Robust decision making

Handling uncertainties in climate change adaptation

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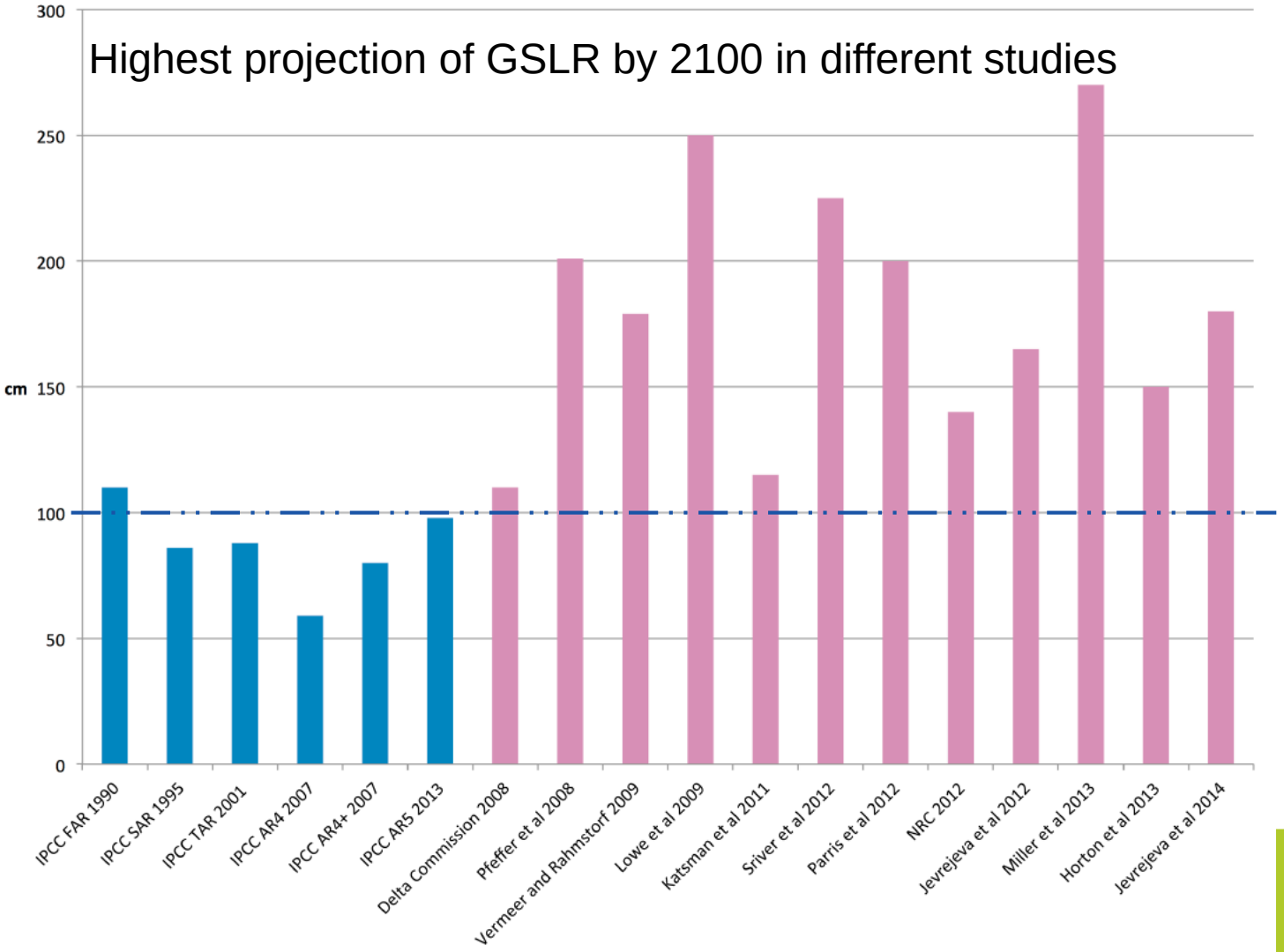
We want to question current practices in planning for sea level rise

The County Administration Board in Stockholm recommends the lowest level of the ground for new buildings to 2.7 m above current sea level.

This level is based on an assumption of an “upper limit” of global mean sea-level rise of “approximate 1 m” by 2100 based on a report from the consultancy branch of SMHI.

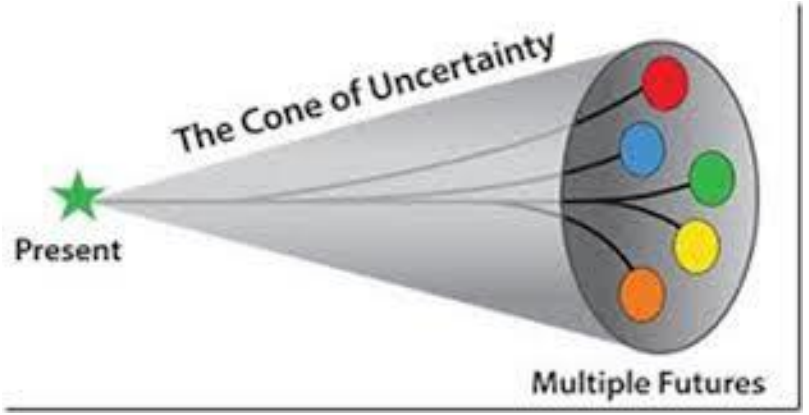
- Is it always desirable to plan for worst case?
- Why plan for 2100? The sea level will continue to rise.

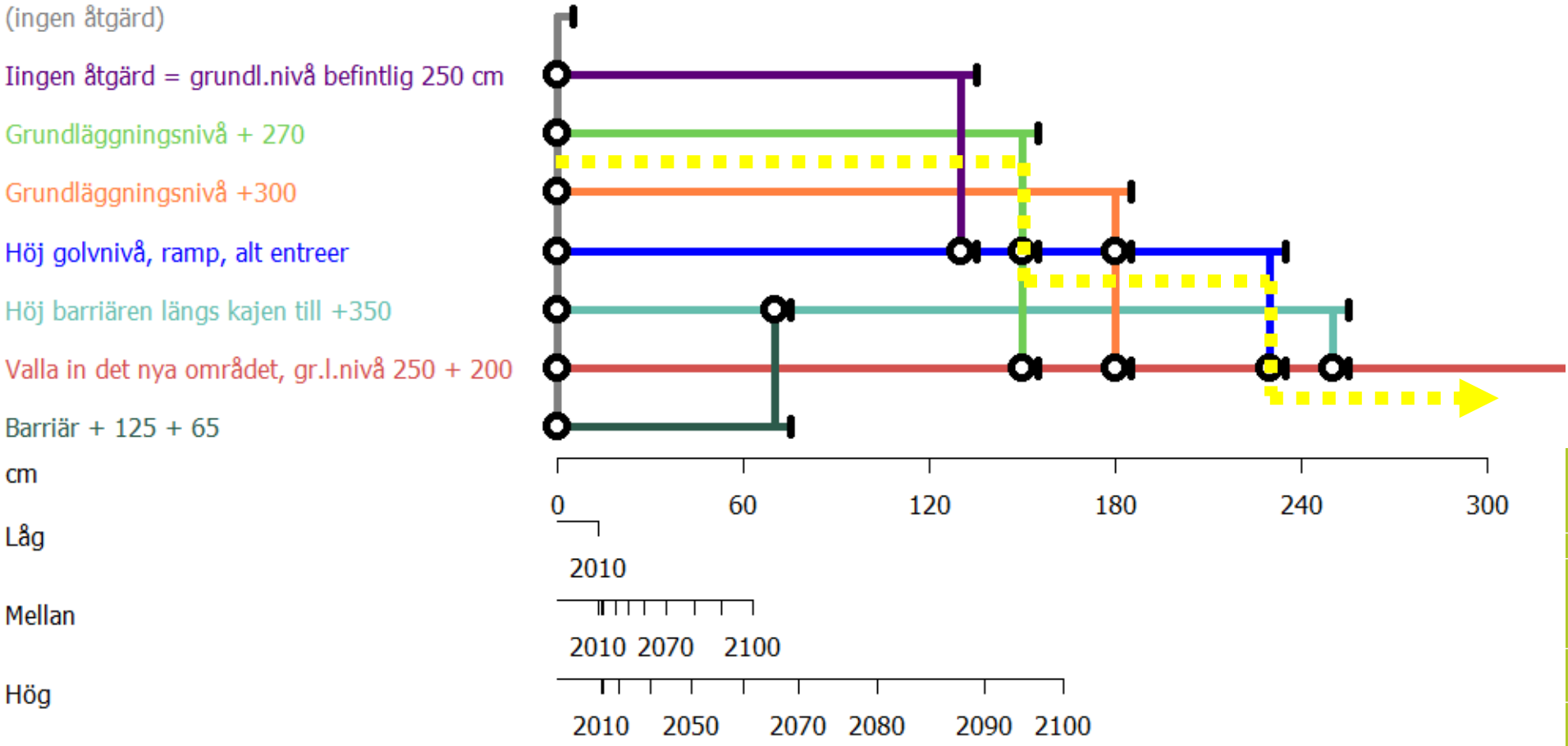
Highest projection of GSLR by 2100 in different studies



Robust decision support methods

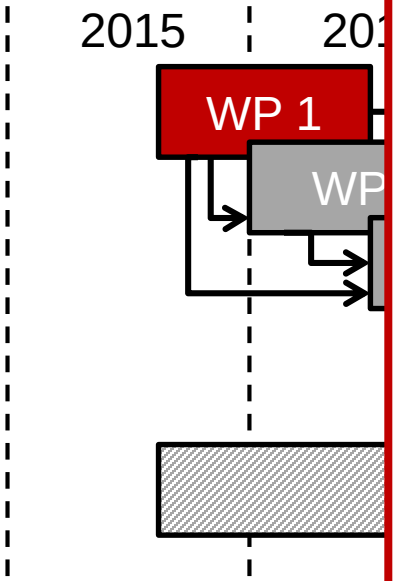
- Aid decision makers in developing strategies that perform adequately over a wide range of uncertain future states of the world





Map generated with Dynamic Pathways Generator, @2015, Deltares, Carthago Consultancy

Work packages



WP1: What characterize robust decision making?

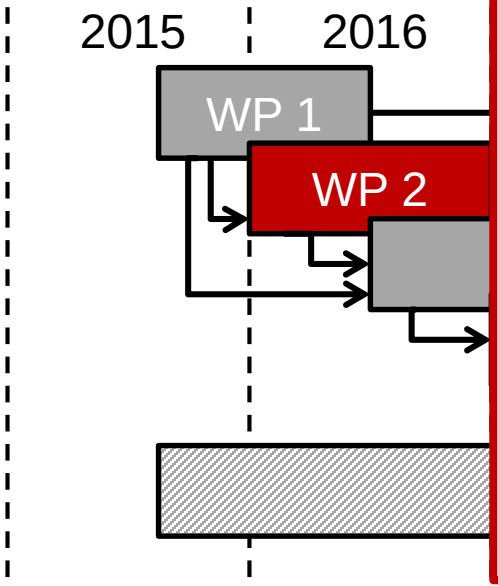
Three key principles

Principle 1: **Embrace uncertainty** by taking into account the relevant types and full ranges of uncertainties.

Principle 2: Use a **bottom-up process** that starts from the specific decision context by analyzing the consequences of different options.

Principle 3: Find static or flexible **robust solutions** that reduce vulnerability to uncertainty.

Work packages



WP2: Do current local adaptation practices use the principles for robust decision support methods?

Five cases on national, regional and local levels

1. Uncertainities are mostly not embraced:
   one worst-case prefered but how is it defined?

2. Top-down approaches only

3. Both static and flexible solutions

Five cases

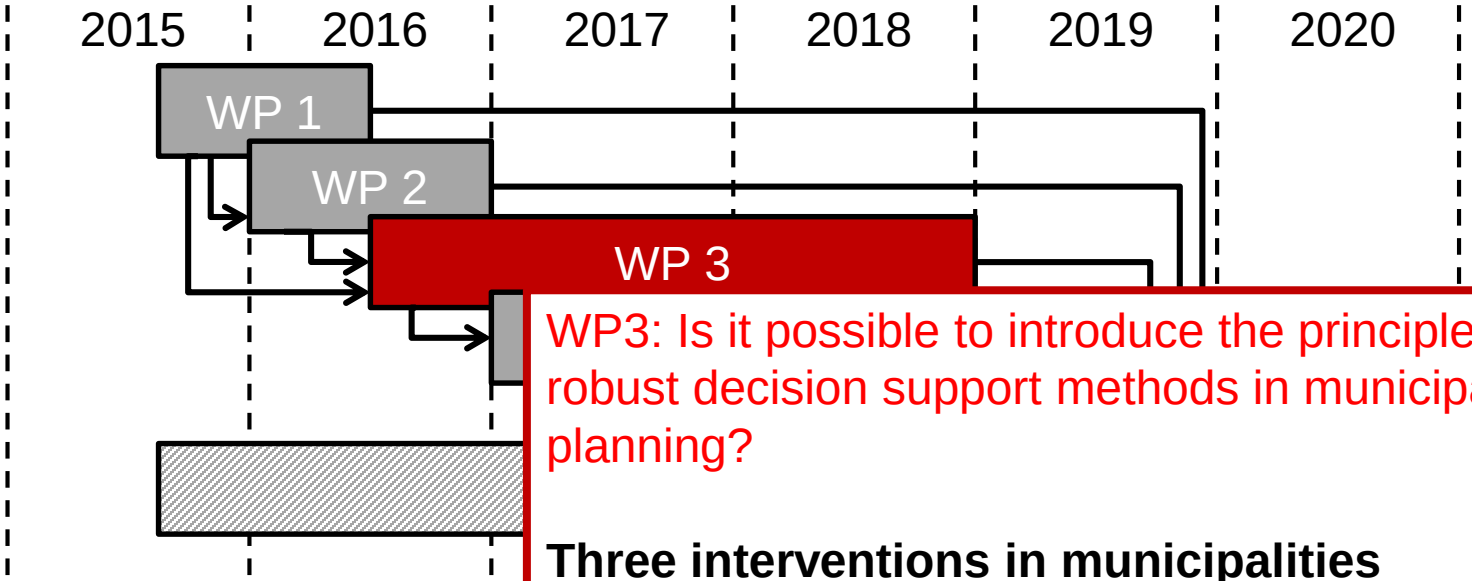
Comprehensive plans in Nacka and Haninge

A local plan in Gothenburg

A repository for radioactIve waste

A railway tunnel, the West link in Gothenburg

Work packages

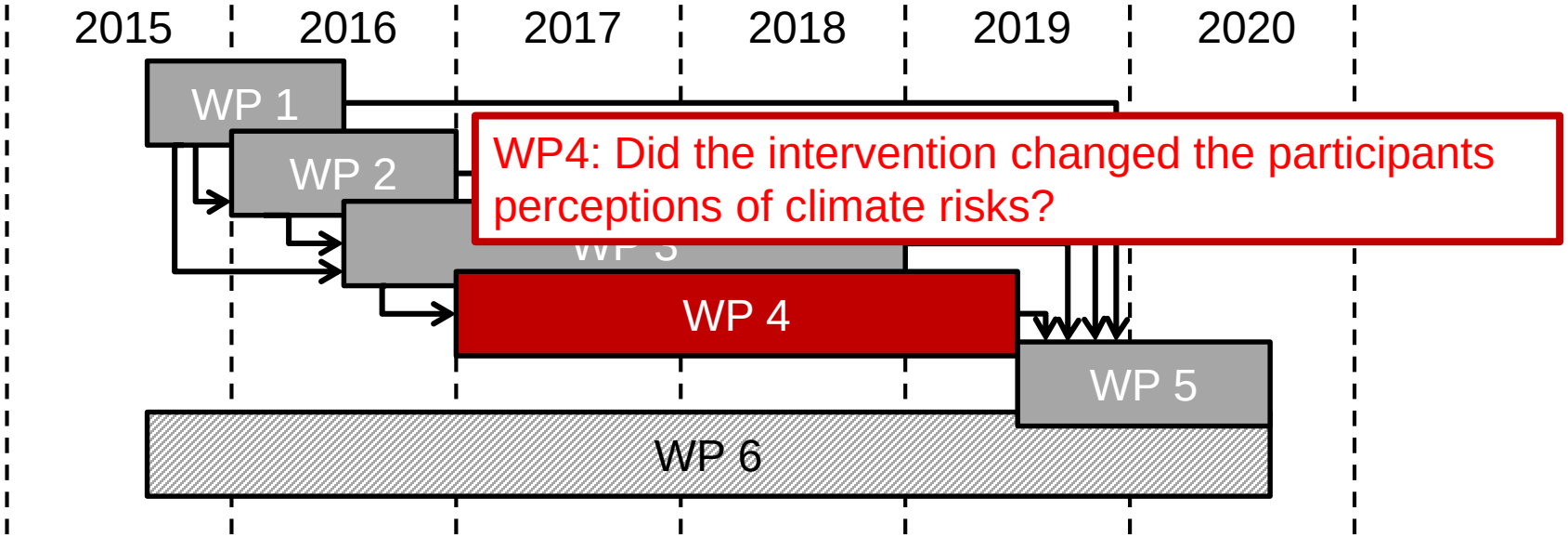


WP3: Is it possible to introduce the principles for robust decision support methods in municipal planning?

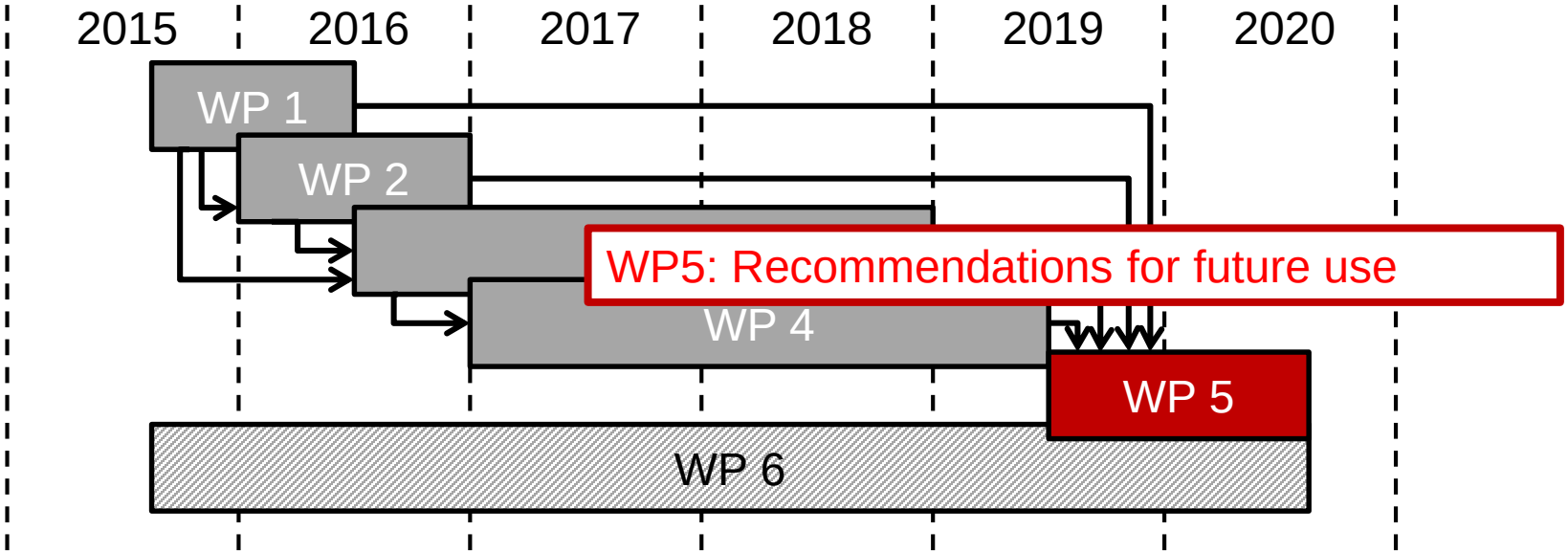
Three interventions in municipalities

1. There are opportunities,
2. … but also challenges

Work packages



Work packages



Conclusions

Robust decision making methods could be an alternative to secure critical infrastructure, rather than to plan for a single worst scenario.