Cooperating with Spatial Planners – case – a simple societal risk tool.

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en del af trekantområdet
Individual risk levels around hazardous industry
Housing, offices, recreative, community activities

Harbour area, heavy industry and hazardous industry

A Modern Classic Planning Dilemma
Example – simple tool - quick, conservative (restrictive) societal risk assessments for land use planning

tips and hints

Spread ownership - of societal risk aspects of planning near hazardous industry.
SD GOALS, SENDAI, INDUSTRIAL ACCIDENTS CONVENTION

SUSTAINABLE DEVELOPMENT GOAL 11
Make cities and human settlements inclusive, safe, resilient and sustainable

- reduce the **number of deaths** and the **number of people affected** and substantially decrease the direct economic losses

- increase the number of cities and human settlements adopting and implementing integrated policies and plans towards…..…..resilience to disasters, and develop and implement, in line with the Sendai Framework for Disaster Risk Reduction 2015-2030, **holistic disaster risk management at all levels**

11.B.1
Proportion of local governments that adopt and **implement local disaster risk reduction strategies** in line with the Sendai Framework for Disaster Risk Reduction 2015-2030

Chart of the Sendai Framework for Disaster Risk Reduction
2015-2030

Priorities for Action

**Priority 1**
Understanding disaster risk

**Priority 2**
Strengthening disaster risk governance to manage disaster risk
Good planning tools help in understanding of risk level in beginning of planning process.

Allowing development or restricting development at beginning of planning process.
SOCIETAL RISK

UK HSE definition:

Estimating the chances of people being harmed from an industrial incident

Societal risk sets out to provide a single measure of the chance of accidents that could harm a number of people in one go, around onshore non-nuclear major hazard sites.”

Typically expressed in the form of an FN graph:

F- cumulative frequency of accident scenarios
N – numbers of people killed in one accident
4.2 Stedbunden risiko
Som baggrund til beregning af samfundsrisikoen, er der taget udgangspunkt i den stedbundne risikoberegning, som ses på nedenstående figur 4-1.

VURDERING AF SAMFUNDSRISIKO I VEJLE BY

<table>
<thead>
<tr>
<th>Resulterende FN-kurve</th>
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<tr>
<td>ligger i følgende område:</td>
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<tr>
<td>Tilladelig</td>
<td>ALARP</td>
<td>Uacceptabelt</td>
</tr>
</tbody>
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Figur 5-4 Mulige resultater for den resulterende FN-kurve
BACKGROUND FOR THE VEJLE MODEL FOR QUICK RISK ASSESSEMENT

• Need for better, quicker tools.

• Too much reliance on industrial risk inspectors (knowledge not based in planning department)

• Planners felt that risk assessment was not their ”field”.

• Land-use planners and industry inspectors find risk assessment, including societal risk, hard to understand and discuss.
• Need for quick evaluations in a fast working, politically controlled environment.

• Need for professional quantitative evaluations – both as quick, draft, evaluations and as final conclusions.
From complex tools to simple tools
Case
Yacht Club area, Vejle Harbour 2008 – 2018 and onwards

• New water sports club facilities
• New high rise housing
• New office buildings
• Close to Seveso III lower tier chemical industry (hazardous)
Sensitive activities, eg. “Wild about Water”
Development area and Vejle Yacht Club

Hazardous company
The tool - spreadsheet

• A spreadsheet model with drop down menus

• Tested against the direct use of Phast Risk software

• Conservative Go-No Go model

• Result – 3 possibilities: ”acceptable/maybe – needs detailed analysis (ALARP)/ unacceptable”
The existing status for new, sensitive developments – persons and placement on iso curves – with a good deal of development projects completed.
Isocurves $10^{-6}$ is one death in one million years.
A document, with the calculated societal risk for the new land use, is prepared for the land-use casework – incl. the official hearing of the coordinating industrial risk authority.
TIP NR. 1
FOR HAZARDOUS INDUSTRY INSPECTORS

Don’t feel isolated – don’t keep knowledge to yourself

• Make sure land use planners know about national and international rules and guidelines for planning around hazardous industry.

• Your knowledge is strategic knowledge – municipal leaders in several sectors should be made aware of risks and the need to recalculate risks - with changes at and around industry.
TIP NR. 2
FOR HAZARDOUS INDUSTRY INSPECTORS AND LAND-USE PLANERS/LEADERSHIP

• Planning models can be based on **industry vigilance and good inspection practises**

• Important to have **detailed check of safety management systems** and documentation in connection with approval processes.

• Rigourous inspections/inspection plan is necessary – checks of all relevant barriers in the prevention of accidents – not least education and competency at the industry. **Barriers are the basis of probability input to models.**
Hazardous companies in cities with a dynamic development profile need dynamic risk and land-use planning tools (or continual expert consultancy assistance).
ADVANTAGES

• Quick response times
• Saves time in planning process and money.
• No need for consultant for every new development
• Common understanding
• Conservative calculation (erring on the side of caution)
Learning Points/Recommendations

• Project leadership – ensure all important elements are in the model - that it encompasses future populations in already approved land uses.

• Internal guidance on updating the model/documentation of changes

• Information across (municipal) government sectors – about the need to use the model
Thank you

Questions?