

BERLIN HEAT STRESS EXPOSURE MAPS METADATA URBAN PLANNING SCENARIO 2026-2045

Versions

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1 OVERVIEW MAPS AND DATASETS

1.1 Maps availability

This document contains a description of the content of Berlin Heat Stress Exposure maps and delivered datasets for the Urban Planning scenario and for 2026-2045 time frame.

The following table is a list of all provided maps. The maps described in this document are highlighted in yellow.

CITY	TYPE	THEME	EXPOSURE MAP VARIABLE	MODELLED HEAT STRESS VARIABLE	BASE SCENARIOS		URBAN PLANNING SCENARIOS		
					PAST - PRESENT (1986-2005)	NEAR FUTURE (2026-2045)	PAST - PRESENT (1986-2005)	NEAR FUTURE (2026-2045)	
Berlin	Exposure maps	Population	Total population 2013	Average number of heatwave days per year	X				
			Population density inhabitants per hectare 2013	Average number of heatwave days per year	X			X	
			Total population 2030	Average number of heatwave days per year					
			Number of inhabitants aged 0 to 17 years 2013	Average number of heatwave days per year	X				
			Number of inhabitants aged 18 to 65 years 2013	Average number of heatwave days per year	X				
			Number of inhabitants aged +65 years 2013	Average number of heatwave days per year	X				
			Number of inhabitants aged 0 to 17 years 2030	Average number of heatwave days per year					X
			Number of inhabitants aged 18 to 65 years 2030	Average number of heatwave days per year					X
			Number of inhabitants aged +65 years 2030	Average number of heatwave days per year					X
			Number of schools 2014	Average number of heatwave days per year			X		
	Number of childcare centers 2014	Average number of heatwave days per year			X				
	Number of hospitals 2014	Average number of heatwave days per year			X				
	Number of elderly stay facilities 2014	Average number of heatwave days per year			X				
	Heat stress maps				Average number of heatwave days per year per grid cell	X	X	X	X
				Average number of heatwave days per year per statistic units	X	X	X	X	
				UHI effects at 1.1pm per grid cell	X				
				UHI effects at 1.1pm per statistic units	X				

Table 1: Berlin Heat Stress Exposure maps list

1.2 Credits

The heat stress exposure data (e.g. average number of heat wave days per year) are extracted from local urban climate simulations (UrbClim model) performed by VITO over the period 2026-2045.

<https://vito.be/en/land-use/sustainable-cities/urban-climate-services>

Data such as 3D buildings, land use/cover, 2030 urban plan details and socio-economic data related to the considered maps is provided by Senate of Berlin.

http://www.stadtentwicklung.berlin.de/geoinformation/fis-broker/index_en.shtml

The UrbClim input data (e.g. land surface parameters), output results (e.g. daily temperature statistics) and socio-economic data are processed by GIM.

<http://www.gim.be/en>

2 DESCRIPTION OF THE MAPS AND DATASETS

2.1 General Metadata

2.1.1 Map coordinate projection

The coordinate projection of maps and data is DHDN / Soldner Berlin (EPSG 3068).

2.1.2 Maps style

Two versions of maps are generated per socio-economic theme.

The first one (“_ backgr”) has World Imagery Service Layer as background of the map.

The second one (“_ nobackgr”) doesn’t contain any background.

2.2 Map Specific Metadata

2.2.1 Total population 2030

2.2.1.1 Maps delivered

Maps are delivered in PDF format and named accordingly:

- berlin_usc_2026-2045_nrhwdays_pop_2030_backgr.pdf
- berlin_usc_2026-2045_nrhwdays_pop_2030_nobackgr.pdf

2.2.1.2 Layer delivered

Layer name	Format	Attributes	Description
berlin_usc_2026-2045_nrhwdays_pop_2030	shp	FID	unique ID
		Shape	Type of shape Polygon
		ADMIN	Statistical unit code
		NAME	Statistical unit name
		TYPE_SOC	Social value type: population, population density...
		VALUE_SOC	Social value: number of estimated population per statistical unit in 2030
		TYPE_PHY	Physical value type: average number of heat wave days per year
		VALUE_PHY	Physical value: average number of heat wave days per year modelled over the period 2026 to 2045
CLASS_PHY	Physical class: average number of heat wave days per year interval class definition		

2.2.2 Number of inhabitants aged 0 to 17 years 2030

2.2.2.1 Maps delivered

Maps are delivered in PDF format and named accordingly:

- berlin_usc_2026-2045_nrhwdays_age0-17yr_2030_backgr.pdf
- berlin_usc_2026-2045_nrhwdays_age0-17yr_2030_nobackgr.pdf

2.2.2.2 Layer delivered

Layer name	Format	Attributes	Description
berlin_usc_2026-2045_nrhwdays_age0-17yr_2030	shp	FID	unique ID
		Shape	Type of shape Polygon
		ADMIN	Statistical unit code
		NAME	Statistical unit name
		TYPE_SOC	Social value type: population, population density...
		VALUE_SOC	Social value: number of inhabitants aged from 0 to 17 years old per statistical unit in 2030
		TYPE_PHY	Physical value type: average number of heat wave days per year
		VALUE_PHY	Physical value: average number of heat wave days per year modelled over the period 2026 to 2045
CLASS_PHY	Physical class: average number of heat wave days per year interval class definition		

2.2.3 Number of inhabitants aged 18 to 65 years 2030

2.2.3.1 Maps

Maps are delivered in PDF format and named accordingly:

- berlin_usc_2026-2045_nrhwdays_age18-65yr_2030_backgr.pdf
- berlin_usc_2026-2045_nrhwdays_age18-65yr_2030_nobackgr.pdf

2.2.3.2 Layer delivered

Layer name	Format	Attributes	Description
berlin_usc_2026-2045_nrhwdays_age18-65yr_2030	shp	FID	unique ID
		Shape	Type of shape Polygon
		ADMIN	Statistical unit code
		NAME	Statistical unit name
		TYPE_SOC	Social value type: population, population density...
		VALUE_SOC	Social value: number of inhabitants aged from 18 to 65 years old per statistical unit in 2030
		TYPE_PHY	Physical value type: average number of heat wave days per year
		VALUE_PHY	Physical value: average number of heat wave days per year modelled over the period 2026 to 2045
CLASS_PHY	Physical class: average number of heat wave days per year interval class definition		

2.2.4 Number of inhabitants aged +65 years 2030

2.2.4.1 Maps delivered

Maps are delivered in PDF format and named accordingly:

- berlin_usc_2026-2045_nrhwdays_age+65yr_2030_backgr.pdf
- berlin_usc_2026-2045_nrhwdays_age+65yr_2030_nobackgr.pdf

2.2.4.2 Layer delivered

Layer name	Format	Attributes	Description
berlin_usc_2026-2045_nrhwdays_age+65yr_2030	shp	FID	unique ID
		Shape	Type of shape Polygon
		ADMIN	Statistical unit code
		NAME	Statistical unit name
		TYPE_SOC	Social value type: population, population density...
		VALUE_SOC	Social value: number of inhabitants aged 65 years and older per statistical unit in 2030
		TYPE_PHY	Physical value type: average number of heat wave days per year
		VALUE_PHY	Physical value: average number of heat wave days per year modelled over the period 2026 to 2045
CLASS_PHY	Physical class: average number of heat wave days per year interval class definition		