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Tackling **R**oot causes **U**pstream of
Unhealthy **U**rban **D**evelopment

Quantifying the health impacts of alternative urban development scenarios using the HAUS tool

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Problem statement

- The environment around the home can have a significant impact on our health – for good or for ill.
- But how can policy makers understand and plan for healthier urban spaces?
- One problem is evidence: There are thousands of studies on environmental impacts on health. There are also many different ways to estimate the cost of these impacts.
- It is not quick or easy to access this evidence to quantify the health impact of a single intervention.

Contribution: What this model adds

We introduce an approach which can help policy makers identify pathways to health, understand how different groups are vulnerable to potential risks, and quantify the magnitude of potential health impacts related to changes to the environment in different scenarios.

How HAUS works

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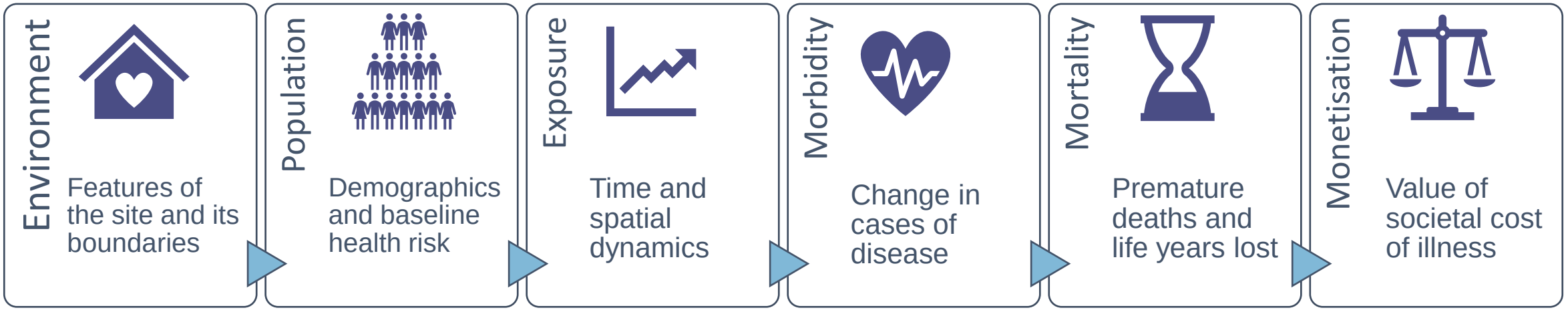

INPUTS

OUTPUTS

Evidence: Health impacts

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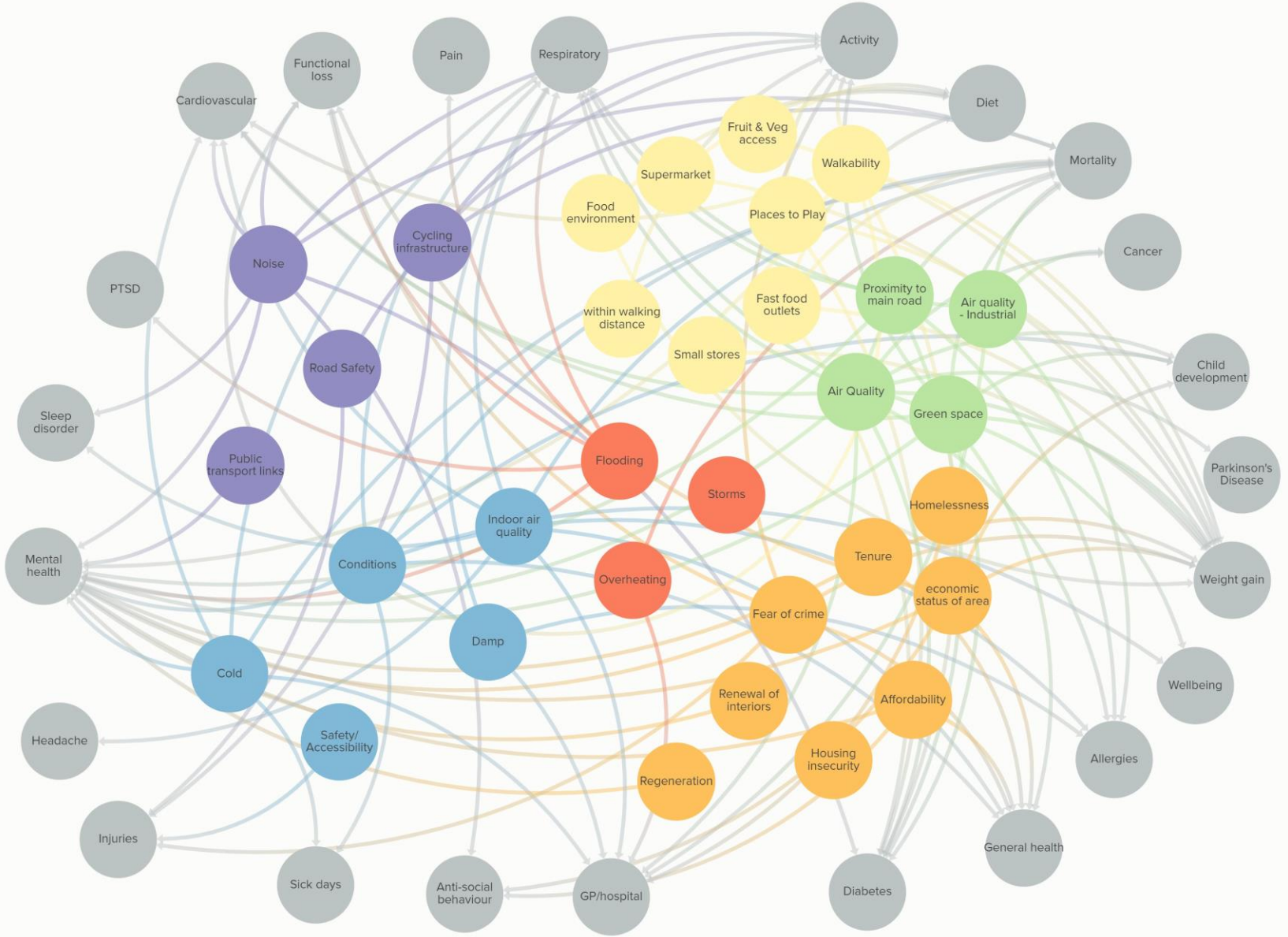

Legend

- Opposite
- Building design
- Transport
- Natural environment
- Community Infrastructure
- Socio-economics
- Climate change
- Health outcome

The societal cost of poor health

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HAUS Valuation Model: Example

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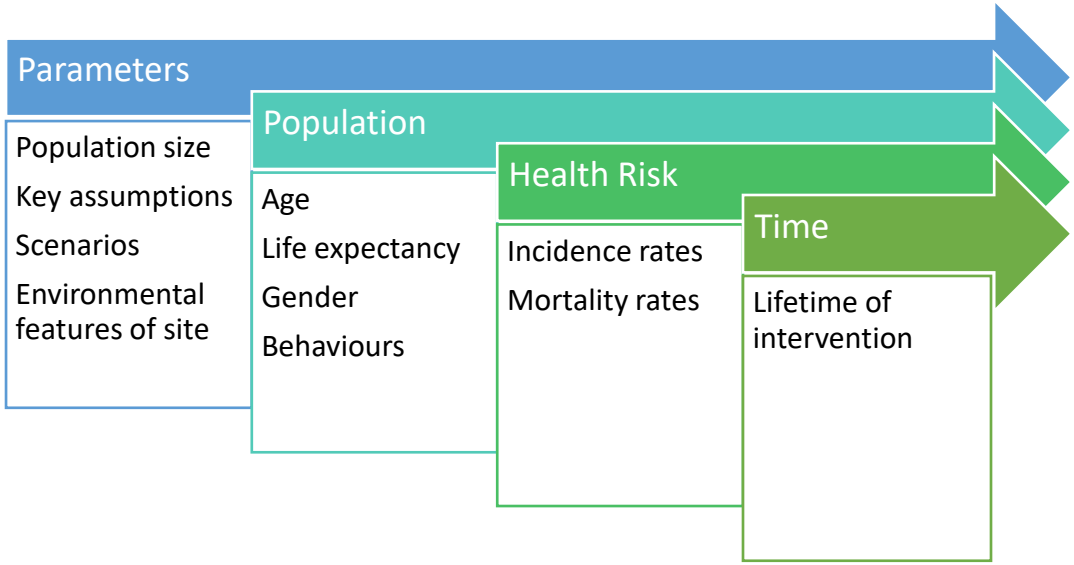
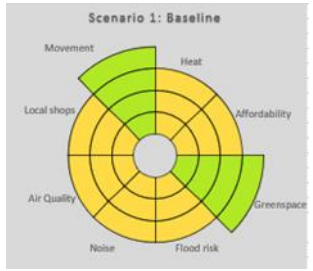
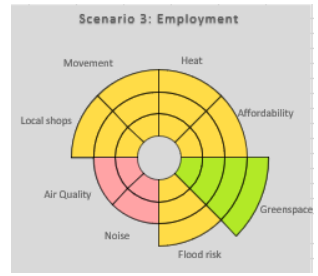
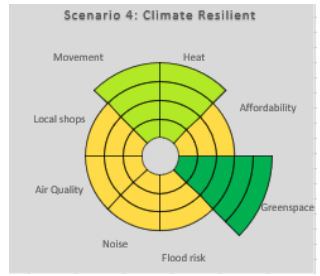
User inputs

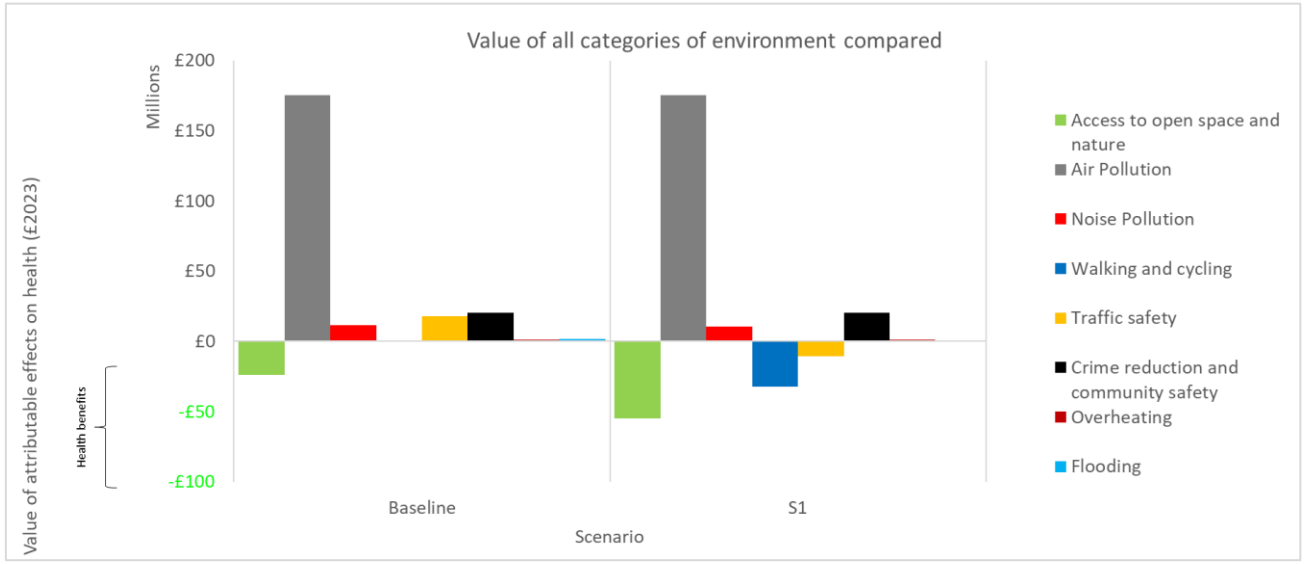


Outputs

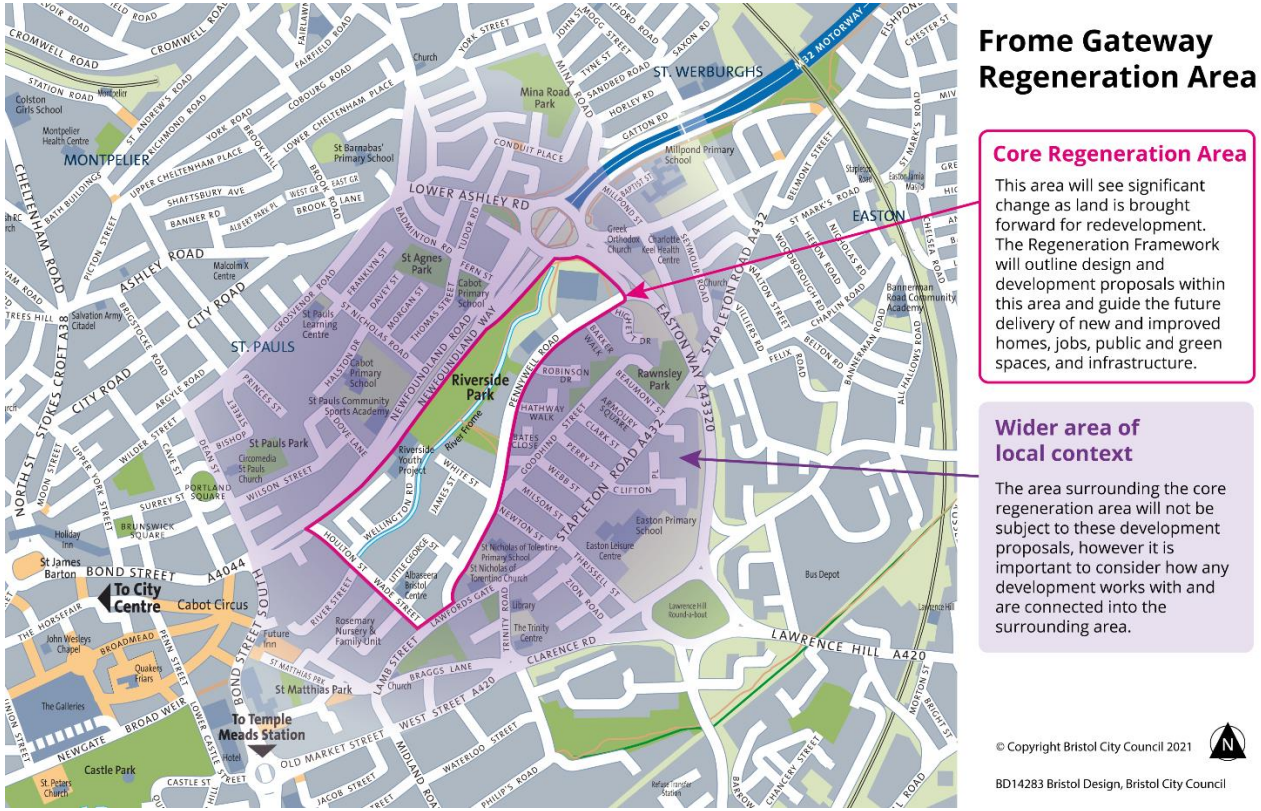








Application of HAUS: Bristol – Frome Gateway



Study provides input on the development of the Frome Gateway Strategic Regeneration Framework (SRF): detailed information on expected health outcomes related to possible land uses on the site

Development scenarios:

A: Baseline (Unmanaged Approach)

B: Minimum Policy Compliant: a new mixed-use neighbourhood

C: Strategic Approach: additional changes to public spaces – green space

D: Ideal: down-grade of main road; Maximum provision of affordable homes

Summary of estimated value of health outcomes over 25 years: 8,500 people within 300m of Frome Gateway Site

HUDU Category	Value of attributable health outcomes over project lifetime				
	A: Unmanaged Approach	B: Minimum Policy Compliant	C1: Strategic Approach	C2: Strategic Approach	D: Ideal
Housing design and affordability	0.00	0.00	0.00	0.00	0.00
Access to open space and nature	-30.49	-30.49	-59.67	-79.59	-181.91
Air quality, noise and neighbourhood amenity					
Air Pollution	135.59	135.59	135.59	135.59	17.80
Noise Pollution	12.23	12.23	11.00	11.00	0.00
Accessibility and active travel					
Walking and cycling	0.00	-37.91	-37.91	-37.91	-37.91
Traffic calming measures	13.26	13.26	-12.91	-12.91	-20.74
Crime reduction and community safety	21.28	21.17	20.73	20.73	20.28
Access to healthy food	-1.48	-1.48	-1.48	-1.48	-3.21
Climate change					
Overheating	1.25	1.25	1.25	1.25	1.12
Flooding	2.51	0.00	0.00	0.00	0.00
ADJUSTED TOTAL	**154.15**	**113.62**	**56.59**	**36.67**	**-204.57**
NET PRESENT VALUE	**101.27**	**73.88**	**36.42**	**21.64**	**-135.01**
NET CHANGE FROM BASELINE	-	**-40.53**	**-97.56**	**-117.48**	**-358.72**
NPV OF CHANGE	-	**-27.39**	**-64.86**	**-79.63**	**-236.29**

(Negative values (in green) indicate reductions in health costs, positive values (in red), indicate potential additional health costs)
Values in Million £2023, NPV (Net present value of health changes) adjusted for 3.5% discount rate

Who bears the cost of illness?

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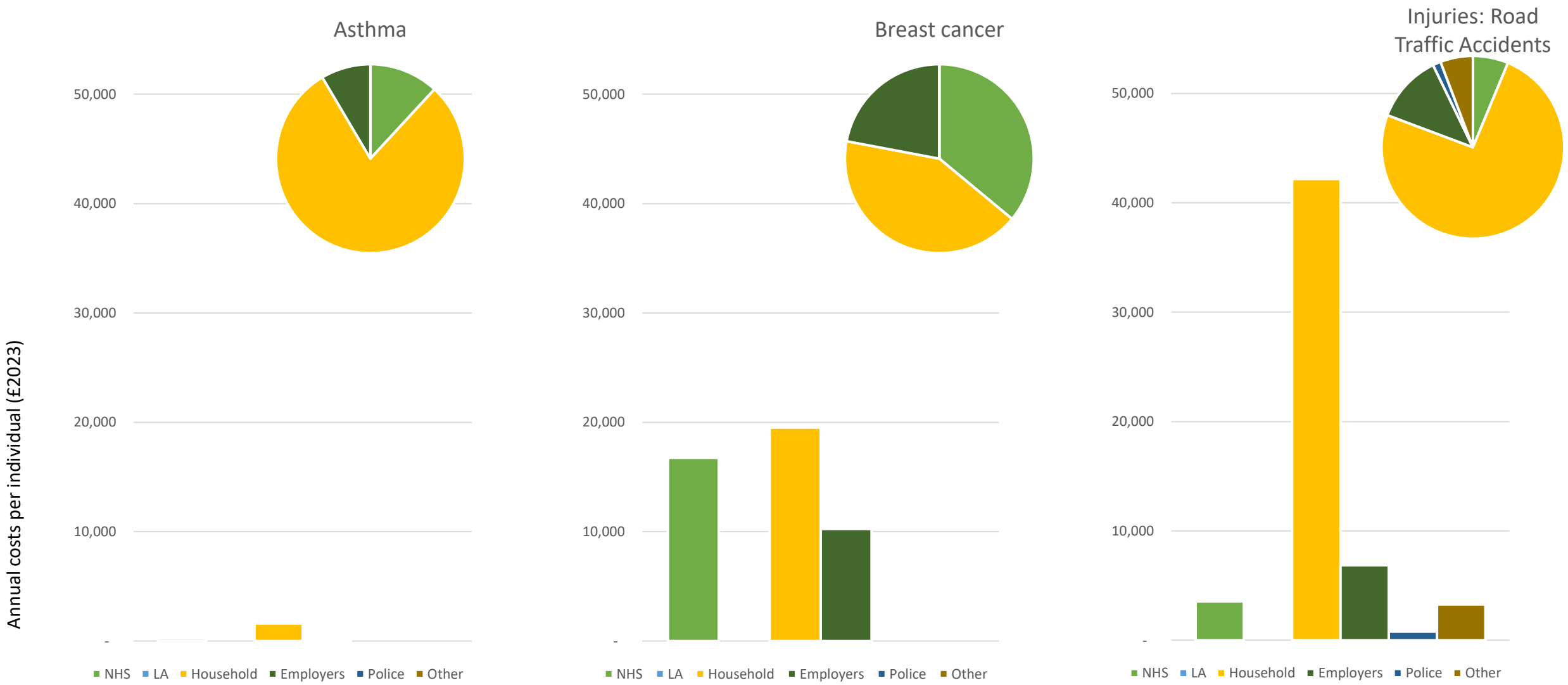

Composition of societal costs for different health outcomes

Concluding Comments

- Quantitative tool to inform economic appraisal of urban development plans constructed using existing evidence base (plus new survey work on mental health impacts)
- Currently informing local and national (UK DLUHC) decision-making
- Future work envisaged to:
  - Address evidence gaps in epidemiological and economic literature
  - Broaden range of applications by user and scale.