

# Financial Information for Asset Management: Carriageways & Footways

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HAMFIG



# Overview

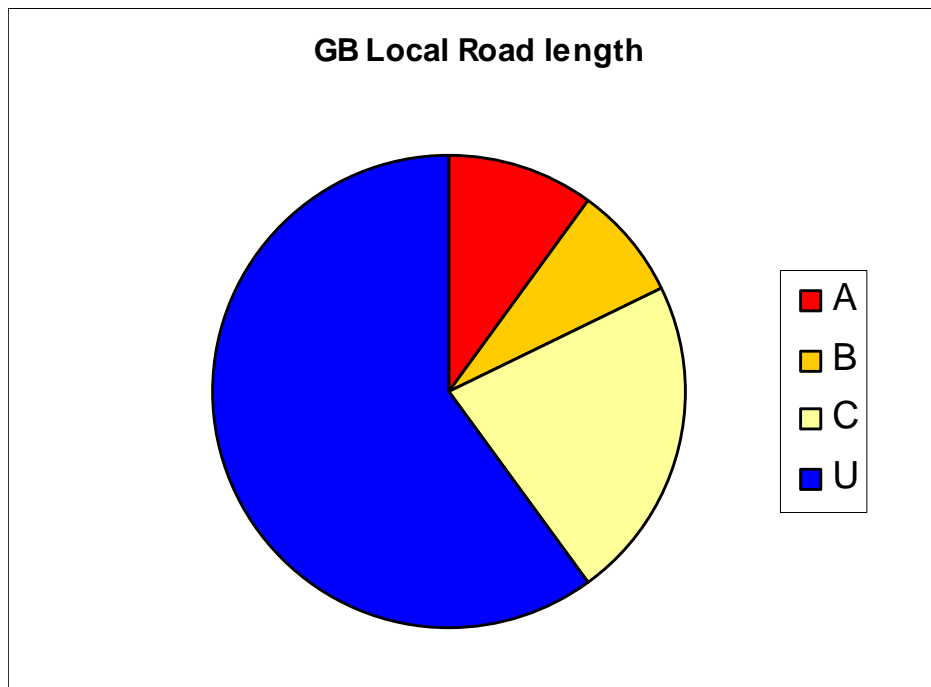
- The asset
- The approach
  - Depreciation
- Implementation
- The aims for the future

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# The Asset

- Contribution by carriageways and footways to highways GRC is around 75%-85%
- Around 60% of carriageways are unclassified



# The Asset

- Diverse



# The Asset

- Complex to model and predict
- Some factors which contribute
  - Traffic
  - Weather: rain, snow, frost etc
  - Aging
  - History: when & how (built and maintained)
- More understanding required
- Lack of data



# The Approach

- Principles
  - Follow the high level principles (e.g. component depreciation)
  - Use data available to all
  - Use modelling/processing techniques available to all
  - Use a consistent ‘framework’
  - Understand and state assumptions
  - Develop a foundation which can be refined and evolve as we learn more
  - Encourage good asset management



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# The Approach

Focus on accumulated depreciation:-

- The cost of restoring the full service potential of the asset.



# The Approach

- Original idea: Treatment based
- Determine the treatments required, and the cost of these
- Problems:
  - Underestimated depreciation?
  - Ignored 'zero green' (30% of network?)

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# The Approach

- Latest ideas: From OPUS working for Herts CC
  - Can bring their experience of valuing road assets in New Zealand for many years.
  - Have been working with Herts CC and so have an understanding of their network and data.

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# The Approach

- Work in progress ...
- Some details still to be developed
- BUT, accepted by HAMFIG subgroup (24 Jun 09) as the basis for calculating depreciation of carriageways
- Method could potentially be extended to footways, cycletracks & paved verges

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# The Approach

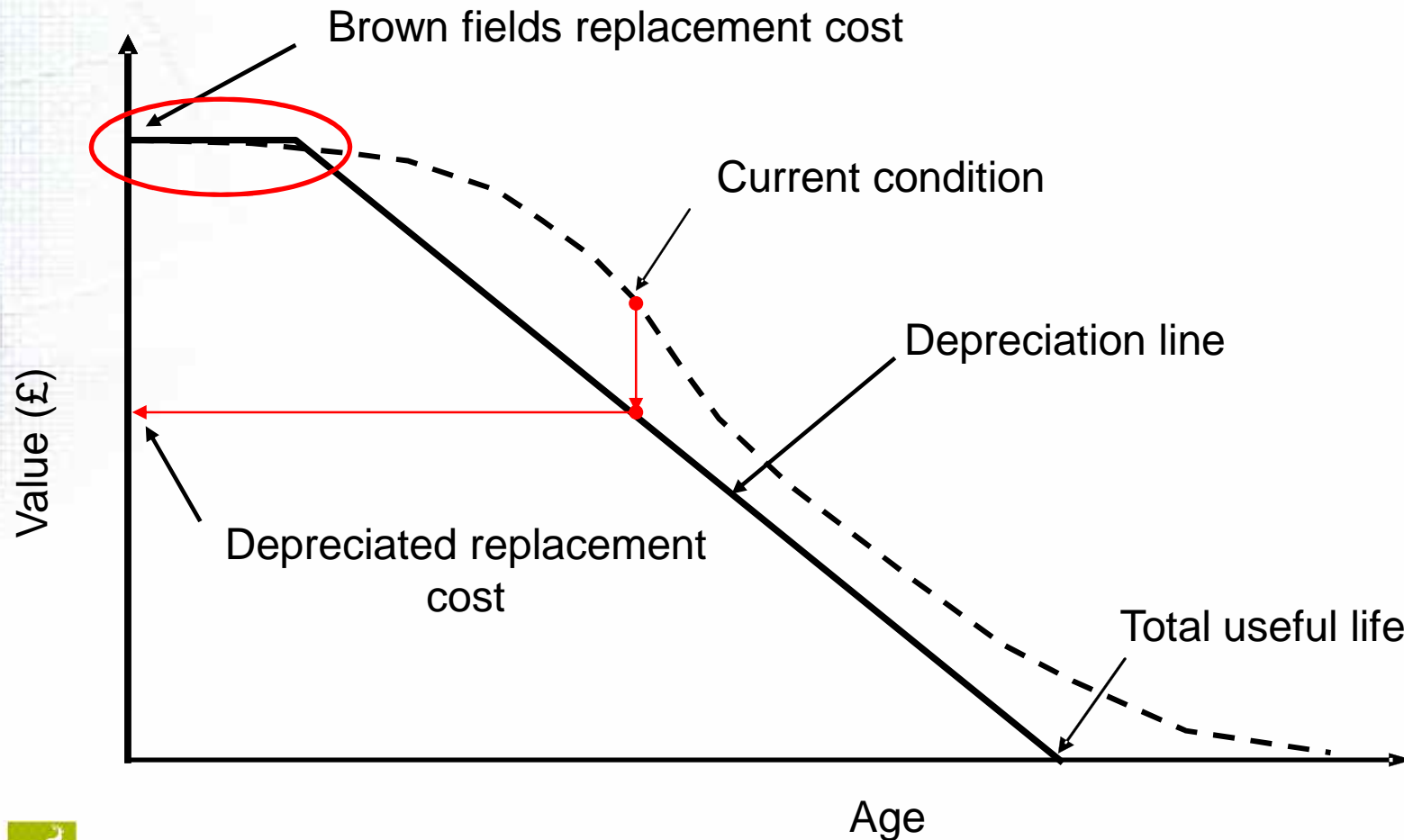
- Evaluating depreciation
  - Use Age? *But most authorities do not have reliable age data and are unlikely to have it in the near future.*
  - Use condition as a proxy; evaluate **depreciation** using **deterioration**.
  - Establish a condition curve for each type of road.
  - Use this curve together with the current condition for an individual road to give depreciation

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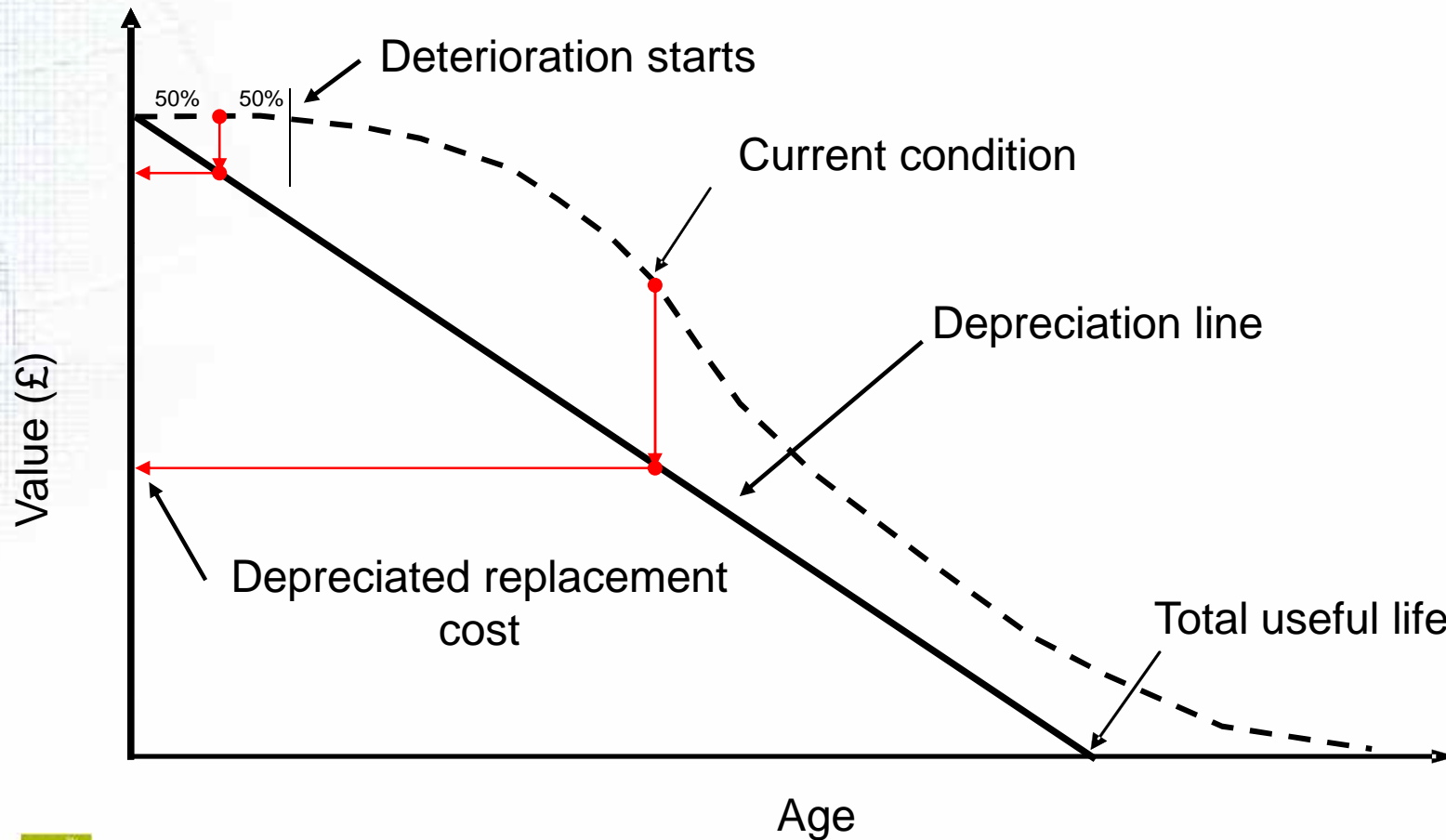


# A proposal





# A variation



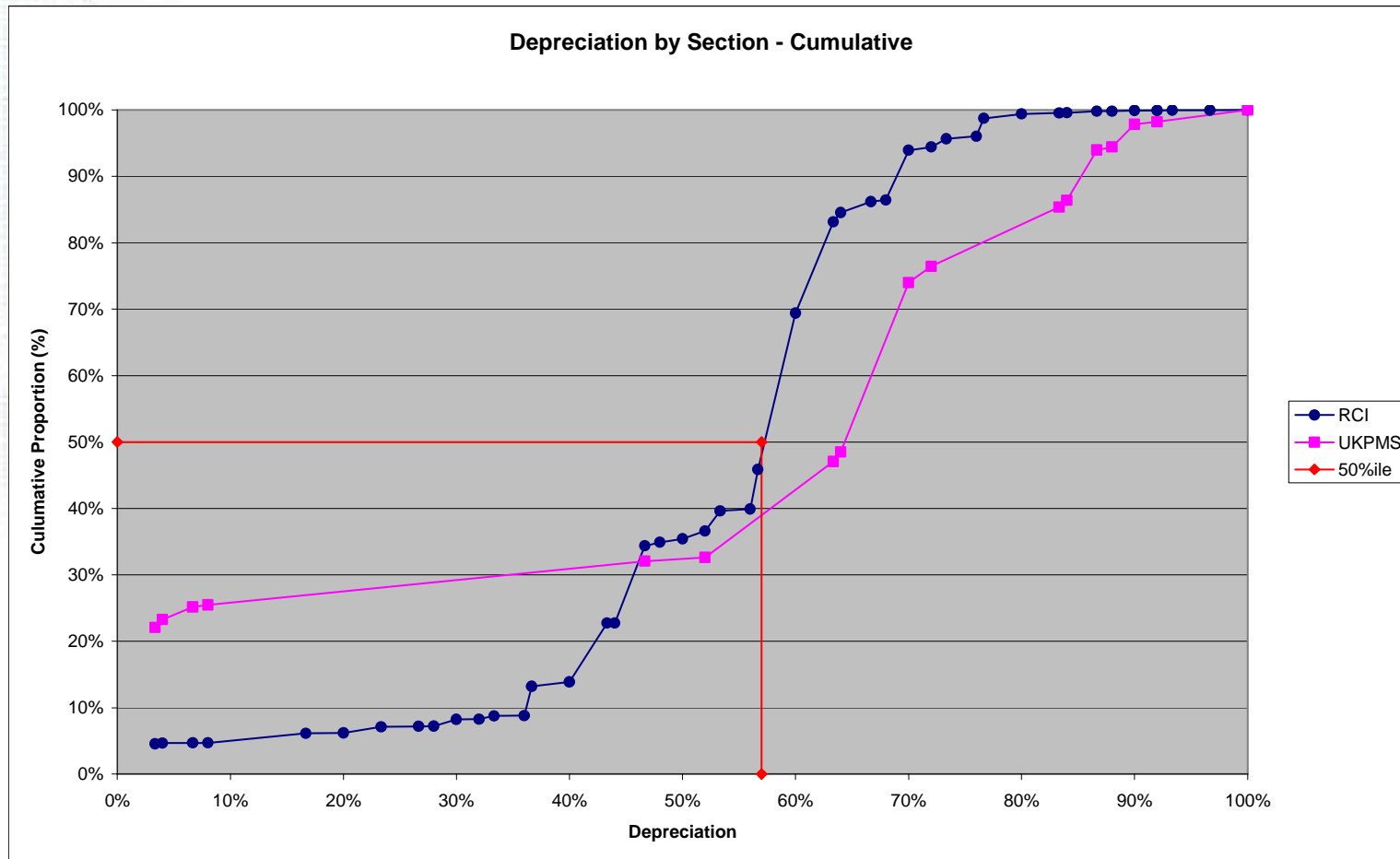


# Example matrix

Road Class	$T_{INI}$	$T_{100}$
1 (Motorway)	3	20
2 (Primary)	3	20
3a (Main)	5	20
3b (Second)	5	15
4a (Local 1)	5	25
4b (Local 2)	3	20



# HCC local roads depreciation



# The Approach

- What data is needed?
  - Approach is generic so can (in theory) be applied to any data
  - Requires a condition indicator & associated condition curves
  - Requires  $T_{INI}$  and  $T_{100}$  (defaults for these?)
  - Work in progress is currently focusing on CVI on unclassified roads, but also to be extended to SCANNER, DVI and CNS

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# The Approach

- What data is needed?
  - Condition data
- PLUS:
  - Replacement cost
  - Carriageway widths
  - Footway lengths and widths

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# The Approach

- What data do we have?
  - Classified network: SCANNER data collected for NI168 and NI169
  - Unclassified network:
    - CVI surveys (up to 2007/08)
    - Since then ...?
  - Footways:
    - DVI surveys on 1a, 1 and 2 (up to 2007/08)
    - New CNS survey from 2010/11

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# Implementation

- Via UKPMS
  - Rules & Parameters (RP9.01)
  - Annual Health Check
- UKPMS Annual Cycle

Apr – Jun	Identify requirements
Jul – Sep	Prepare tests (and parameters)
Oct – Dec	Conduct tests of systems
Jan – Mar	Implement with LAs

# The Aims

- What are the longer term aims?
- How far does the proposed approach meet these?

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# The Aims

What are the longer term aims?

- To encourage good asset management via:
  - Optimisation of the way in which the available budget is spent (getting maximum value)
  - Assessment of the impact of different budget scenarios – to give decision makers options and consequences
  - An understanding of the impact of financial decisions on the asset – both now and in the future
  - An understanding of the impact of engineering decisions on the asset – both now and in the future

# The Aims

How far does the proposed approach meet these aims?

- It has limitations
  - It is ‘broad brush’
  - It provides the ‘intrinsic’ depreciation rather than the actual depreciation based on a detailed life cycle plan
- BUT
  - It uses the available data and knowledge in a straightforward, robust way
  - It provides the first step towards a more detailed life cycle plan

# The Aim

- Life Cycle Planning
  - This requires ‘good’ data of all types (financial, condition, treatment records, construction, history)
  - It requires additional knowledge and the development of models to implement that knowledge
  - This is the aspiration but it is long-term; in the view of the HAMFIG CW subgroup, a ‘proper’ life cycle approach is an aim over the next decade rather than for the next 1-2 years

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Thank you

Any questions?

