



Kartverket

Visualization of storm surges and future sea level

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TWCWG, April 2018*



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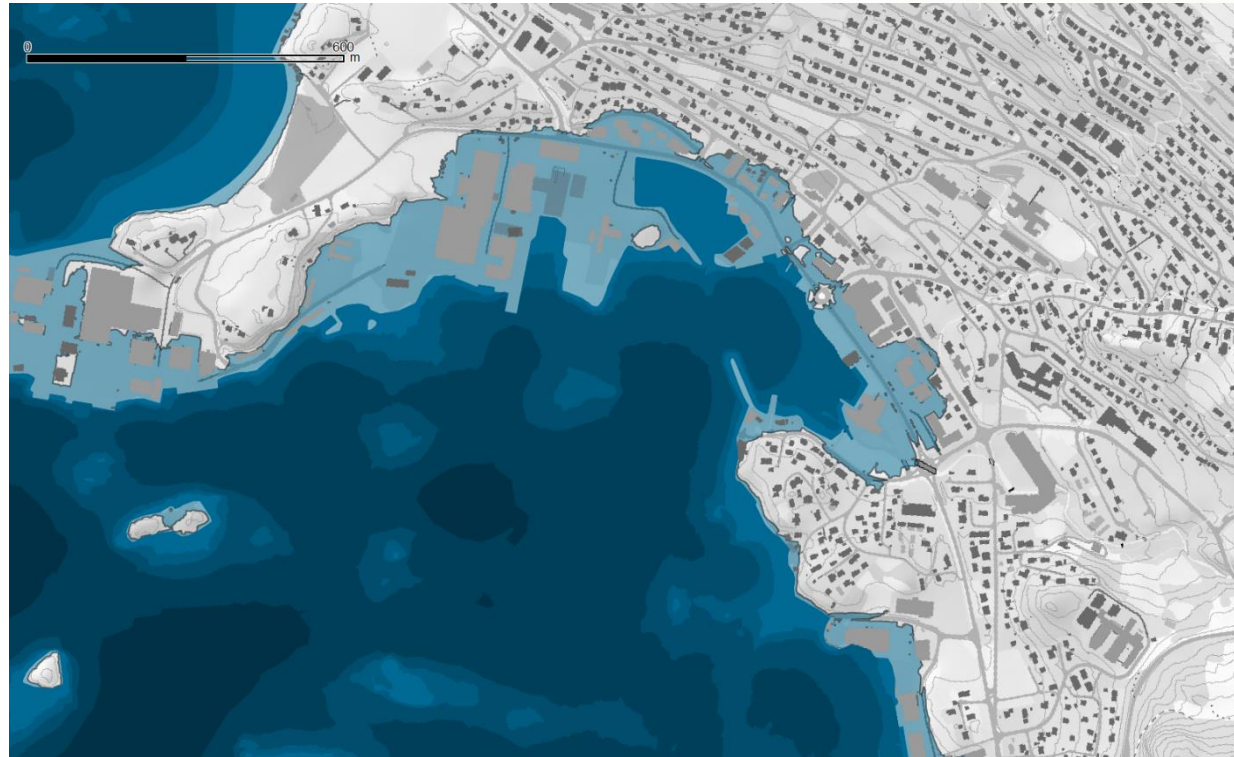


Kartverket

The aim of the project

visualization of sea level

- Develop a tool to visualize the consequences of the storm surges both today and in the future.
- To spread knowledge about sea level change and the risks connected to it.



Combining many different data sets in on tool

Visualization of sea level uses

- Detailed terrain model
- Data from the cadaster
- Statistical calculations of return levels of storm surges*
- Predictions of future sea level*



*

**Sea Level Change
for Norway**
Past and Present
Observations and
Projections to 2100

Visualization of sea level in maps

- Visualization in maps as part of our existing webpage
 - Predefined layers
 - Professional and non-professional users
- Layers available for downloading
 - to be used by professionals in their preferred GIS tool

Visualize sea level

Norsk | English

Find location or water meter to see estimates of impact of floods and future ocean level change.

Stavanger x

Set year of estimated sea level and flood level to display flooded areas, roads, and buildings.

Sea level *i* Storm surge height *i*
2090 200-year storm surg

Stavanger municipality

Flooded areas with 200-year storm surge in 2090.

Buildings	Roads	Area
1536	19633 m	2601683 m ²

SEE MORE DETAILS >

SHOW DATA TABLE PRINT MAP SHARE

MORE INFORMATION ON SEA LEVEL, STORM SURGE HEIGHTS, AND VERTICAL DATUMS FOR STAVANGER ON KARTVERKET.NO

Adjust map Show more layers >

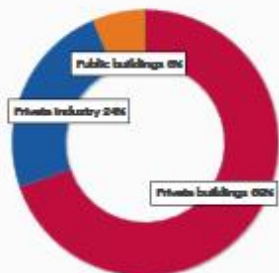
Kartverket Find GIS layer for municipality here



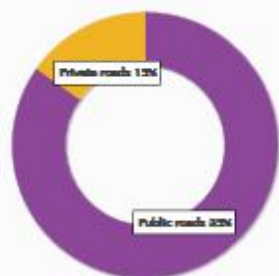
Flooded areas with 200-year storm surge in 2090.

SHARE

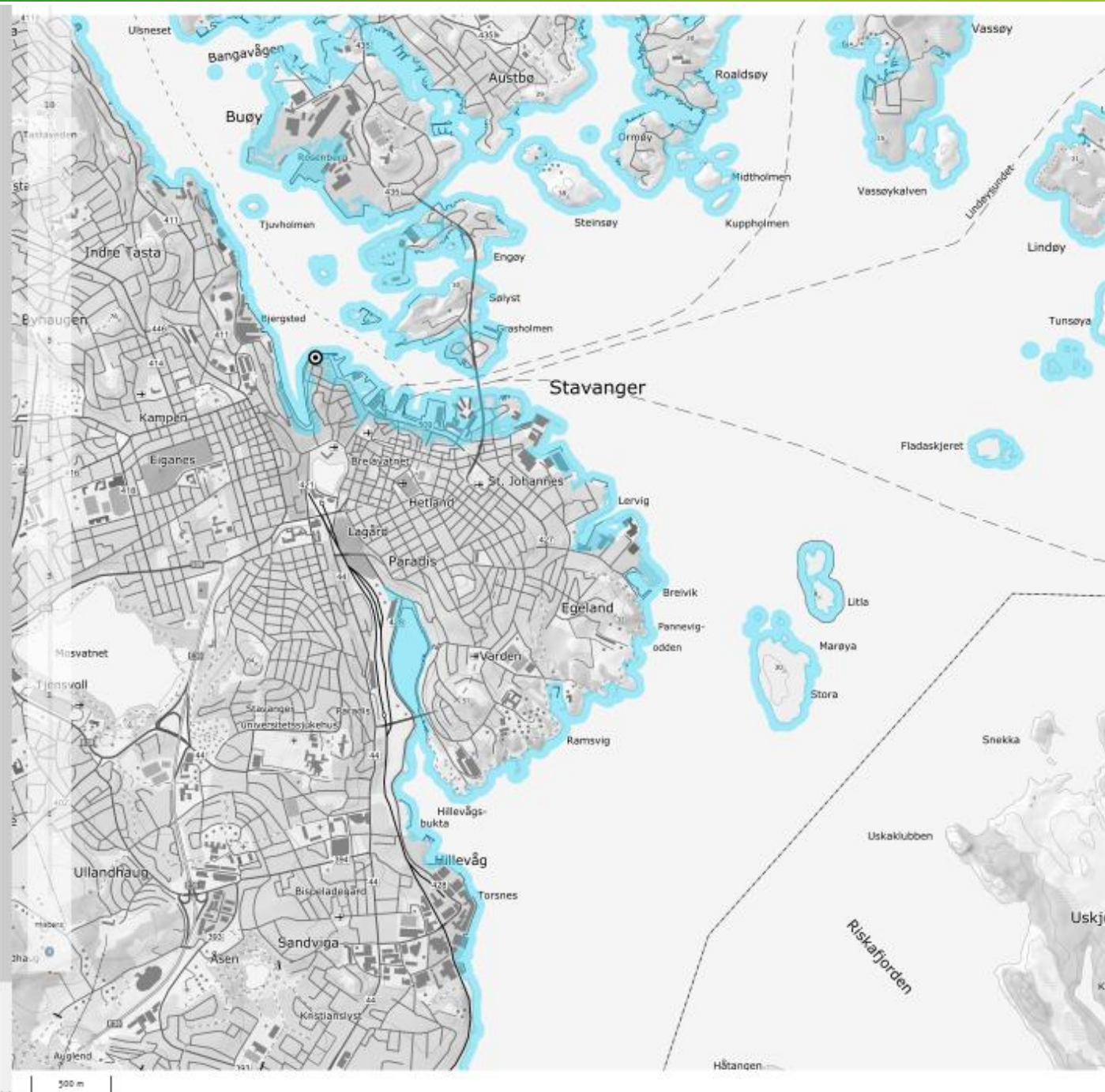
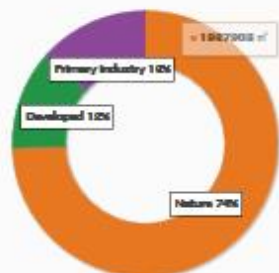
1536



19633



2601683



Stavanger

Set year of estimated sea level
display flooded areas, roads

Sea level ⓘ

2090

BACK

Stavanger municipality

Flooded areas with 200-year
2090.

SHOW DATA TABLE

PRINT MAP

Buildings flooded

1536

Public buildings 6%

Private industry 24%

Priv

Stavanger municipality

DOWNLOAD CSV

	Buildings flooded				Roads flooded		Area flooded			
	Private buildings	Private industry	Public buildings	Critical infrastructure	Public roads	Private roads	Developed	Nature	Primary industry	Public facility
Oversvømt nå	273	48	10	0	1562	0	20785	233178	20679	0
MHWS nå	289	48	10	0	1578	0	21624	269647	23954	0
20-års returnivå nå	646	138	29	0	4014	435	42340	954012	114070	0
200-års returnivå nå	717	188	36	0	5764	962	59480	1146135	145422	0
1000-års returnivå nå	781	234	53	0	8655	1349	103340	1293560	175344	0
Oversvømt 2090	461	89	19	0	2469	215	32780	636597	73248	0
MHWS 2090	484	96	22	0	2769	249	34810	695227	84158	0
20-års returnivå 2090	962	336	86	0	14848	2586	234008	1788095	300596	0
200-års returnivå 2090	1054	363	97	0	16648	2985	316836	1937908	346939	0
1000-års returnivå 2090	1102	391	105	0	17782	3098	428900	2031810	378769	0
1m havnivåstigning	623	197	38	0	6246	988	65197	1028000	143848	0
2m havnivåstigning	1069	419	115	0	19684	4191	585683	2127083	439714	0
3m havnivåstigning	1590	491	153	0	28813	6115	783456	2953480	761207	2587
4m havnivåstigning	2098	533	175	0	34467	7108	884737	3537451	1064515	18008
5m havnivåstigning	2590	578	189	0	39921	8352	969423	4104852	1343186	22221
10m havnivåstigning	5213	778	293	5	72871	14688	1365428	6542412	2985220	61047
15m havnivåstigning	8953	1020	412	7	132795	20444	2232836	9053761	5824439	177035

Many potential users

- Planning
 - Where to (or not to) build houses, parks, roads,...
 - Where to adopt, change, secure,...
- Stakeholders
- Educational
- Adding detailed bathymetry could give further uses:
 - Future seaways
 - Study how the water body will change
 - Where will different species prefer to be in the future?

Test site for review

<https://test1.kartverket.no/sehavniva/visualisering-av-havniva/>

Visualize sea level

Norsk | English



Find location or water meter to see estimates of impact of floods and future ocean level change.

If you have any feedback you can send it to:
sanhil@kartverket.no

Thank you!

