

# General assessment methodology

Juan Carlos Mora Canadas and  
Richard O'Brien, for Working Group 2  
“Legacy sites and NORM”  
draft

# Ideas(1)

- Clearly define the aim of the methodology
- Define the overall problem/objective
- Release from regulatory control
  - Restricted
  - Unrestricted
  - Land use
- Site characterisation
  - Operational
  - Legacy
  - Non-radiological hazards
  - Pathway analysis
  - Monitoring
- Cleanup criteria
  - Optimisation and/or limitation of risk

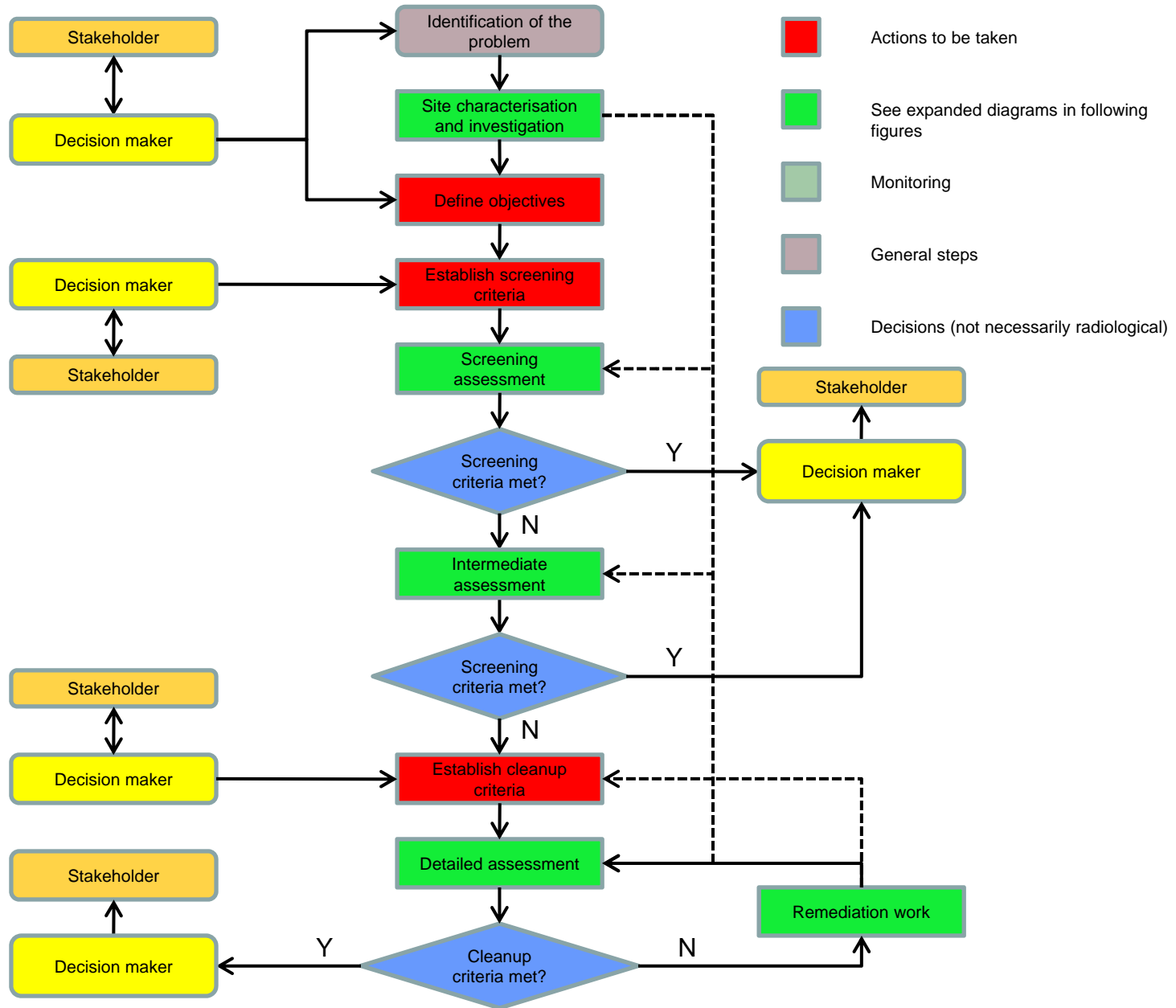
# Ideas(2)

- Dose assessment
  - Important to understand site-specific processes and models used
  - Site-specific data used where possible
  - Models
    - Refer to guidance on which models to use (IAEA document)
    - Which models are available
    - What data do they need
      - Different models need different data
  - Need to assess present and future doses
  - Effects of different remediation processes
    - Environmental impact
    - Public health impact
    - Doses to workers

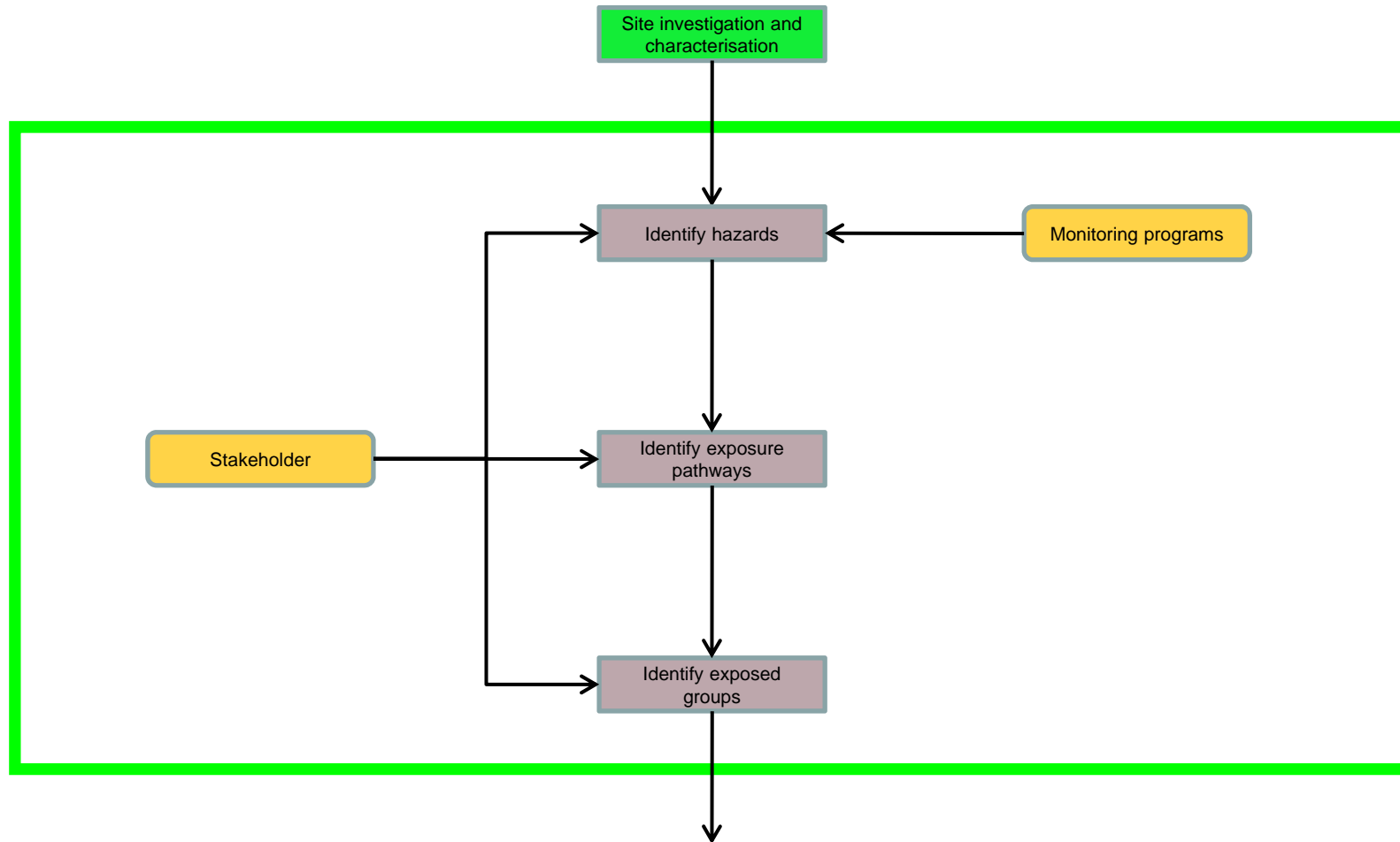
# Ideas(3)

- Tiered approach to assessment
  - Screening assessment (simple, conservative assumptions)
  - Intermediate assessment (more realistic assumptions)
  - Detailed assessment if necessary
- Look at IAEA Nuclear Energy Series NW-T-3.3  
“Integrated approach to planning the remediation of sites undergoing decommissioning”
- Keep needs of different groups as generic as possible
- Refer to decision-makers rather than regulators and operators
- Provide decision makers with several options and their possible consequences
- Guidance/recommendations – not mandatory

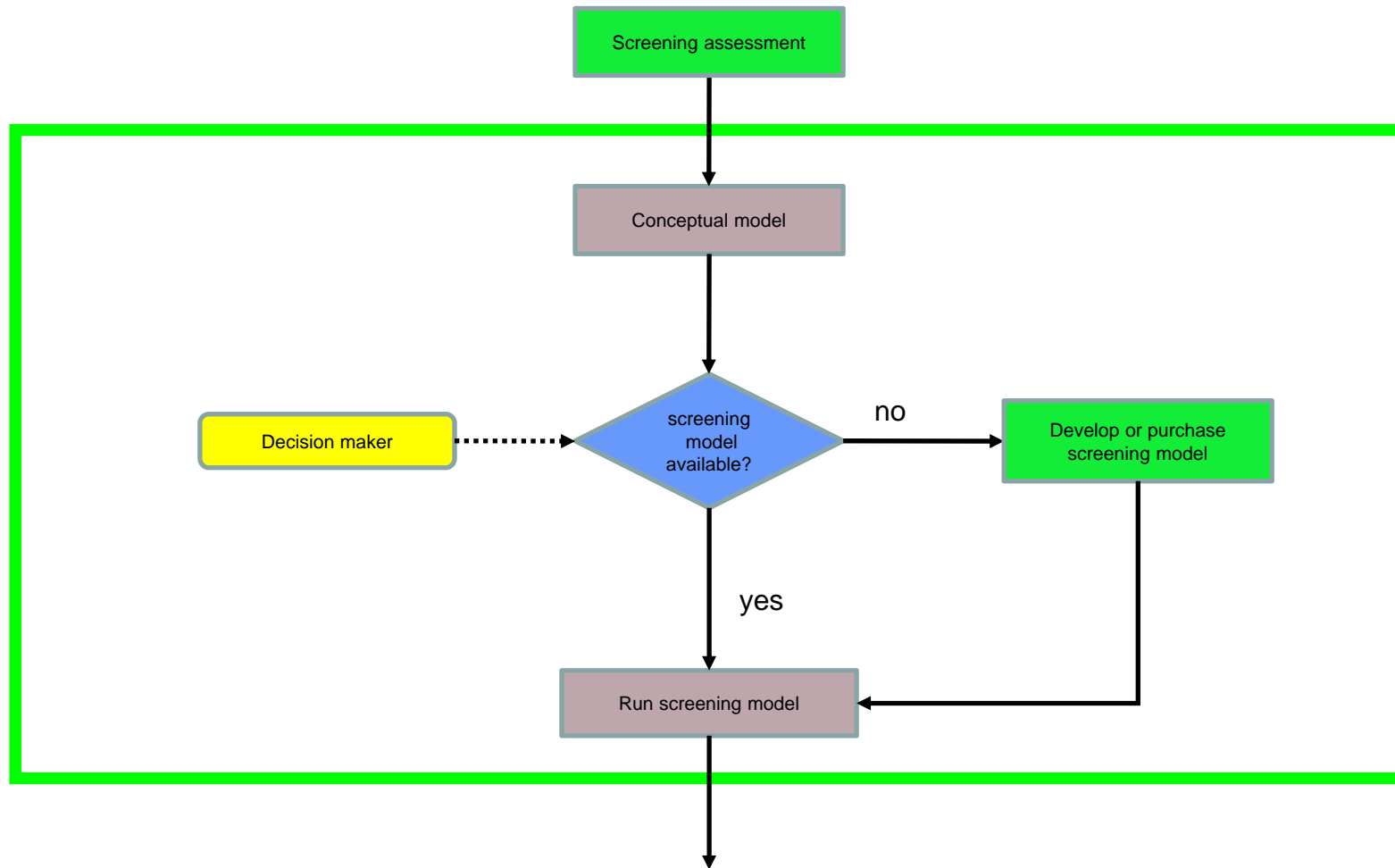
# Overall process



# Site investigation and characterisation



# Screening impact assessment methodology

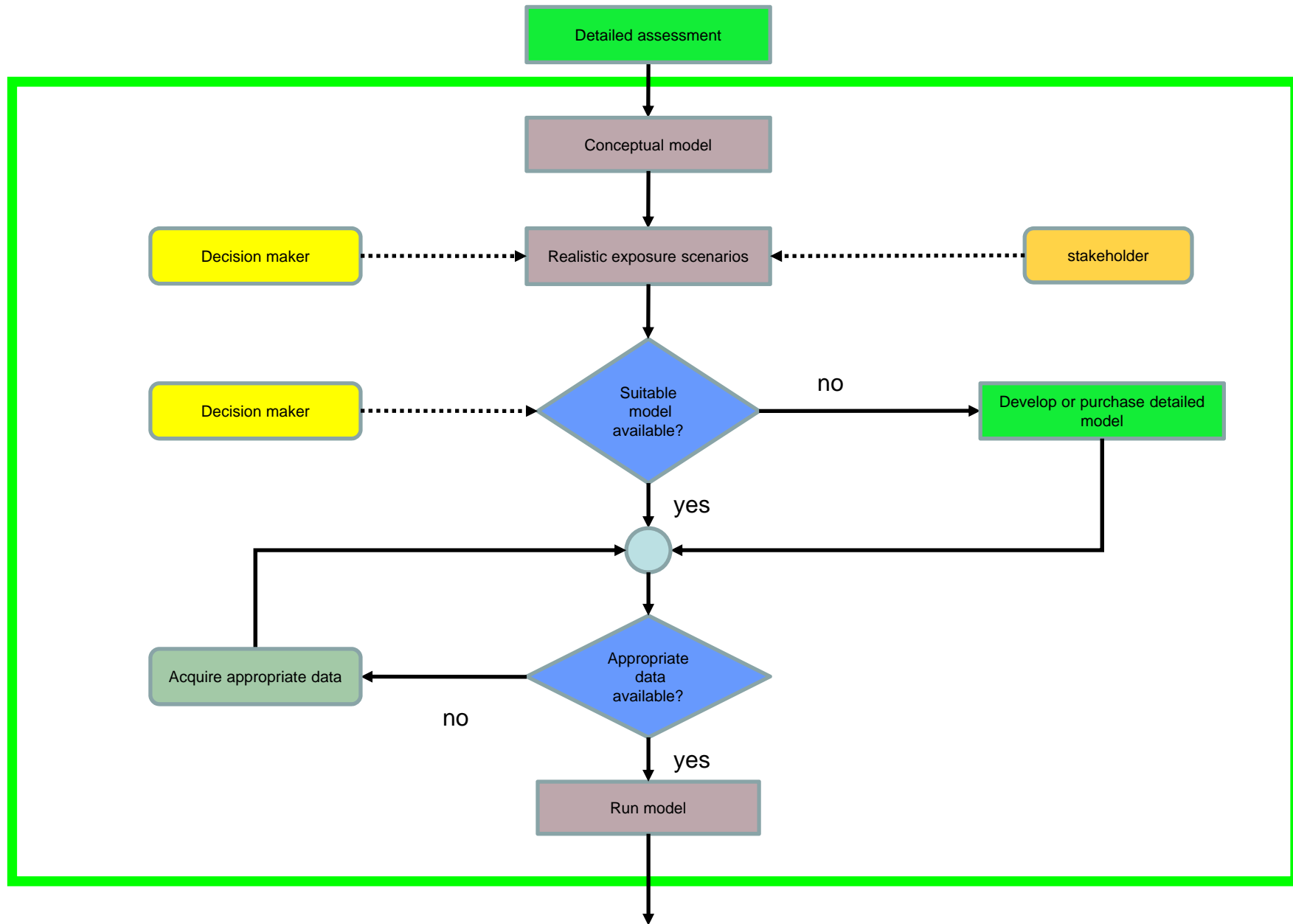


Screening model:

Simple but as realistic as possible

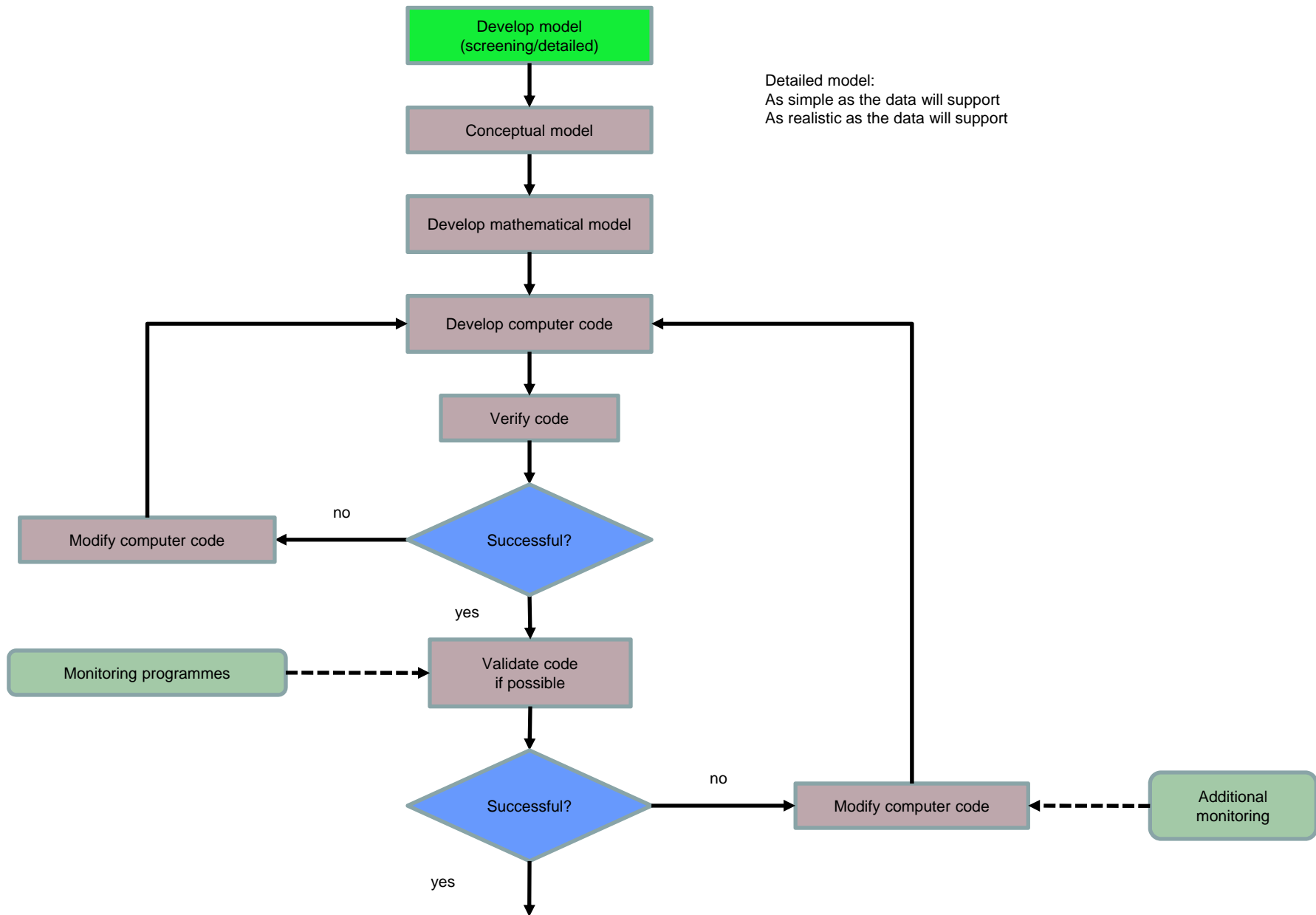
Conservative but not too conservative

# Detailed impact assessment methodology

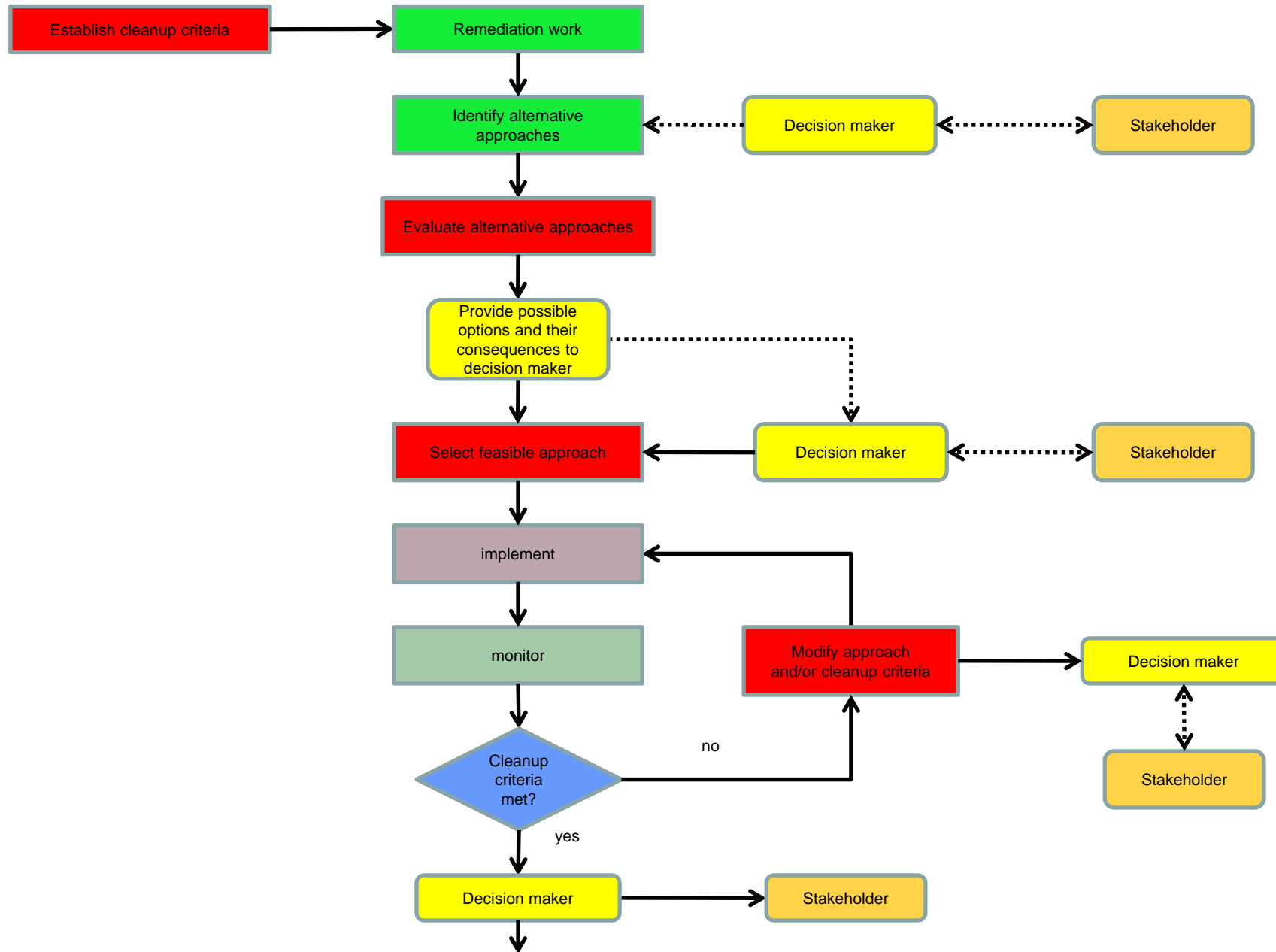




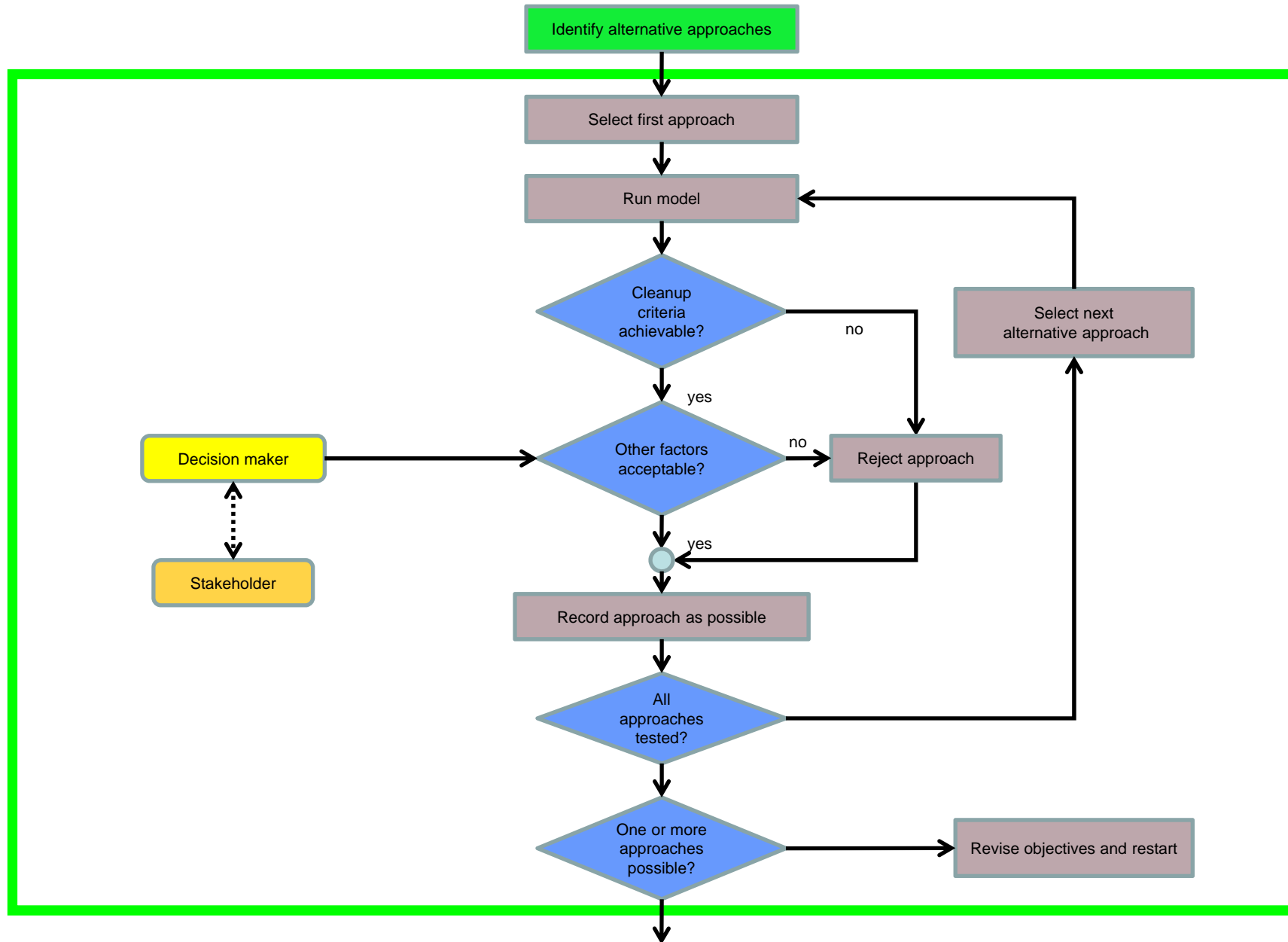
# Model development methodology



# Remediation methodology



# Evaluation of alternative approaches



# Cleanup criteria and other factors

- Site-specific
- Based on
  - site characterisation
    - exposure pathways
    - exposed groups
    - projected future land use
- For long-lived and very long-lived radionuclides, the relative impact of individual pathways can change with time, so optimisation may be a more practical alternative than limitation
- Doing nothing is always a remediation option, provided it is acceptable to all stakeholders – including this option means that the methodology applies to sites where remediation may be required, and sites where the aim is assessment only
- Other factors
  - cost
  - acceptability (limitation or optimisation, ALARA) – all stakeholders