

# Asset Management at RWS

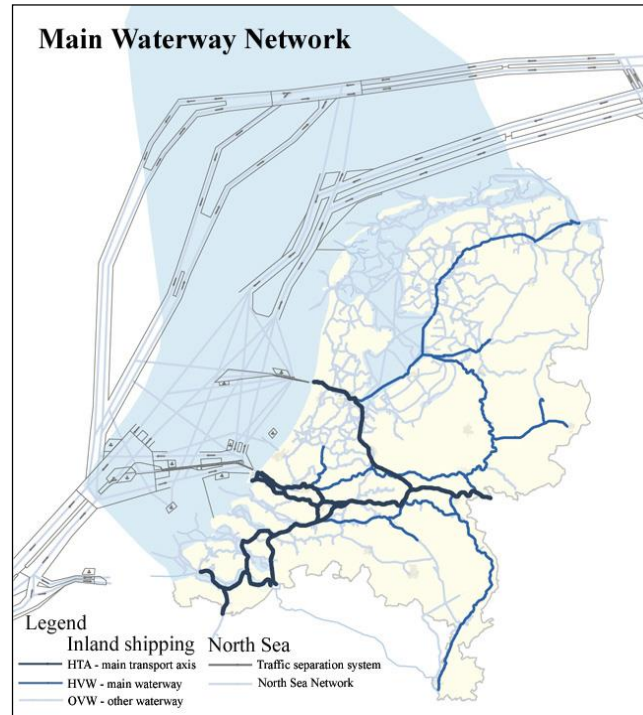
Jenne van der Velde  
26th March 2019





# Rijkswaterstaat's area of management

Rijkswaterstaat manages three National Infrastructure Networks





# Management Area Main Highway Network

Rijkswaterstaat manages:

- ~3,100 kilometres of highways including traffic signalling systems
- ~1,300 kilometres of slip roads and exits and connecting roads
- ~25 rush-hour lanes
- ~2,500 viaducts
- ~15 tunnels
- ~715 moveable and fixed bridges
- ~7 ecoducts





# Why Asset Management?

Alignment between policy intentions and real, on-the-ground delivery.

Decision-making aligns with intentions in a structured, transparent and coherent manner.

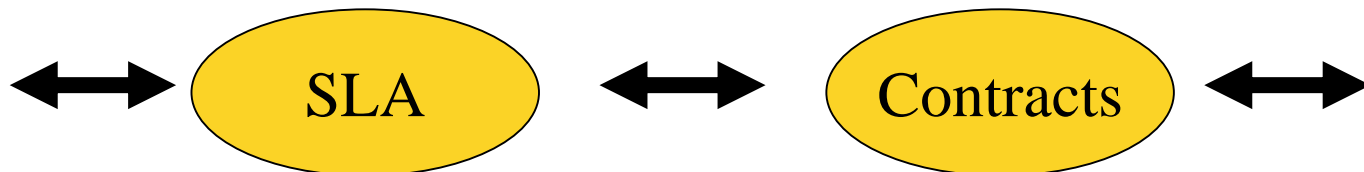
Minimize and avoid costs.

Balancing between acceptable risks, costs and performance.





## Roles (also according to ISO55001)





# Decomposition of the networks

**Network**

**Overall system**

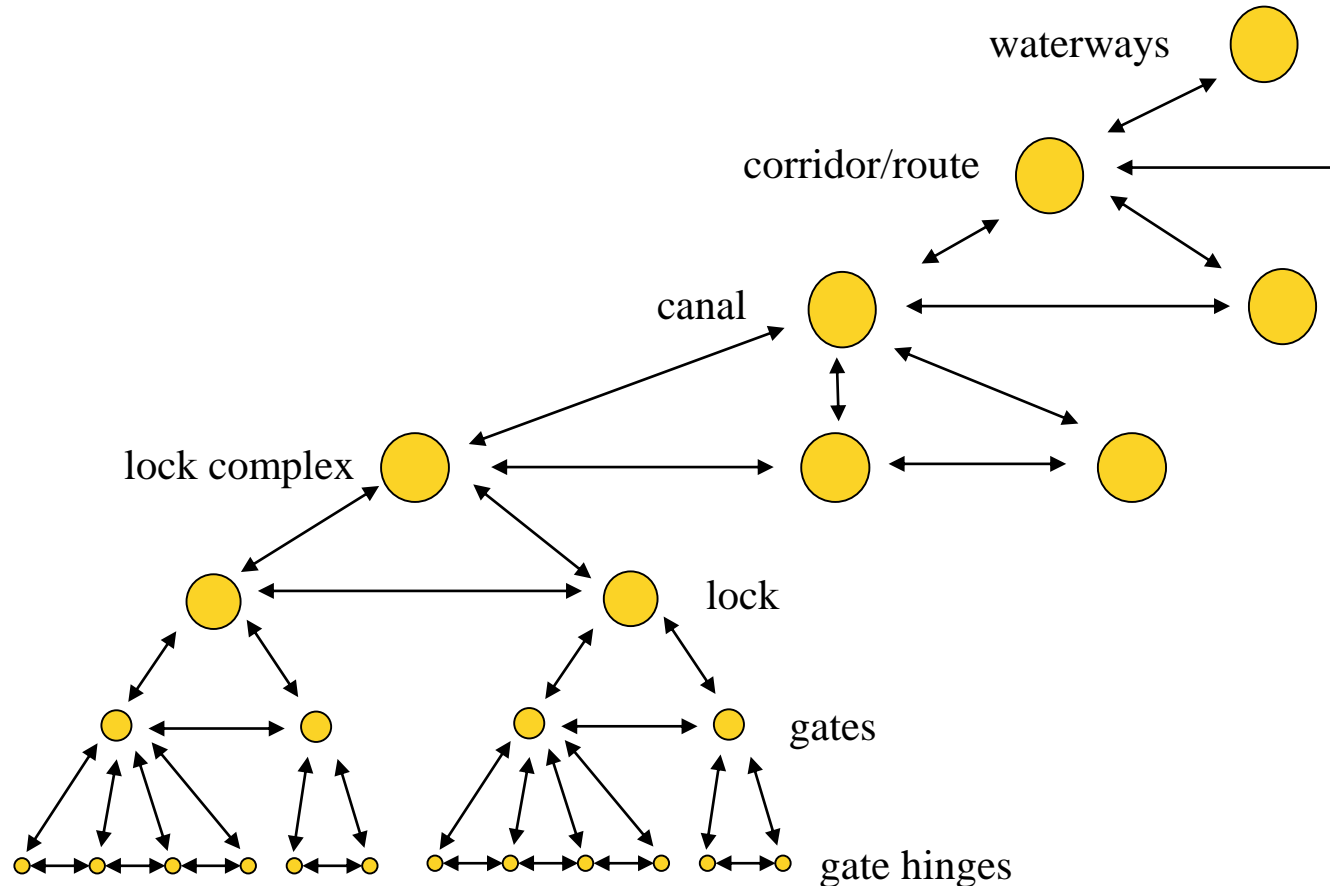
**System**

**Sub-system**

**Basic object**

**Maintenance object**

**Inspection object**





# Decomposition of the networks

## Network

waterways

## Overall system

corridor/route

## System

canal

## Sub-system

lock complex

## Basic object

lock

## Maintenance object

gates

## Inspection object

gate hinges

Coherently coupled through  
RAMSHEEP 'language'

- R = Reliability
- A = Availability
- M = Maintainability
- S = Safety
  
- S = Security
- H = Health
- E = Environment
- E = Economics
- P = Politics



## Challenges...

Single structure

→ Network operations

Implicit decisions

→ Explicit (based on RAMSSHEEP)

Project (cost)

→ Life cycle approach (cost, performance and risk)

Outcome ↔ Output ↔ Throughput ↔ Input  
(i.e. Line of Sight)



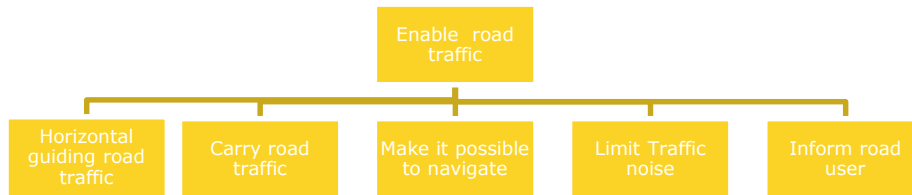


# Creating line of sight (1)

Accessibility

Environment

Safety



Policy goals...

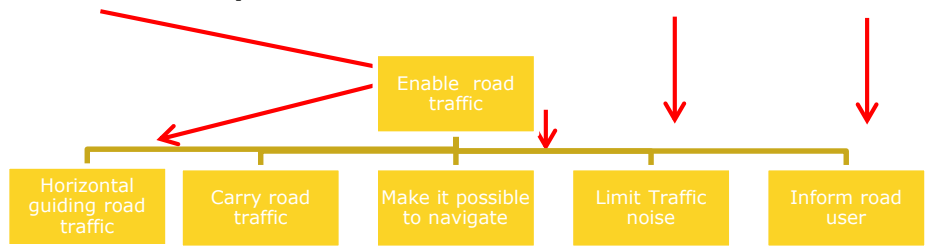
The functions ...

The assets ...



# Creating line of sight (2)

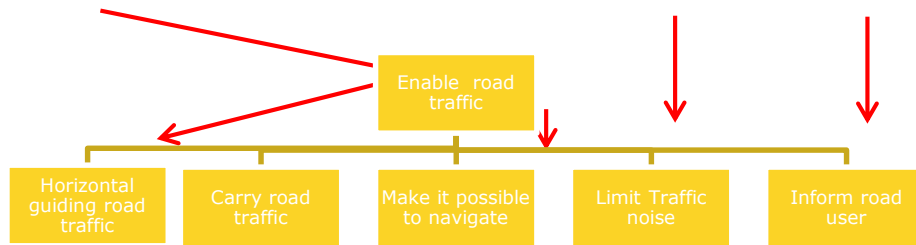
Accessibility      Environment      Safety





# Creating line of sight (3)

Accessibility      Environment      Safety



Policy goals...

...via...

The functions...

...connect with...

The assets...

Choose the maintenance strategies  
In order to deliver the required functions performances  
To contribute to the policy goals ...



## RWS Approach

- Based on PAS55/ISO55001 (system, culture)
- Information management → BIM and AIR
- RAMS SHEEP (incl. resilience, adaptive plans, future use)
- Stakeholder engagement (IAMPRO, AM4INFRA, NGI, ....).
- Sensortechnology

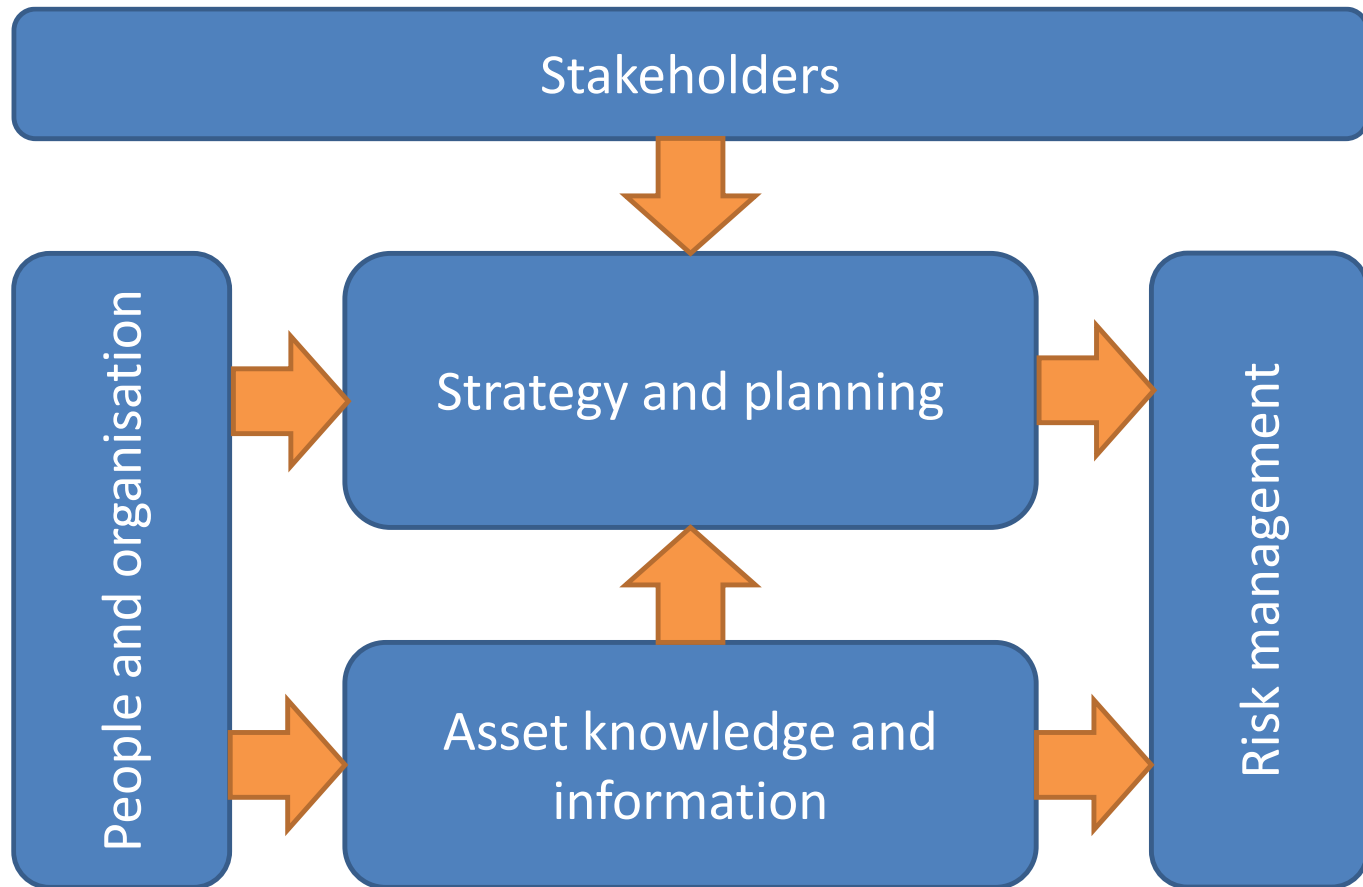


# Joint projects and effort

- CEDR → Network Governance
  - Maturity Assessment (see example)
  - Strategic challenges for the networks
- AM4INFRA → European project
  - Common approach for 'Line of Sight'
  - Good Methods for decisionmaking (LCC, Risk Approach,..)
  - Use of IT for Asset Management
- I4dF → European project (Infra for the future)
  - Identifying future joint innovation subjects



## Example Maturity Assessment (1)



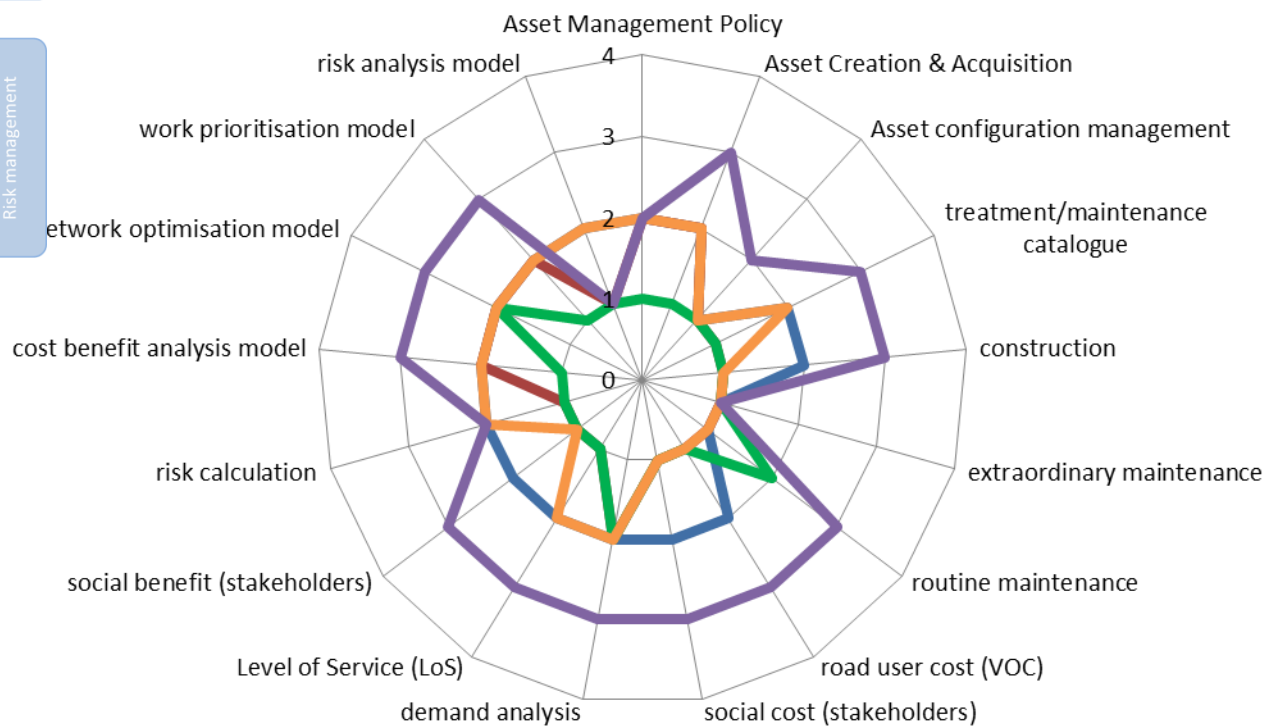
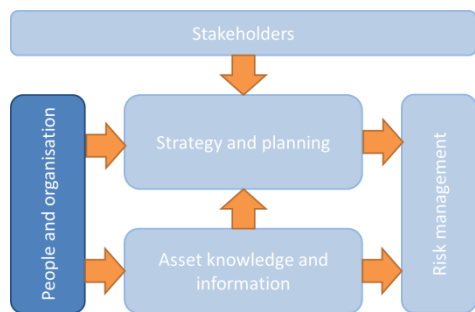


## Example Maturity Assessment (2)

Maturity Levels - General Definition		
Level	Description	Definition
1	Initial - Entry	The agency either has not recognised the need for this requirement or if it has recognised it, there is no evidence of intent to progress it.
2	Basic - Marginal	The agency has identified the way to achieve the requirements and can demonstrate some progress in achieving them. Procedures however may not be clearly set out or repeatable
3	Competent - Proficient	No formal ISO system applied but the agency can demonstrate that it achieves relevant requirements set out in ISO 55001 in a systematic and consistent way.
4	Excellence - Optimized	The agency has deployed and can demonstrate that it achieves all requirements set out in ISO 55001, exceeds some of them and that it is systematically looking for optimizations in its Asset Management practice, maximizing value from the management of its assets.



# Example Maturity Assessment (3)







## What can we learn from each other?

- TII: LCC thinking
- RWS: Funding and performance based contracting
- AWW: Stakeholder surveys and engagement
- ANAS: Connect and join IT systems to useful data for users
- SIA: Line of sight from Strategy to Directives and Operational plan.



# Questions

