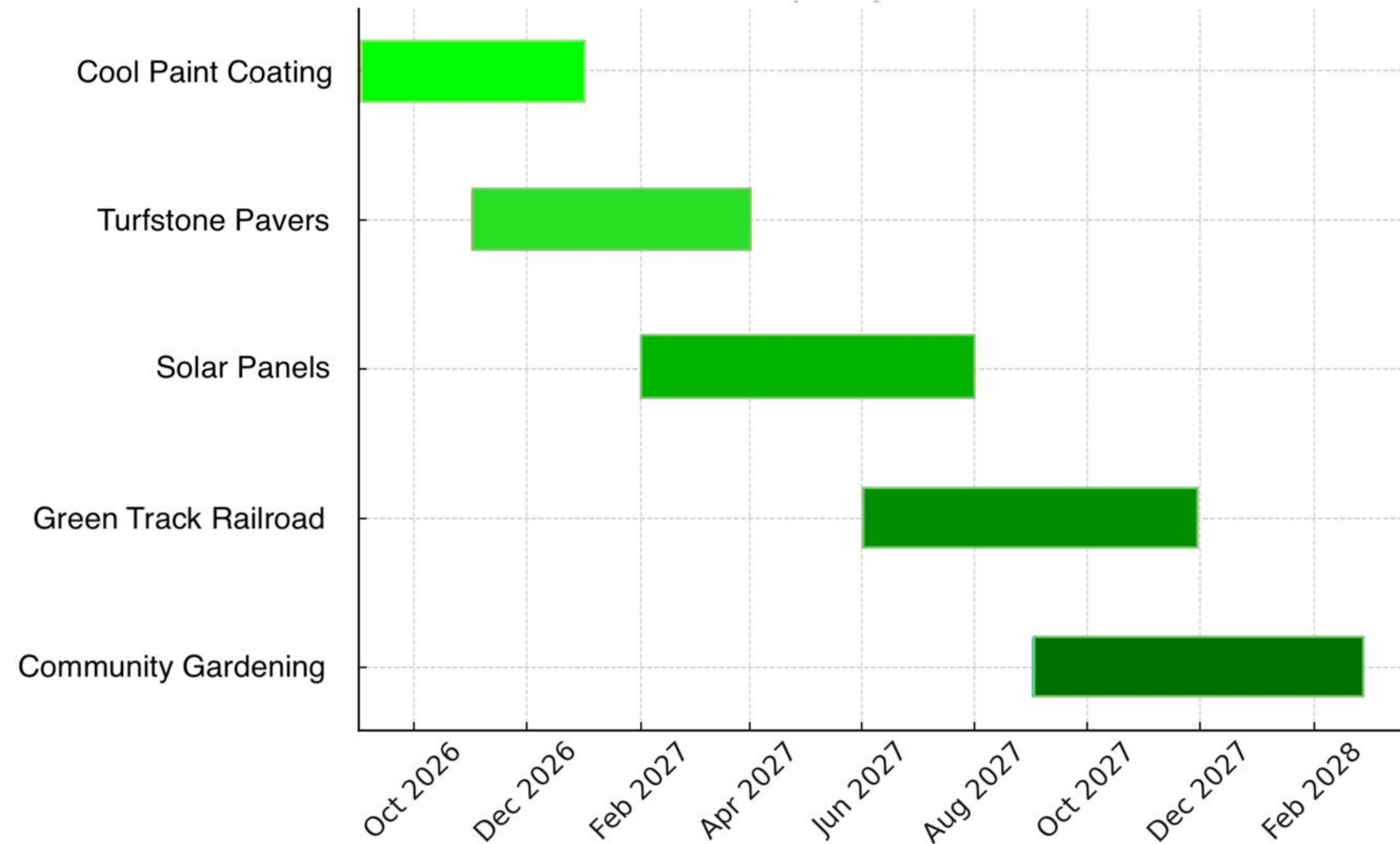
EU

- general Eu funding possibilities:
 - European Regional Development Fund
 - LIFE programme
 - Horizon Europe
 - Just Transition Fund
 - Recovery and Resilience facility
- other options:
 - Interreg Danube Region Programme – Be Ready Project (EU)
 - URBACT
 - ELENA (by European Investment Bank)
 - European green capital & green leaf awards

BULGARIA

- Operational programme Environment (OPE 2021–2027)
 - Ministry of Environment and water
- Operational programme Regions in growth
 - Ministry of regional development and public works
- National recovery and resilience plan
 - part of RRF
- National trust Ecofund
 - international donors > focus municipal climate adaptation plans & energy efficiency
- Municipal action plan > Green sofia

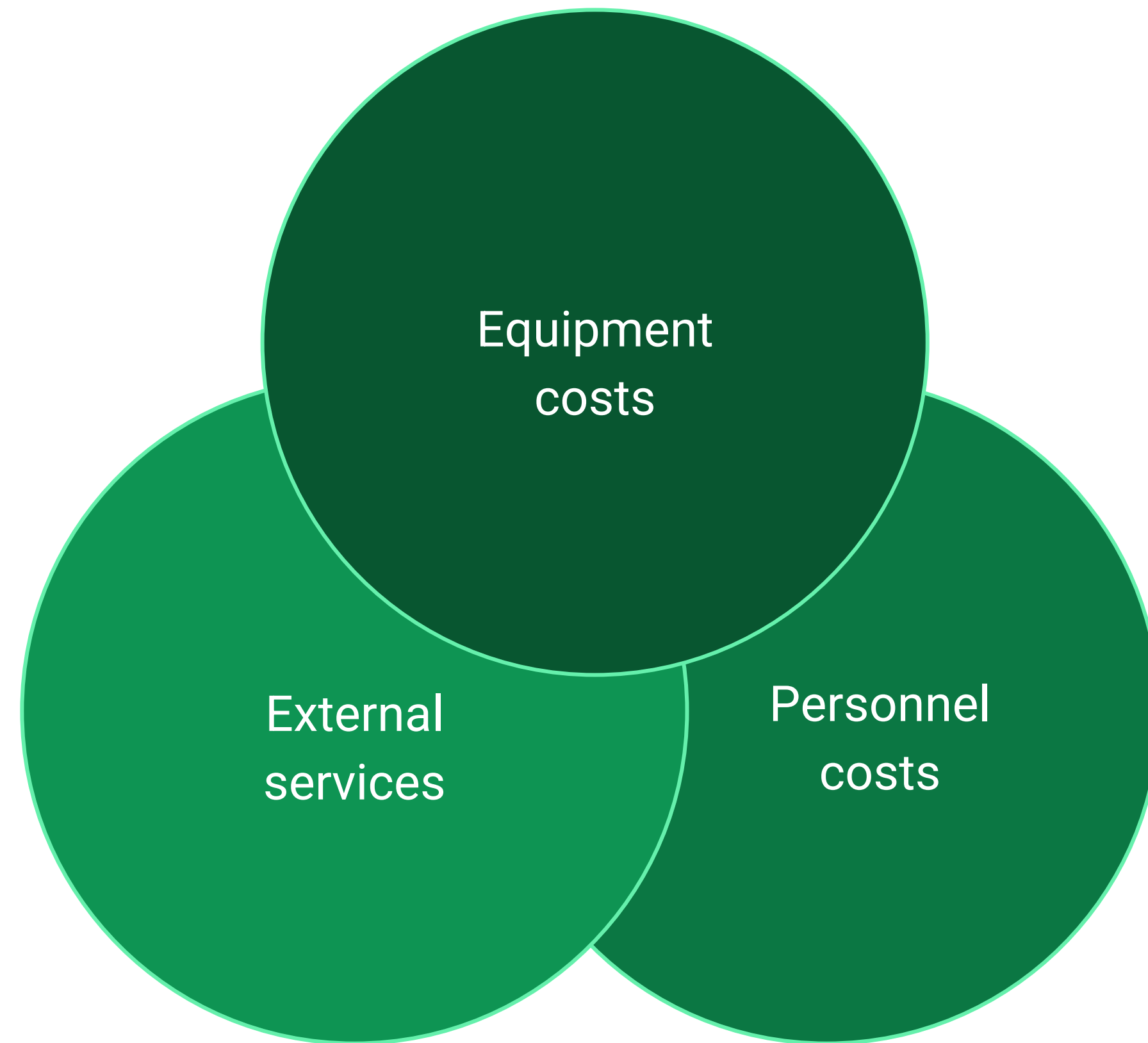
Timeframe



Example of
community
gardening:
PROPOSAL 5

Work packages >
Budget

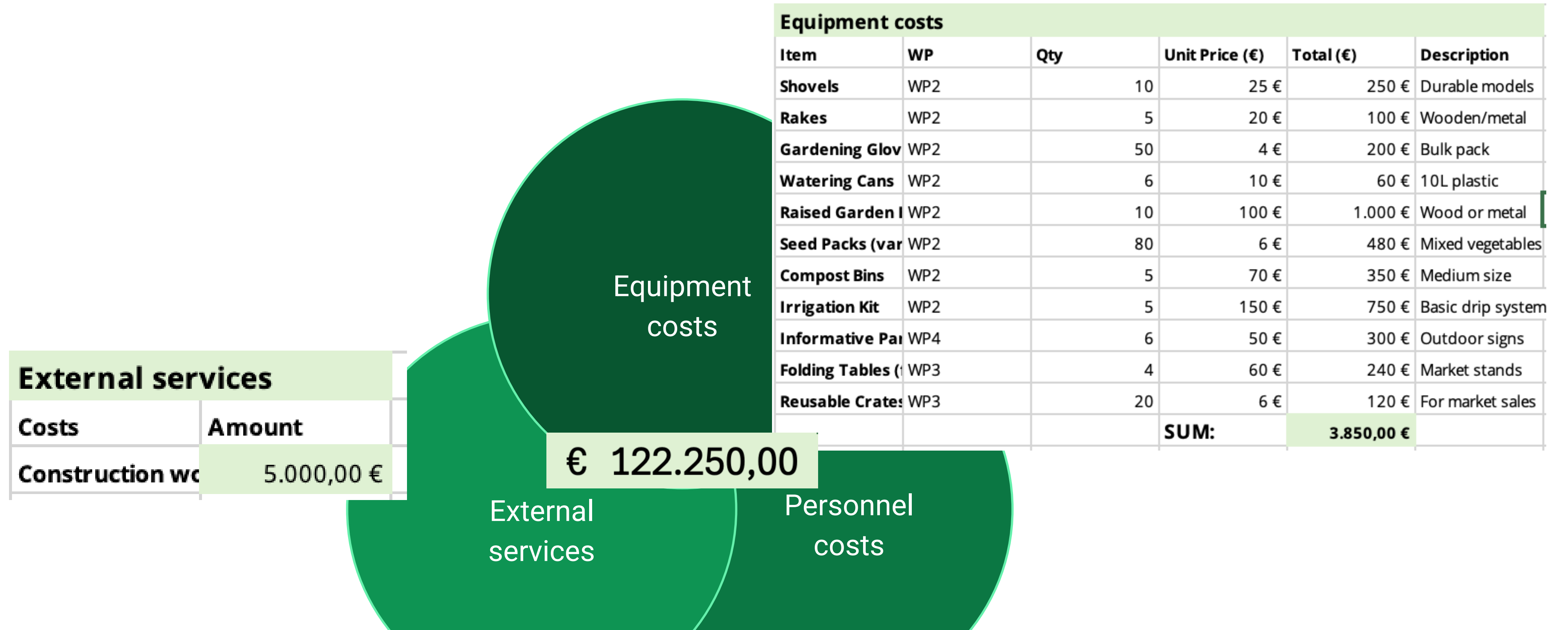
Budget - Community gardening



Community gardening - Work packages

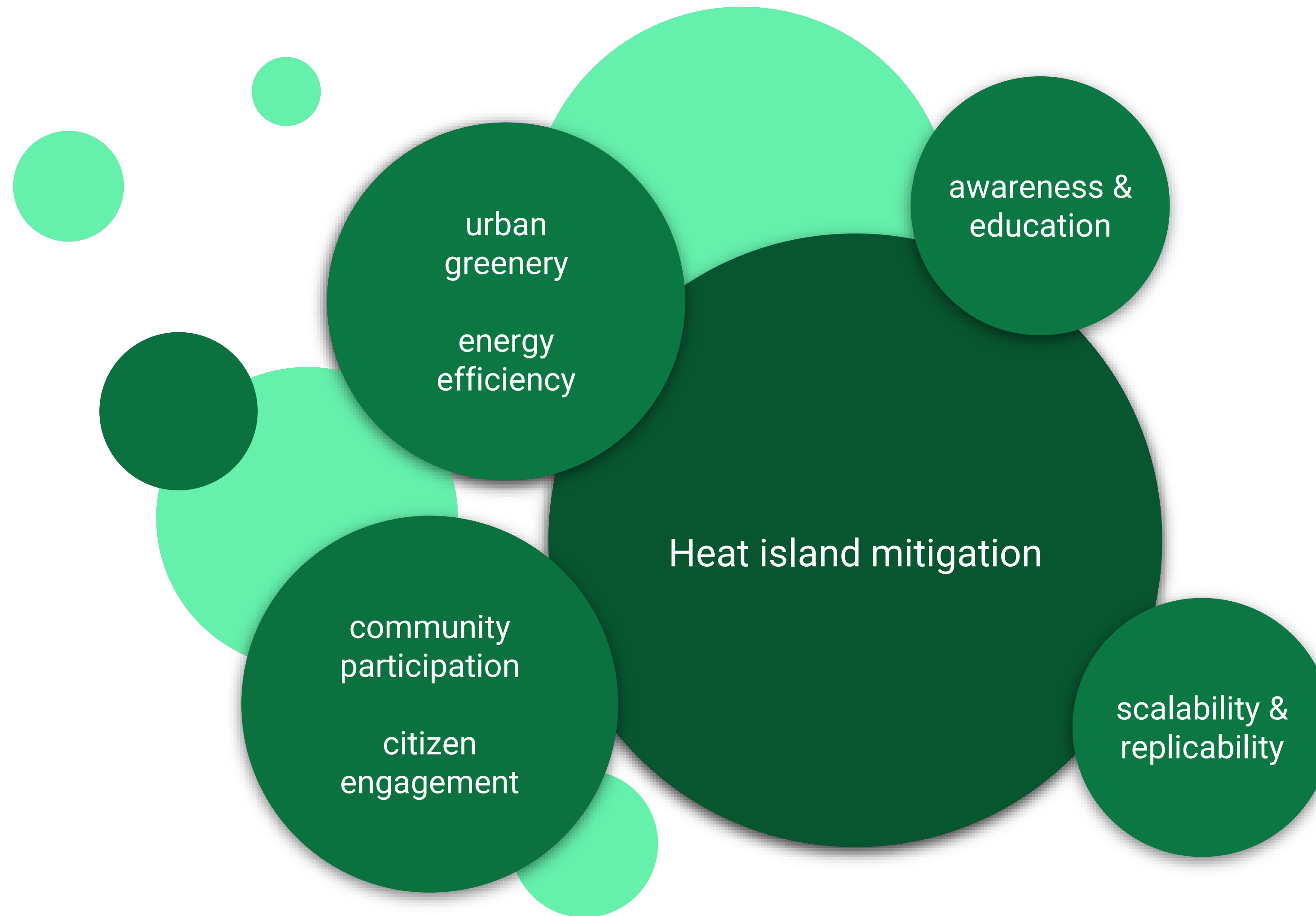


Budget - Community gardening



Personnel costs					
Role	People involved	Monthly Rate (€)	Months	Cost (€)	Description
Technical Exper	2	1.900 €	3	11.400 €	Feasibility study
Educator	3	1.500 €	12	54.000 €	User training by WWF Bulgaria & Gorata Bulgaria e
Communication	1	900 €	12	10.800 €	Internship for University Sofia supporting project
Project Manage	1	2.100 €	12	25.200 €	Project coordination
Administrative	2	2.000 €	3	12.000 €	Admin, reporting
				SUM:	113.400 €

IV. Expected Impact



Sources

- Geospatial data : Provided for the T4EU program
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<https://japan-forward.com/hidden-wonders-of-japan-choshi-railway-clickety-clacking-through-the-green/>
- Google (2025). [Screenshot of Google Maps showing Lyulin in Sofia]. Retrieved June 3, 2025 from <https://www.google.com/maps>
- Animations done with Artificial intelligence.
- https://european-union.europa.eu/live-work-study/funding-grants-subsidies_en
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- <https://www.citiesoftomorrow.eu/resources/toolbox/roadmaps/sofia-green-city-action-plan/>
- <https://sofiaplan.bg/en/we-support/>

THANK YOU FOR YOUR ATTENTION!

Any questions?