HIGHWAYS DOUGHNUT TOOLKIT

STEP BY STEP GUIDANCE

















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ABOUT

This guidance manual supports those aiming to apply the Highways Doughnut Toolkit to transform the highway maintenance sector by integrating the principles of Doughnut Economics. It has been developed as part of the ADEPT Live Labs 2: Decarbonising Local Roads in the UK which is a three-year, UK-wide £30 million programme funded by the Department for Transport that aims to decarbonise the local highway network. Within this innovation programme the toolkit is part of the Wessex Partnership's 'Net Zero Roads – Wessex Live Lab', and was developed by Circle Economy in collaboration with the highway authorities for Cornwall, Hampshire, and Somerset.

Through an iterative, co-development process, the toolkit was designed to translate the dimensions of Doughnut Economics into sector-specific Doughnut Themes tailored to highway maintenance. This represents a significant step toward aligning maintenance practices with both social needs and ecological limits. The toolkit has been trialled and refined within the three partner authorities, with the long-term goal of fully embedding its principles into both strategic planning and operational delivery. This hands-on testing ensured the toolkit's relevance, usability, and effectiveness, ultimately paving the way for broader implementation.

To improve usability, the manual is divided into two separate documents:

- 1. Background and Methodology: Introduces the Doughnut framework, explains its relevance to the highway sector, and outlines how it was adapted into the Highways Doughnut. It also presents the toolkit's structure, guiding principles, and intended impact.
- Step-by-step guidance: Provides the practical application process for using the toolkit in real-world settings. It includes clear, step-by-step instructions for applying the tools at both strategic and project levels, helping to embed ecological and social goals into everyday highway maintenance practice.

The two reports are designed to be both explanatory and practical, offering insights into the methodology used as well as step-by-step guidance on how to apply the toolkit at both strategic and project levels. While developed with Cornwall, Hampshire, and Somerset Highway Authorities, it is intended to be adaptable and useful to any highway authority or stakeholder involved in preparing, designing, or delivering net-zero highway activities.

If you have any questions about using the toolkit or would like support getting started, please reach out to Circle Economy at info@circle-economy.com.

ACKNOWLEDGEMENTS

The Highway Doughnut toolkit was developed as part of the Live Labs 2 programme, funded by the Department of Transport. Circle Economy extends its gratitude to the funders, partners, advisors, and contributors for their invaluable contributions to both the development of the toolkit and the preparation of this guidance document.

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The following individuals have contributed to the Toolkit Manual and associated deliverables in their individual capacities:

CIRCLE ECONOMY CORE TEAM

Kristin Strandberg, Sreeja Raghunathan, Kimmy Lahr, Zoé Héjja

CIRCLE ECONOMY CREATIVE TEAM

Nicolas Raspail, Isabel Lara Vega, Alexandru Grigoras

DOUGHNUT ECONOMICS ACTION LAB

Ilektra Kouloumpi

THE WESSEX PARTNERSHIP

Patrick Bingham (Hampshire County Council), David Shrimpton (Cornwall Council) and Neil Guild (Somerset Council)

COLAS

Sheila Jones, Ricky Beecroft













1. HIGHWAYS DOUGHNUT TOOLKIT

The Highways Doughnut is an adaptation of Doughnut Economics for the highway maintenance sector. It applies the Doughnut's core concept—meeting the needs of all people within the means of the planet—to decisions around road policies and strategies, planning, maintenance, and delivery. The model assesses the impacts of highway activities across the Doughnut boundaries:

- The ecological ceiling represents the planet's environmental limits. Crossing these boundaries risks destabilising Earth's life-support systems. In the context of highways, nine themes have been selected, such as climate, biodiversity, air quality, chemical pollution, waste, and material footprint.
- The social foundation defines the minimum standards needed to ensure a fair and just society. Falling below this threshold means people's essential needs are not being met. Nine themes have been defined for the highway sector, including, for example, accessibility, health, safety, employment, and equality.

The Highways Doughnut provides a lens to evaluate how maintenance activities either stay within or breach these boundaries. See **Appendix one** for the full list of themes.

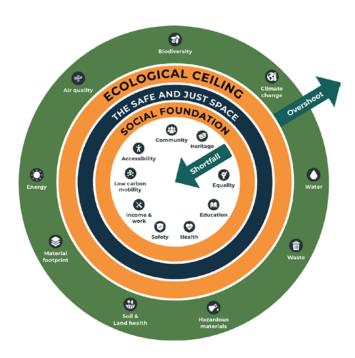


Figure one: Highways Doughnut

HIGHWAYS DOUGHNUT TOOLKIT STRUCTURE

The Highways Doughnut Toolkit operationalises this vision through two interrelated tools: the **Strategic Tool** and the **Project Tool**. These tools support decision-making at different levels within local authorities, ensuring that both long-term planning and day-to-day project delivery align with Doughnut principles.

The **Strategic Tool** is used for high-level policy and planning. It helps assess whether key strategic documents—such as the Local Transportation Plan or the Asset Management Plan—are aligned with the social and ecological goals of the Highways Doughnut. It uses guiding questions to prompt reflection on how the policies are translated into targets, monitoring frameworks, systematic processes and risk monitoring measures.

The **Project Tool** focuses on short-term, project-level decisions and translates the Doughnut Themes into operational subtheme questions. It combines qualitative and quantitative indicators—such as carbon reduction metrics or inclusion of accessibility features—and offers a tailored scoring framework for each sub-theme.

Each Doughnut theme is anchored by a clearly defined **Doughnut State**—an ideal future defining what it means to stay within the safe operating space of the Doughnut for that specific topic. These states then act as a compass for both strategic and project evaluations. See Appendix one for a full overview of all themes and associated states.

The Highways Doughnut Toolkit consists of the following parts:

- The Highways Doughnut Spreadsheet, divided into Strategic and Project tabs. This turns the toolkit into a functional scorecard and dashboard where each theme can be scored, justified, and linked to mitigation actions. The dashboard automatically generates a colour-coded Doughnut visual for each tool.
- The Highways Doughnut Workshop Canvases translate
 the spreadsheet into an interactive format for workshops.
 Lenses are printed and filled with post-its, allowing group
 co-creation and reflection before transferring results into
 the spreadsheet.
- An <u>introductory video</u> presenting the Highways Doughnut Toolkit and its application at both strategic and project levels.

While the tools can be used independently, they are most impactful when applied together. Strategic decisions shape project-level actions, and feedback from implementation can inform future strategy revisions, creating a continuous improvement loop that drives holistic and systemic change in highway services.

The next chapters will outline the recommended application process and practical steps for each tool.













2. HIGHWAYS DOUGHNUT STRATEGY TOOL

The Strategic Tool provides structured guidance to help shape and assess the highway maintenance service's key strategic policy and planning documents. By embedding Doughnut Economics principles into early-stage decision-making, its primary aim is to ensure that the long-term direction of the highway service aligns with both social needs and ecological boundaries of the sector.

Rather than offering prescriptive solutions, the tool poses guiding questions to support the evaluation of strategic documents and highlight areas for revision or improvement. It enables highway authorities to identify both strengths and gaps through a holistic lens that balances social and environmental priorities. Importantly, the tool fosters cross-team dialogue, encouraging a shared understanding of the current state and revealing opportunities for collaboration and more integrated working processes between departments, but also between local authorities and contractors.

WHEN SHOULD IT BE APPLIED?

The Strategic Tool should be applied when highway authorities seek to identify gaps and areas for improvement within existing strategic documents, resulting in adjusted policies or strategic documents. The following key strategic processes are ideal moments to apply the tool:

A. Mid-term review of existing strategic documents

Mid-term review cycles—such as in the third year of a five-year plan—offer a timely opportunity to assess progress, identify gaps, and make course corrections. Applying the tool during this phase helps ensure current plans remain aligned with the desired Doughnut State for each theme.

B. Policy revision cycles

When strategic documents are up for scheduled revision, typically every four to five years, the tool can be used to conduct a comprehensive evaluation of existing policies. This ensures that upcoming revisions are grounded in Doughnut principles and aligned with the ecological and social outcomes defined by the tool.

WHAT DOES IT EVALUATE?

The strategic tool is organised in two main sections:

- 1. Ambition and
- 2. Implementation

Ambition evaluates how ambitious the current or suggested targets set by the Highway authorities are, and whether there are effective monitoring frameworks in place to measure their progress towards reaching the Doughnut state.

The second section on **Implementation** focuses on assessing whether there are processes in place that align the operations with the targets and relevant risk mitigation measures. By assessing both parts, authorities can expose gaps between ambition and implementation, providing a constructive foundation for aligning strategic intention with practical action.

The scoring framework used ranges from one to five. A score of one indicates poor performance, while a score of five signifies full alignment with the defined Doughnut state. If a certain theme is considered not applicable, it can be scored a zero and be taken out of the evaluation. However, this should be clearly justified and not be common practice.

Figure two below shows an example of the evaluation framework for the Accessibility theme. The figure shows the **ideal Doughnut state** for the specific theme, followed by questions that assess the **Ambition** (covering targets and monitoring frameworks) and **Implementation** (focused on systematic implementation and risk mitigation).

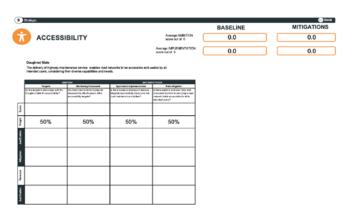


Figure two: Strategic tool example from the theme Accessibility.









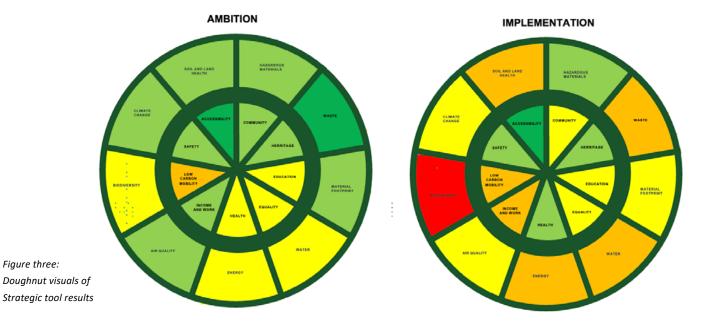




HOW TO FILL IN THE STRATEGIC SCORECARD

- Score: Begin by assigning a score from 1 to 5 for each question under the Ambition and Implementation columns.
- Weight: Adjust the weight (%) for each question if needed. Ensure that the total weight across the two questions in Ambition and Implementation adds up to 100%.
- Justification: Provide a clear explanation for each score, including any uncertainties or assumptions.

- Mitigation: If you identify mitigation measures that could improve the evaluation outcome, note them in the mitigation row.
- Adjusted Score: If mitigation measures are identified, you
 may revise your evaluation. For the adjusted evaluation,
 assign a new score to each question based on the identified
 mitigation measures.
- Adjusted Justification: Explain the rationale behind the new scores, again noting any assumptions or uncertainties.



CASE STUDY: EMBEDDING DOUGHNUT ECONOMICS IN PUBLIC CONTRACTS

A highway authority and its contractor used the Highways Doughnut Toolkit to assess how well a live highway maintenance contract aligned with the principles of Doughnut Economics. The focus was on evaluating whether the contract supported socially just and ecologically safe outcomes, and whether these ambitions were effectively translated into implementation practices.

Using the **Strategic Tool** component of the toolkit, the team evaluated two key areas:

1. Targets and monitoring:

Targets set out in the **Integrated Delivery Framework (IDF)** and the monitoring mechanisms outlined in the **Performance Schedule** were assessed to determine whether they supported progress toward the defined Doughnut States.

2. Implementation and risk mitigation:

Operational elements of the contract, such as **Task Orders**, **Service Information**, and **Risk Registers**, were reviewed to evaluate how the targets were effectively translated to systematic implementation measures in line with the Doughnut themes and whether key risks were clearly identified and mitigated.

The assessment offered valuable insight into the current contract's alignment with the social and ecological themes and states. It also served as an opportunity for the contractor and the authority to align more closely on how existing implementation processes support both contractual compliance, county strategies and broader Doughnut principles.













CASE STUDY: EVALUATING A WINTER SERVICE PLAN THROUGH A DOUGHNUT LENS

A highway authority used the Highways Doughnut Toolkit to assess how well its current Winter Service Plan aligned with the principles of Doughnut Economics. The focus was on evaluating whether the plan supported socially just and ecologically safe outcomes, and whether these ambitions were effectively embedded in strategic guidance and operational practice.

Using the **Strategic Tool**, the team evaluated two key areas:

1. Targets and monitoring:

The team assessed whether the strategic targets and monitoring mechanisms in the Winter Service Plan aligned with the defined Doughnut States, including aspects such as equitable access, climate resilience, and biodiversity impact.

2. Implementation and risk mitigation:

The contractor's operational strategies and risk frameworks associated with service delivery were reviewed to evaluate how the defined targets in the Winter Service Plan were implemented, and whether environmental and social risks—such as excessive salt use or underserved rural areas—were identified and addressed.

The assessment provided valuable insights into the current winter service plan's alignment with the holistic nature of the Highways Doughnut themes. It also served as an opportunity for internal and contractor teams to align on how the existing strategy has set out sufficiently ambitious targets for the respective Doughnut themes, and how these are translated into systematic implementation measures for the contractor.

HOW SHOULD IT BE APPLIED?

The diagram and sections on the following page summarise the suggested process to be followed when evaluating existing policies.













EVALUATE EXISTING STRATEGIC DOCUMENTS

Use the Highways Doughnut Strategic Tool to assess current strategies, policies and plans, identifying how well they align with the Doughnut themes. This process offers a suggested application approach but should be adapted to suit local contexts and priorities.



DEFINE THE SCOPE AND SET UP A 'DOUGHNUT TEAM'

Clearly **define the scope** and intended outcomes of the evaluation. Determine which strategic documents will be reviewed and what decisions the assessment will inform.

Form a multidisciplinary Doughnut team with expertise in strategic planning and operational delivery across all Doughnut themes.



COLLECT THE APPROPRIATE STRATEGIC DOCUMENTS

Gather **strategic documents** and supporting materials required for the evaluation, ensuring they reflect the full scope defined in Step one along with all Doughnut themes. The materials should cover all evaluation questions:

- Ambition
 (Targets + Monitoring frameworks)
- Implementation
 (Systematic implementation processes & Risk mitigation measures)



APPLY THE HIGHWAYS DOUGHNUT STRATEGIC TOOL

Use the Strategic Tool to assess each document across all Doughnut themes, evaluating the ambition (targets and monitoring) and implementation (systematic implementation measures and risk mitigation)

Provide justifications for each score to clarify the reasoning behind your evaluation. This ensures transparency and helps others understand the assessment.



IDENTIFY GAPS, SUMMARISE FINDINGS AND RE-EVALUATE BASED ON RECOMMENDATIONS

Use visualisations and scores to **identify weak points** in current strategies, such as
missing targets, poor monitoring, or lack
of implementation measures. **Summarise key gaps**, and **propose recommendations**to strengthen targets, monitoring,
implementation, and procurement practices.

Re-evaluate the strategy based on the proposed adjustments showing potential improvements.



VALIDATE THE ASSESSMENT AND SOCIALISE THE OUTCOMES

Conduct an internal sense check step to validate the assessments. This involves reviewing both the baseline and re-evaluated scores with a multidisciplinary team.

Run a cross-departmental workshop to **present findings** to a wide range of public and private stakeholders to gather input and build consensus.



MAKE INFORMED DECISION

Use the **Baseline** and **Re-evaluated Doughnut visuals** to support
evidence-based decisions on strategic
improvements.



INTEGRATE CHANGES INTO EXISTING POLICIES & ESTABLISH MONITORING PROCESS

Incorporate changes by working with relevant departments to integrate the recommendations into the upcoming policy review cycle.

Establish a process for regular re-evaluation using the toolkit to ensure continued alignment with the defined Doughnut States.















STEP ONE: DEFINE THE SCOPE AND SET UP A 'DOUGHNUT TEAM'

Clearly define the scope and intended outcomes of the evaluation. Determine which strategic documents will be reviewed and what decisions the assessment will inform.

Set up a Doughnut Team comprising multidisciplinary experts who can represent the key themes of the toolkit. This should include professionals from areas such as asset management, environmental planning, transport, social equity, and procurement, but also from the contractor's side. Each team member will be responsible for reviewing relevant aspects of the strategy based on their area of expertise.

Share the Doughnut toolkit in advance and clearly communicate the importance of involving representatives who can meaningfully contribute to each thematic area.

STEP TWO: COLLECT THE APPROPRIATE STRATEGIC DOCUMENTS

Gather all strategic documents and supporting materials required for the evaluation, ensuring they reflect the full scope defined in Step one. Make sure the collected materials offer insights relevant to all Doughnut themes, enabling a balanced assessment across both social and ecological dimensions.

The materials should provide sufficient information to address the **key evaluation questions**, including:

- Strategic targets and objectives
- Monitoring frameworks and performance indicators
- Systematic implementation processes
- Risk mitigation measures

For considerations of spatial impacts of the strategy, bring along Geographic Information System (GIS) layers, including relevant information such as the presence of environmentally sensitive areas or cultural heritage.

STEP THREE: APPLY THE HIGHWAYS DOUGHNUT STRATEGIC TOOL

Use the Strategic Tool to assess each relevant strategy across all Doughnut themes. The <u>introductory video</u> can be shown to set the scene of the session. The assessment involves evaluating four key elements for each theme:

- 1. **Assess the targets:** Score how well the strategic targets align with the desired Doughnut State for each ecological and social theme.
- Assess the monitoring frameworks: Evaluate the
 presence and quality of monitoring systems that
 track progress toward the defined targets. Consider
 whether data is collected regularly, reported
 transparently, and used to inform decisions.
- 3. Assess the implementation: Review implementation plans and enabling documents—such as procurement strategies, delivery models, or internal guidelines—to assess whether policies are systematically applied in practice.
- 4. **Assess risk mitigation:** Examine whether potential risks to implementation have been identified and sufficiently addressed.

Provide justifications for each score to clarify the reasoning behind your evaluation. This ensures transparency and helps others understand the assessment outcomes.

Note: While all elements should be reviewed, some Doughnut themes may not be applicable to a given strategy. In such cases, mark the item as not applicable by scoring it a zero and clearly explain why. Adjust the weight of the non-applicable question to 0% and redistribute its weight proportionally across the remaining applicable questions so that the total equals 100%.













STEP FOUR: IDENTIFY GAPS, SUMMARISE FINDINGS AND RE-EVALUATE BASED ON RECOMMENDATIONS

Identify Gaps by using the resulting visualisations and scoring outcomes to pinpoint where current strategies fall short. Look for missing or weak elements such as unclear or absent targets, insufficient monitoring frameworks, or a lack of systematic implementation procedures and procurement practices across highway activities.

Summarise findings of the evaluation results, highlighting the overall scoring and key gaps identified for each Doughnut theme. Clearly indicate which areas require the most attention or improvement.

Propose recommendations by developing a longlist of potential strategic-level improvements. These may include introducing new strategies or plans, setting more ambitious targets, enhancing monitoring approaches, or strengthening implementation and procurement processes. These recommendations should aim to better align the strategic direction with the desired Doughnut State across all themes.

Re-evaluate the strategy based on the proposed recommendations showing the potentials of the suggested improvements. aningfully contribute to each thematic area.

STEP FIVE: VALIDATE THE ASSESSMENT AND SOCIALISE THE OUTCOMES

Conduct an internal sense check step to validate the assessments. This involves reviewing both the baseline and re-evaluated scores with an authority team of stakeholders, including environmental experts, engineers, and social values experts, to validate the results, ensure accuracy and completeness.

Run a cross-departmental workshop to present findings to a wide range of stakeholders, including policymakers, asset managers, as well as community and private sector representatives, to gather their input and build consensus on necessary changes.

STEP SIX: MAKE INFORMED DECISION

Use both the **Baseline Doughnut** and the **Re-evaluated Doughnut** visuals as your foundation to support clear, evidence-based decisions about which strategic improvements to implement.

These visuals allow you to:

- Review where the Re-evaluated Doughnut shows progress or persistent gaps compared to the Baseline.
- Use the comparative insights to prioritise interventions with the highest potential for impact.
- Focus on closing gaps in underperforming themes and scaling successful strategies.
- Ensure improvements in one area (e.g., efficiency or resilience) do not come at the cost of another (e.g., social equity or ecological integrity).
- Use the Doughnut visuals to align decisions
 with wider organisational goals—such as netzero commitments, inclusive service delivery, or
 biodiversity targets.
- Share visual outputs with senior leadership, crossdepartmental teams, or community stakeholders to build understanding and buy-in.

STEP SEVEN: INTEGRATE CHANGES INTO EXISTING POLICIES & ESTABLISH MONITORING PROCESS

Incorporate changes by working with relevant departments to integrate the recommendations into the upcoming policy review cycle.

Establish a process for regular re-evaluation using the toolkit to ensure continued alignment with the defined Doughnut States.













3. HIGHWAYS DOUGHNUT PROJECT TOOL

The **Project Tool** helps highway authorities put Doughnut Economics principles into practice at the project level, ensuring that ecological and social considerations are embedded throughout the design, implementation, and monitoring of maintenance activities. It offers asset and project managers a structured process to assess and balance the potential impacts of a project or programme, turning strategic ambitions into concrete, on-the-ground actions.

By encouraging teams to step back and reflect on 'business as usual', the tool opens space for new thinking and alternative approaches. It sparks meaningful dialogue and peer learning, bringing generalists and specialists into shared conversation and strengthening cross-functional collaboration. By gathering all relevant stakeholders in one room, the tool not only highlights existing good practices but also uncovers gaps that may otherwise go unnoticed. Through this exercise, it helps clarify what needs to be done to improve outcomes aligned with social and ecological objectives.

Above all, the Project Tool promotes a holistic perspective, ensuring that environmental and social factors are considered together. In doing so, it supports more balanced, informed, and systemic decisions within highway maintenance activities.

WHEN SHOULD IT BE APPLIED?

The Highway Doughnut Project Tool is used to assess the implementation of strategy, policy and guidance at a project level for the following maintenance activities:

- Planned maintenance schemes that are <u>pre-scheduled</u>
 (usually at an annual cycle) and can include larger-scale
 activities such as carriageway and footway resurfacing,
 drainage improvements, network safety works, and other
 capital works.
- Reactive maintenance is often small-scale activities
 organised at a programme level that are handled on an
 ad hoc basis as issues arise, including, for example, pothole
 repair and replacement of damaged signs. Reactive repairs
 are primarily identified through inspections or public
 reports.
- Cyclic work, including recurring routine activities organised at a programme level and scheduled <u>at an agreed cycle</u>.
 Cyclic works include, for example, nature management such as grass and hedge cutting, but also gully cleansing and street cleaning.

WHAT DOES IT EVALUATE?

The project tool uses a tailored scoring framework to evaluate how well a maintenance project or activities fulfil the goals outlined in each Doughnut state (see Appendix one). Every Doughnut theme within the tool is broken down into topic-specific questions that address different aspects relevant to each theme. Depending on the theme, the number of questions can vary, from one to four. Each question is accompanied by a tailored scoring framework, explaining the level of ambition required to rate the project's fulfilment of the sub-theme question on a scale of one to five, where one signifies no alignment, three being neutral and five full alignment with the Doughnut State.

Depending on the project's scope, not all questions may be relevant or essential for project-level evaluation. For example, cyclic maintenance activities such as pothole repair may not necessitate a detailed evaluation of biodiversity impacts. The decision regarding which themes are relevant should be based on the project's scope and objectives, which must be clearly defined before the assessment. However, themes should be removed from the scope of the project only with clear justification, as the overall intention is to keep the assessment as holistic as possible to maintain the integrity of the Doughnut approach.

Additionally, the tool is intended to be used in conjunction with a carbon accounting tool. This tool should estimate both direct and indirect carbon emissions and compare them against the carbon budget. This information will then be integrated into the climate change theme.

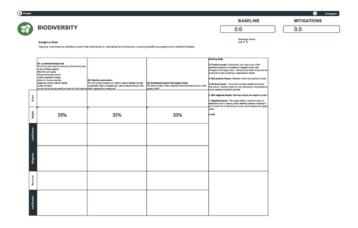


Figure four: Project tool example from the theme Biodiversity.













HOW TO FILL IN THE PROJECT

- Score: Begin by assigning a score from 1 to 5 for each question. A score of 5 indicates full alignment with the Doughnut State, 3 indicates a neutral impact, and 1 indicates no alignment. If a question is not applicable to the project, assign a score of 0 which will exclude it from the overall assessment. Please refer to the tailored scoring framework for each question to guide your score selection.
- Weight: Adjust the weight (%) for each question if needed. Ensure that the total weight across all questions within the category equals 100%.
- Justification: Provide a clear explanation for each score, including any key assumptions, uncertainties, or relevant context that influenced your judgement.
- Mitigation: If you identify potential mitigation measures that could improve the outcome, describe them in the mitigation row.
- Adjusted Score: If mitigation measures are identified, you
 may revise your evaluation. Assign a new score for each
 question based on the identified mitigation measures.
- Adjusted Justification: Explain the reasoning behind the new scores, including any updated assumptions or uncertainties.

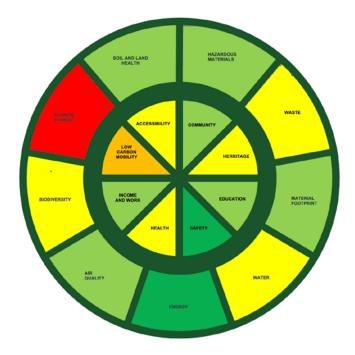


Figure five: Doughnut visual of Project level results

CASE STUDY: A DOUGHNUT-BASED EVALUATION OF A RESURFACING PROJECT

A multidisciplinary team from a highway authority and their contractor used the Highways Doughnut Toolkit to evaluate a highway resurfacing scheme. The goal was to assess how the project performs against key social and ecological considerations, using the Project Tool to support a more holistic review of its design and delivery.

The evaluation was conducted through a structured workshop, where participants from technical, environmental, and social backgrounds assessed the project's alignment with the Doughnut States across multiple impact themes. The process was supported by guided facilitation, collaborative scoring, and group reflections.

Objectives of the evaluation:

- Understanding the project's strengths and weaknesses across the Doughnut's social and ecological themes
- Bringing diverse expertise into a shared conversation about project outcomes
- Identifying opportunities for improving future decision-making processes

The evaluation helped facilitate a cross-disciplinary dialogue and encouraged participants to consider a broader range of social, environmental, and economic impacts than typically addressed in standard project reviews. It enabled a structured, reflective discussion that surfaced both effective practices already in place but also identified opportunities for improvement. The toolkit provided a useful framework for assessing project outcomes in a more integrated and balanced way, supporting more informed and collaborative decision-making.













CASE STUDY: EVALUATING REACTIVE WINTER SERVICES WITH THE DOUGHNUT TOOL

A highway authority and their contractor used the Highways Doughnut Project Tool to evaluate their reactive winter service programme. The aim was to assess how these services align with the social and ecological considerations of the Highways Doughnut.

The evaluation took place through a structured workshop involving operational, environmental, and social representatives from both the county council and the contractor. Participants collaboratively assessed the service's alignment with the Doughnut States across relevant social and ecological themes. The session included self-guided facilitation in each group, collaborative scoring, and group reflection.

Objectives of the evaluation:

- Assessing how reactive interventions align with the Doughnut's social and ecological themes
- Evaluating how the Winter Service Plan is translated into day-to-day operational practice
- Facilitating shared reflection between the council and contractor on real-time decision-making
- Identifying practical improvements to strengthen social outcomes and reduce ecological impacts in future service delivery

The evaluation prompted critical reflection on issues such as route prioritisation, salt usage, and access to essential services during severe weather. It fostered cross-disciplinary dialogue and revealed both effective practices currently in place as well as areas for improvement, such as exploring route-based scheduling and assessing the winter services impact on cultural heritage along the roads. The toolkit provided a valuable framework for integrating ecological and social dimensions into reactive operations and supported more holistic and informed decisions moving forward.

HOW SHOULD IT BE APPLIED?

The project tool can be used to assess two different types of projects: a) planned maintenance activities, and b) cyclic and reactive maintenance.

OPTION A: PLANNED MAINTENANCE ACTIVITIES

The diagram and sections on the following page summarise the suggested process to be followed when evaluating planned maintenance activities.













PLANNED MAINTENANCE PROJECTS

Use the Highways Doughnut Project Tool to evaluate planned maintenance projects, ensuring alignment with Doughnut principles. While these steps offer a suggested application approach, they should be customised to fit within existing operational processes. The white box represents the key moments to apply the tool.



PRIORITISED LIST OF PLANNED ACTIVITIES

Choose priority highway tasks to be assessed based on road conditions, safety, and data. Keep the list flexible and adjust throughout the year as priorities shift.

2

DEVELOP DESIGN GUIDED BY THE HIGHWAYS DOUGHNUT PROJECT TOOL

- Design with Doughnut principles
 Embed ecological and social goals from the
- Select appropriate materials
 Use local, low-carbon, recyclable, repurposed, and socially responsible materials.
- Estimate costs & calculate emissions

 Account for lifecycle costs and calculate both direct and indirect carbon impacts.

Run Doughnut Project Tool

A multidisciplinary team scores project performance across the Doughnut themes. Use workshops for large projects and spreadsheets for smaller ones.

 Validate the score, refine design and reevaluate project

Review scores with experts and adjust the design as needed. Re-evaluate the assessment to reflect the suggested changes.

• Early contractor involvement

Align with contractor on the final design and decisions to support smooth project delivery.

3

CREATE A PROJECT SCHEDULE

Develop a detailed project schedule that ensures effective coordination of all tasks and activities. As part of this process, verify the prioritised list of activities from Step one based on the Doughnut assessment outcomes to ensure alignment between priorities and ecological and social outcomes.

4

DECISION ON DESIGN AND COMPLETE WORKS ORDERING

Make final design decisions using both the Baseline Doughnut and the Re-evaluated Doughnut to guide the decision-making process. Approve project scheduling based on the assessment outcomes.

Update all work orders and contracts to reflect the agreed ecological and social impact requirements, ensuring contractors are equipped to deliver on Doughnut-aligned outcomes.

5

CONSTRUCTION PERIOD AND WORKS FEEDBACK LOOP

During the construction phase, the project is carried out in line with the approved design and delivery plan.

Establish a contractor feedback loop for larger-scale projects to ensure progress checks against Doughnut goals and opportunities to iterate on delivery in real time.

6

CONDUCT POST-CONSTRUCTION MONITORING

After construction is completed, conduct a **final inspection** to verify that the project adheres to intended outcomes as defined by the Doughnut evaluation. Use the **insights gained to improve future projects**, ensuring they better align with the Doughnut's ecological and social boundaries.















STEP ONE: PRIORITISED LIST OF PLANNED ACTIVITIES

Select key highway maintenance tasks to be assessed for the upcoming year based on key factors such as road conditions, traffic requirements, safety concerns, and available data. This initial list should not be fixed, but evolve over time in response to shifting priorities, political considerations, cost constraints, and stakeholder input. As the year progresses, tasks are reprioritised and refined, with the final selections submitted for approval to ensure alignment with the Doughnut Assessment, budget limitations, delivery timelines, and operational needs.

STEP 2: DESIGN PHASE

2.1. DEVELOP DESIGN GUIDED BY THE PRINCIPLES OF DOUGHNUT ECONOMICS

Incorporate Doughnut Principles into design by integrating the Doughnut state to guide the design phase and ensure integration of all impact categories' ideal state from the project outset.

2.2. SELECT APPROPRIATE MATERIALS

Incorporate Doughnut Principles into the selection of materials: Choose materials that meet circular and regenerative criteria. For instance, prioritise locally sourced materials that are low-carbon, recyclable, repurposed or renewable. This selection process must ensure that both social goals (like fair working conditions) and environmental goals (such as low repurposed materials) are met.

Coordinate across activities to maximise material efficiency: Explore the opportunity to align and coordinate across maintenance activities in order to maximise material efficiency.

2.3. ESTIMATE COSTS AND CALCULATE CARBON EMISSIONS

Estimate project costs by factoring in long-term benefits. While sustainable materials or methods may have higher initial costs, their durability and lower maintenance needs may result in lower lifecycle costs.

Calculate the project's carbon emissions through a Carbon Budgeting Tool and compare them against the highway authorities' carbon limits. This step should assess both direct emissions (such as from construction equipment) and indirect emissions (from material production and transport, for example).

2.4. RUN THE HIGHWAYS DOUGHNUT TOOLKIT ASSESSMENT

Set up a Doughnut Team of experts to lead the assessment process. This Doughnut Team should include professionals with expertise in areas such as asset management, biodiversity, materials, and social equity, and may also involve representatives from the contractor's side. Each member is responsible for reviewing and contributing insights related to their specific area of expertise.

Use the Highways Doughnut Project tool to assess and score the project's design, operations, and material choices. The tool will score the project's fulfilment of each theme's Doughnut state, offering a comprehensive view of its environmental, planetary and social performance. The introductory video can be shown to present the use of the toolkit.

For larger-scale projects, a workshop setting is recommended in order to bring together a range of expertise to contribute insights, identify risks, and explore potential improvements or mitigation measures. For smaller-scale projects, the spreadsheet can be completed individually by relevant experts, followed by a shorter meeting to discuss the results and agree on any necessary adjustments.

Note: While all elements should be reviewed, some Doughnut themes may not be applicable to a given strategy. In such cases, mark the item as not applicable by scoring it a zero and clearly explain why. Adjust the weight of the non-applicable question to 0% and redistribute its weight proportionally across the remaining applicable questions so that the total equals 100%.

2.5. VALIDATE THE OUTCOMES AND CONFIRM THE DETAILED DESIGN

Validation process: Conduct an internal sense check step to validate the toolkit scoring. This involves reviewing the initial scores with an authority team of stakeholders, including environmental experts, engineers, and social values experts, to validate the results, ensure accuracy and completeness.













Decision on detailed design: Based on the validation, decide whether the project design should adjust the feasibility design to better achieve the desired state for each impact area as described by the Doughnut state. If the assessment reveals significant gaps, proceed with adjusting the detailed design to address these issues.

Re-evaluate project: After making any necessary changes, update the Doughnut assessment in the re-evaluation boxes within the spreadsheet to ensure the revised design meets the desired Doughnut state. By re-evaluating the design, the Doughnut visual will be adjusted to reflect the new scores. This iterative process helps refine the project to maximise ecological and social benefits.

The two Doughnuts, the original and adjusted designs, can support the decision-making process by clearly stating the expected outcome from the two design proposals.

2.6. EARLY CONTRACTOR INVOLVEMENT

Engage the contractor to review and confirm the detailed design and Doughnut Assessment. This step ensures early alignment on key decisions related to operations, materials, and design, and supports smooth delivery of the project.

STEP THREE: CREATE A PROJECT SCHEDULE

After the design has been validated, develop a detailed project schedule that ensures effective coordination of all tasks and activities. As part of this process, verify the prioritised list of activities from Step one based on the Doughnut assessment outcomes to ensure alignment between priorities and ecological and social outcomes.

STEP FOUR: DECISION ON DESIGN AND WORKS ORDERING

Use both the **Baseline Doughnut** and the **Re-evaluated Doughnut** visuals to make a clear, evidence-based decision on the final project design.

Decision on preferred design and project orders:

Compare the two Doughnut visuals to assess which option better supports ecological and social outcomes. Consider trade-offs, improvements, and remaining gaps across all themes. Approve order of projects in project scheduling (step three) based on the Doughnut outcomes.

Update work orders and contracts: Reflect the final design decisions in updated work orders, contracts, and delivery documents. Ensure all ecological and social impact requirements are clearly specified and embedded in delivery expectations.

STEP FIVE: CONSTRUCTION PERIOD AND WORKS FEEDBACK LOOP

During the construction phase, the project is carried out in line with the approved design and delivery plan.

A contractor feedback loop should be established for larger-scale projects to ensure continuous alignment with Doughnut principles. This includes regular communication between contractors, site teams, and project managers, with monthly progress meetings serving as key checkpoints.

These meetings provide a valuable opportunity to assess progress, identify emerging issues, and make course corrections as needed, while re-evaluating them using the Highways Doughnut Project Tool. This ongoing reflection ensures that construction practices can be adapted in real time to maximise positive outcomes and mitigate potential risks.













STEP SIX: POST-CONSTRUCTION AND MONITORING

After construction is completed, conduct a **final inspection** to verify that the project adheres to intended outcomes as defined by the Doughnut evaluation. Use the insights gained to improve future projects, ensuring they better align with the Doughnut's ecological and social boundaries.

OPTION B: CYCLIC AND REACTIVE MAINTENANCE PROGRAMMES

The table and sections on the following page summarise the suggested process to be followed when evaluating cyclic and reactive maintenance activities.













CYCLIC & REACTIVE MAINTENANCE PROJECTS

Use the Highways Doughnut Project Tool to review and assess routine and reactive maintenance activities. The process is a suggested approach to identify improvements, but each step should be adjusted according to the local workflow and processes.

1

REVIEW OF PREVIOUS CYCLES AND SET UP PROGRAMME

Gather and analyse data from past maintenance tasks (e.g. pothole repairs, tree removal) to assess costs, materials, and effectiveness.

Use this to **plan next year's maintenance programme**, aligning it with budget limits and operational priorities.

2

EVALUATE PROGRAMME THROUGH THE HIGHWAY DOUGHNUT PROJECT TOOL

Assemble a multidisciplinary Doughnut Team, including staff from environment, asset management and social value.

Use the Highways Doughnut Project Tool to assess the reactive maintenance activities within the programme across social and ecological themes.

3

SUMMARISE KEY INSIGHTS, IDENTIFY AREAS OF IMPROVEMENTS AND RE-EVALUATE

Summarise key insights from evaluation to identify where the programme falls short of Doughnut outcomes. **Recommend areas for improvements** to maximise social and ecological impact.

Review the maintenance programme alongside the available budget as initially defined in Step one.

Re-score and generate a re-evaluated Doughnut by using the tool again with proposed changes to see their potential impact.

4

VALIDATE THE OUTCOMES

Conduct an internal sense check step to validate the assessment. This involves reviewing both the baseline and re-evaluated scores with an authority team of multidisciplinary experts to validate the results, ensure accuracy and completeness.

Engage the contractor to review and confirm the reactive programme and Doughnut Assessments, ensuring the programme reflects practical realities.

5

MAKE INFORMED DECISION, ALIGN THE ORDER OF WORKS AND TRACK PROGRESS

Use the Doughnut visuals to make **informed decisions** based on their social and ecological impact. **Reflect these insights in the final programme and contractor requirements**, ensuring alignment with operational needs.

Monitor delivery throughout the year and capture results to support continuous improvement in the next cycle.















STEP ONE: REVIEW OF PREVIOUS CYCLE AND SET UP PROGRAMME

Gather and analyse data from the previous cycle of cyclical and reactive maintenance activities, such as gully cleansing, grass cutting, pothole repairs, and emergency tree removal. Include information on costs, materials used, and the effectiveness of completed works. Verify that the data is current, complete, and accurate, updating where necessary to ensure a reliable basis for decision-making.

Use these insights to define the activities for the upcoming year's maintenance programme. Align the proposed activities with the anticipated budget to ensure the programme fits within allocated funds and reflects both operational priorities and financial constraints.

STEP TWO: EVALUATE PROGRAMME THROUGH THE HIGHWAY DOUGHNUT PROJECT TOOL

Assemble a Doughnut Team of multidisciplinary backgrounds including staff from environment, engineering, social value, and contractor services. This group will lead the Doughnut evaluation.

Apply the Highways Doughnut Project Tool to evaluate and score the longlist of these planned activities. Drawing on insights from previous data, assess each activity across the full range of social and ecological impact categories defined in the Doughnut tool. This ensures that the planned activities are aligned with environmental and social goals, while identifying potential areas for improvement.

Note: While all elements should be reviewed, some Doughnut themes may not be applicable to a given strategy. In such cases, mark the item as not applicable by scoring it a zero and clearly explain why. Adjust the weight of the non-applicable question to 0% and redistribute its weight proportionally across the remaining applicable questions so that the total equals 100%.

STEP THREE: SUMMARISE KEY INSIGHTS, IDENTIFY AREAS OF IMPROVEMENT AND RE-EVALUATE

Summarise the key insights from the evaluation by highlighting areas where the maintenance programme may be lacking in social or ecological benefits and recommend specific measures for improvement. For example, you may suggest the use of more sustainable materials or changes in scheduling to reduce environmental or social impacts.

Review the maintenance programme alongside the available budget as initially defined in Step one.

Re-score and generate a re-evaluated Doughnut by using the tool again with proposed changes to see their potential impact. This re-evaluation supports evidence-based adjustments to the maintenance programme.

STEP FOUR: VALIDATE THE OUTCOMES

Conduct an **internal sense check step to validate the scorings**. This involves reviewing both the baseline and re-evaluated scores with an authority team of stakeholders, including environmental experts, engineers, and social values experts, to validate the results, ensure accuracy and completeness.

Engage the contractor to review and confirm the reactive programme and Doughnut Assessments, ensuring the programme reflects practical realities. This step ensures alignment on key decisions related to operations, materials, and prioritisations, and supports smooth delivery of the programme.













STEP FIVE: MAKE INFORMED DECISION, ALIGN THE ORDER OF WORKS AND TRACK PROGRESS

Use the Doughnut Assessment outcomes to make a clear, evidence-based decision on the final maintenance programme.

Make an informed decision: Review the baseline and re-evaluated Doughnut visuals to guide your selection and prioritisation of activities. Consider which improvements offer the greatest benefit, which tradeoffs are acceptable, and how to deliver impact within budget constraints.

Translate insights into delivery requirements: Turn assessment findings into clear expectations for contractors. These should be reflected in the works programme and include specific requirements for materials, processes, or delivery adaptations.

Align and sequence the works: Finalise the order and timing of tasks using the Doughnut insights, balancing delivery needs with the greatest potential for social and ecological improvement.

Monitor and feed forward: Set up a simple monitoring process to track how the programme performs across the year. Capture data on costs, materials, outcomes, and impacts to feed into Step One of the next maintenance cycle—supporting continuous improvement.













4. DOS AND DON'TS WHEN USING THE TOOLKIT

To get the most out of the Highways Doughnut Toolkit, it's essential to apply it in a way that stays true to the core principles of Doughnut Economics: meeting the needs of all people within the means of the planet.

The following do's and don'ts offer practical guidance for using the toolkit effectively and meaningfully, without compromising the integrity or intent of Doughnut Economics.

DO

- Use the tool as a conversation starter, not just as a scoring mechanism. It's meant to surface perspectives, challenge assumptions, and build shared understanding.
- Use the toolkit to inform, not justify. Use it as a learning and reflection tool early in the process to genuinely assess and improve outcomes, not to justify decisions already made.
- ☑ Use it to support better decision-making. Let the toolkit guide strategic and project-level decisions by helping to clarify impacts, highlight trade-offs, and identify actions that align with social and ecological goals. Use the re-evaluation feature to compare alternative solutions and support more informed choices that maximise positive outcomes.
- Engage multiple perspectives and diverse voices across departments and stakeholder groups, including contractors, engineers, planners, and communities, along with experts in the different social and ecological themes of the toolkit.
- Document your reasoning behind scores and decisions, and be transparent about uncertainties and limitations in your assessments. This helps build transparency, institutional memory and improves future evaluations.
- ☑ Keep your ambitions high and in line with the Doughnut State for each theme. Let the ideal conditions for people and planet—defined in each Doughnut State—guide your ambition. Don't settle for minimum compliance or status quo benchmarks.
- Use it iteratively. The Doughnut isn't a one-off exercise—it's a tool for continuous improvement and strategic alignment over time.
- ☑ Take the time to do the process well. Ensure you have a
 dedicated internal team that understands the toolkit and
 can coordinate the assessment and engagement process,
 supported by a wider pool of thematic experts who can
 provide input and guidance across the Doughnut's social
 and ecological dimensions.

DON'TS

- Don't treat it as a tick-box exercise. The toolkit is not designed to generate compliance scores or satisfy procedural requirements. It's a decision-making support tool, not a certification scheme.
- Don't use it in isolation. Let the toolkit be part of a broader shift toward holistic, mission-driven planning and maintenance, not a one-off exercise. Its holistic nature requires breaking down silos within Highway Authorities and fostering collaboration across departments and with external stakeholders. Applying the toolkit effectively means working across roles, responsibilities, and disciplines to address interconnected social and ecological challenges.
- Don't ignore inconvenient results. If the toolkit reveals shortcomings or gaps, face them constructively. Don't filter out inconvenient results or avoid uncomfortable insights.
 - Don't cherry-pick themes or questions. The tool is designed for a holistic evaluation across all social and ecological dimensions. Selectively applying parts of it breaks from Doughnut thinking and undermines the purpose and integrity of the tool.
- Don't delay its application. The toolkit is most useful early in the process—waiting until late-stage design or procurement limits its potential impact.
- ☑ Don't commercialise the tool. The Highways Doughnut Toolkit is an open-source resource designed to support Highway authorities. It may not be sold or packaged solely as a commercial service by private companies without the local authority's involvement and sign-off. Keeping it freely available ensures broader learning, shared improvement, and accessibility for all local authorities.
- Don't misrepresent its use. Using the toolkit does not automatically make a project a 'Doughnut project'. Unless all Doughnut States are fully met, care should be taken in external communications. Counties may say they are using the Doughnut Toolkit to inform decisions, but should not claim full Doughnut alignment unless the project meets all social and ecological threshold













APPENDIX ONE: DOUGHNUT HIGHWAY THEMES

SOCIAL THEMES AND DOUGHNUT STATE

ACCESSIBILITY	COMMUNITY	HERITAGE
The delivery of highway maintenance service enables road networks to be accessible and usable by all intended users, considering their diverse capabilities and needs.	All community members are provided with equal oppaortunities to be engaged in and well-informed about highway activities.	Highway maintenance activities are conducted in a manner that protects and safeguards cultural and natural heritage from negative impacts.

EDUCATION	EQUALITY	HEALTH
All staff involved in the delivery of highways maintenance services acquire the knowledge and skills needed to promote and deliver regenerative practices.	Road networks are maintained with equal quality and fair distribution of resources across the county, ensuring that all areas receive the same level of care and attention.	The delivery of highway maintenance service and its supply chains contribute to mental or physical health and wellbeing by improving ecological conditions, specifically targeting ambient air quality, noise levels, light pollution, and odour sources.

INCOME AND WORK	LOW-CARBON MOBILITY	SAFETY
The highway maintenance staff, volunteers and associated supply chain workers are provided with employment security and fair compensation while upholding workers' rights and promoting local employment opporunities.	The delivery of highway maintenance service ensures that low-carbon modes of transport (such as active mobility, shared mobility, public transport) are available for all and the infrastructure that supports them is enhanced.	The quality of air is always maintained, preserved and restored when necessary by eliminating the generation of pollutants at the source. Regenerative measures are actively promoted to restore and maintain clean air.













ECOLOGICAL THEMES AND DOUGHNUT STATE

ENERGY	HAZARDOUS MATERIALS	CLIMATE CHANGE
Energy comes predominantly from renewable energy sources, while energy consumption is minimised and energy efficiency is maximised.	Hazardous materials, substances, and mixtures in local operations are carefully managed, thereby eliminating impacts on human health, natural ecosystems, and biodiversity.	Climate change is mitigated by limiting the global temperature increase to well below 1.5 degrees Celsius above pre-industrial levels, by drastically reducing greenhouse gas emissions (CO2, CH4, N2O, HFCs), achieving carbon neutrality, and actively striving towards carbon positivity through carbon sequestration methods.

SOIL AND LAND HEALTH	WASTE	BIODIVERSITY
Soil and land health is preserved and enhanced by minimising soil disturbance, mitigating man-made or natural geohazards in local operations and avoiding land degradation (such as loss of productive lands, deforestation and desertification) in the supply chain.	Waste management follows the Waste Hierarchy principles, which give top priority to waste prevention, followed by reuse, recycling, recovery and final disposal.	Highway maintenance activities ensure that biodiversity is maintained and enhanced, ensuring healthy ecosystems and resilient habitats.

MATERIAL FOOTPRINT	WATER	AIR QUALITY
Materials used meet the three fundamental principles of a circular economy: 1) Use regenerative resources, 2) Implement reuse and recycle practices, and 3) Maximise resource efficiency	Water consumption is minimised through increased water use efficiency, recycling, and reuse. The rate of water extraction never exceeds the natural replenishment rate of aquifers and surface water sources.	Highway maintenance activities ensure that biodiversity is maintained and enhanced, ensuring healthy ecosystems and resilient habitats.













APPENDIX TWO: HIGHWAYS DOUGHNUT SPREADSHEET

The **Highways Doughnut Toolkit** has been translated into a spreadsheet to enable highway officials to carry out both **strategic** and **project-level** evaluations of highway maintenance. This tool allows users to assess how well their maintenance activities align with Doughnut Economics principles, balancing environmental sustainability with social equity.

This appendix provides guidance on how to operate the spreadsheet.

SPREADSHEET USER MANUAL

WHAT?

This spreadsheet has been designed to transform the toolkit into a functional, interactive scorecard and dashboard. Users can input their scores and provide justifications, while automatically generated visualisations offer insights to better understand and analyse the impact of their work.

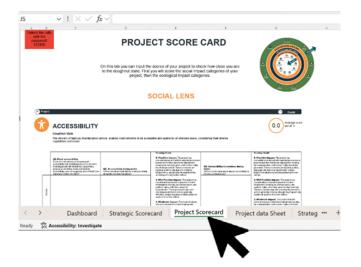
The file consists of five tabs. These are the 'Dashboard', where the visualisation of the scores appears, 'Project Scorecard', where users can score their projects, 'Strategic Scorecard', where users can score their strategy, "'Project Datasheet' and 'Strategic Datasheet' in this order. The last two sheets are hidden, as they do not require user input and only contain background calculations.

HOW?

This section will provide a step-by-step explanation on how to use the Highway Doughnut strategic tool, then the Highway Doughnut project tool.

STRATEGIC TOOL

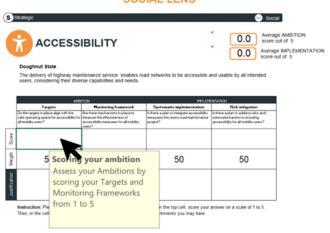
To start evaluating your strategy, click on the Strategic Scorecard tab.



1. UNLOCKING THE SCORECARD:

To make sure all formulas and formatting stay in place throughout the distribution of the spreadsheet, all tabs have been locked. To unlock the Strategic Scorecard 'score', 'weight' and 'justification' 'mitigation', 're-score' and 'justification' cells, double click on any of the score input cells.

SOCIAL LENS



Then type in the password: 123456



To unlock the whole sheet, click on the <u>review</u> tab on the ribbon and select the unprotect sheet option. Use the password: **123456** again to unprotect the whole sheet. This way, all cells, formulas and objects can be edited.















2. ASSIGNING SCORES, WEIGHTS, JUSTIFICATION AND MITIGATION:

To assign a **score** to each impact category, click on the top cell. You will then have the option to assign a score ranging from one to five.

Social ACCESSIBILITY O.O. Average AMBITION score out of 5 O.O. Average MINTERMENTATION score out of 5 Average MINTERMENTATION score out of 5 O.O. Average MINTERMENTATION score out of 5 Average MINTERMENTATION score out of 5 Average MINTERMENTATION score out of 5 O.O. Average MINTERMENTATION score out of 5 Average MINTERMENTATION score out of 5 Social Average MINTERMENTATION score out of 5 Average MINTERMENTATION score out of 5 Social Average MINTERMENTATION score out of 5 Secretary Manuscript Intermediate and needs. SECRETARION IN the support of the secretary out of the secretary of the secretar

The user can decide to **weigh** the two questions in the ambition and implementation categories. To do this, click on the cell called weight and modify the number. The two weights in one category must always add up to 100.

To provide a **justification** for each question, click on the cell below the score and enter your response.

When answering each question, the following should be kept in mind:

- a. **Assess the targets:** Use the strategic tool to assess and score how well the targets align with the desired Doughnut state for each of the ecological and social themes.
- b. **Assess the monitoring:** Assess and score the availability and quality of monitoring frameworks to monitor the progress towards the set targets.
- c. Assess systematic application: Assess and score the systematic application of policies. Are there clear procedures in place to ensure that the policies are consistently implemented in daily operations? This includes checking for established processes that integrate distributive and regenerative principles into practice.
- d. Evaluate risk mitigation: Have risks and mitigation measures been identified to support the implementation of these policies? Evaluate whether there are strategies in place to address potential risks and ensure that the procurement practices are both distributive and regenerative.

Based on the assigned scores and justifications, mark down potential **mitigation measures** improving the outcomes. You do this by clicking the cell below 'justification'. This allows you to brainstorm on measures that can improve the strategy's alignment with Doughnut Economics and the defined States.

3. UNDERSTANDING AVERAGE SCORES:

The weighted average scores that appear in all impact categories are calculated based on the scoring and weighting provided by the user. In each impact category, an average score is calculated for the ambition of the strategy and for the implementation of the strategy.

4. RE-EVALUATE THE SCORE BASED ON MITIGATION MEASURES BY RE-SCORING AND JUSTIFYING THE CHANGES:

You may wish to re-score the strategy based on the identified mitigation measures. This allows for the average score to be updated based on the improved outcomes.

Fill in the **re-evaluation scores** based on the identified mitigation measures. Follow the same process as previous scoring, but with adjusted outcomes. Make sure to clearly **justify** why and how the adjusted score was selected.







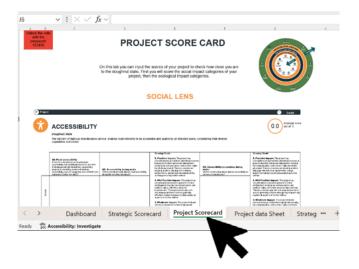






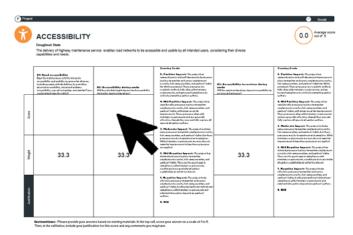
PROJECT TOOL

To start evaluating your strategy, click on the Project Scorecard tab.



1. UNLOCKING THE SCORECARD:

To make sure all formulas and formatting stay in place throughout the distribution of the spreadsheet, all tabs have been locked. To unlock the Project Scorecard 'score', 'weight' and 'justification' cells, double click on any of the score input cells.



Then type in the password: 123456

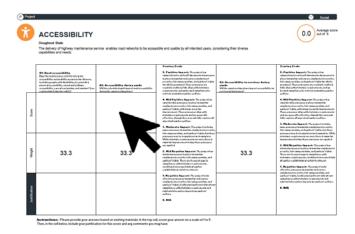


To unlock the whole sheet, click on the <u>review</u> tab on the ribbon and select the unprotect sheet option. Use the password: **123456** again to unprotect the whole sheet. This way, all cells, formulas and objects can be edited.



2. ASSIGNING SCORES, WEIGHTS, JUSTIFICATIONS AND IDENTIFY MITIGATION MEASURES:

To assign a score to each impact category, click on the top cell. You will then have the option to assign a score ranging from one to five. The scoring scale next to each question helps the user decide what score to give. If the question is deemed not applicable you may score it a 0 and the question will be disregarded from the average score.



The user can decide to **weigh** the questions in each impact category. To do this, click on the cell called weight and modify the number. The sum of the numbers assigned as weights must either add up to 100 or equal zero. If the weights equal zero, this means that this impact category is not applicable to the assessed project.

To provide a **justification** for each question, click on the cell below the score and enter your response.

To improve the outcome of the project, mark down potential mitigation measures that maximise the social and ecological impacts.













3. UNDERSTANDING AVERAGE SCORES

The weighted average scores that appear in all impact categories are calculated based on the scoring and weighting provided by the user.



4. RE-EVALUATE THE SCORE BASED ON MITIGATION MEASURES BY RE-SCORING AND JUSTIFYING THE CHANGES

This allows for the average score to be updated based on the updated scope.

Fill in the **re-evaluation scores** based on the identified mitigation measures. Follow the same process as previous scoring, but with the adjusted outcomes. Make sure to clearly **justify** why and how the adjusted score was selected.

DASHBOARD

The dashboard has two main elements, one for the strategy level and one for the project level right below it. These elements contain visualisations of the data that users put in on the score cards. The visuals contain the same data but are presented differently, depending on what the results will be used for or shown to.

STRATEGIC TOOL

The **Doughnut visual** for the Strategy level consists of two Doughnuts; one for Ambition and one for Implementation. This visual allows to show the full impact across both social and ecological lenses, but does not showcase the different scores between Ambition and Implementation.

SOIL AND LAND HEALTH SOIL AND LAND HEALTH CHANGE ACCESSIBILITY COMMUNITY HERRITAGE NOOME AND WORK NICOME AND WORK NICOME AND WORK NICOME AND WORK NICOME AND WORK WATER WATER

SOLAND LAND HAZARDOUS MATERIALS LOW CARRON MORLITY NOONE AND WORK NOONE AND WORK HEALTH HEALTH WASTE













The **spider charts**, on the other hand, are separated into social and ecological visuals. One colour represents the ambition average score, the other the implementation average score. The spider chart can be leveraged as a visual communication tool to convey the gap between ambition and implementation in one single visual. However, it does not show the holistic score across the ecological and social lenses.

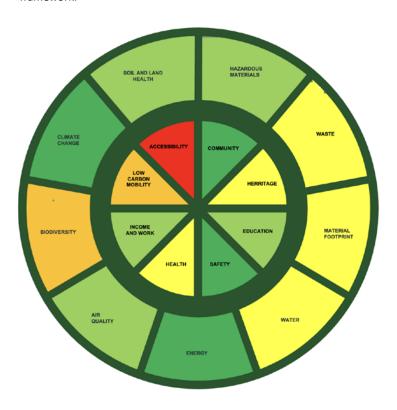
The same data is available for both the social and ecological lenses in the format of a bar chart and a **spider chart**. This way, users can easily draw comparisons between the project and the strategic level.



Figure five: Strategy level spider for the social lens

PROJECT TOOL

On the **project level**, there is just one Doughnut visual showing the results of the evaluated project on the Doughnut framework.















APPENDIX THREE: GLOSSARY

Doughnut Economics: A transformative economic framework that redefines the goal of economic systems from relentless GDP growth to thriving within the ecological and social boundaries of the 'Doughnut'. It encourages a holistic understanding of economic health, highlighting that sustainable success involves knowing when to shift from growth to flourishing within planetary limits.

Circular economy: The circular economy is a system where materials never become waste, and nature is regenerated. It is based on three principles, driven by design: 1) Eliminate waste and pollution, 2) Circulate products and materials (at their highest value), and 3) Regenerate nature.

Doughnut unrolled into four lenses: A concept developed for cities that takes us from the Doughnut to four 'lenses' that invite you to look at the interplay between local aspirations and global responsibilities in your place—both socially and ecologically—and identify possible entry-points for transformative action.

Sustainable Development Goals (SDGs): A global agenda of 17 goals developed by the United Nations in 2015 to address global sustainability challenges across social, economic, and environmental domains.

Planetary boundaries: Scientific thresholds within which humanity can operate safely to prevent substantial environmental harm and ensure ecological stability. These boundaries underpin the ecological ceiling.

Regenerative development: In the context of Doughnut Economics, 'regenerative' refers to economic practices and systems that restore and enhance the health of the planet and its ecosystems. This approach prioritises sustainability by promoting the replenishment of natural resources, fostering biodiversity, and ensuring that human activities contribute positively to the environment. Regenerative systems aim to create a balance where the economy works in harmony with nature, supporting both ecological and social well-being.

Distributive development: 'Distributive' in Doughnut Economics emphasises the equitable allocation of resources and wealth within society. This principle advocates for systems that reduce inequality and ensure that all individuals have access to the resources necessary for a good quality of life. Distributive economies focus on creating fair opportunities for all, enhancing social justice, and promoting collaborative approaches that benefit the broader community rather than concentrating wealth and power in the hands of a few.

Service provider: Refers to both internal teams within the Highway Authority and external organisations or contractors responsible for delivering specific maintenance services. These services cover a range of activities, including feasibility designs, routine inspections, repairs, winter maintenance (such as gritting and snow removal), vegetation management, pothole repairs, resurfacing, and other tasks essential for maintaining the safety, functionality, and longevity of the highway network.

















