



RAIL4CITIES

Quick-start for S-ROI tool



The project is supported by the European Union
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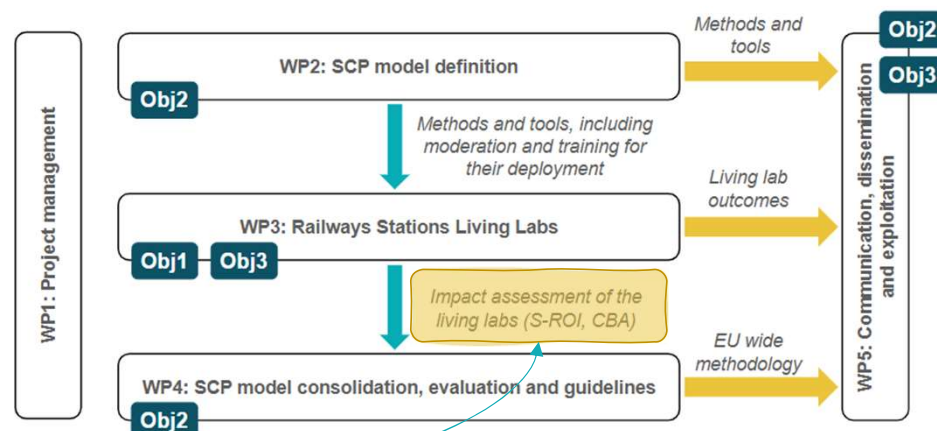
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The Need and Rationale



In order to arrive to WP4 it was needed to have a **solid impact assessment** of the Living Labs paradigms of WP3.

Consequently, a comprehensive examination of the methodologies, tools, and practical applications to evaluate and manage the social, economic, and environmental impacts associated with station-level activities was essential.



Sustainable Return on Investment (S-ROI) is being utilized as a broad framework alongside the rigorous economic evaluation method of Cost-Benefit Analysis (CBA), capturing a wide range of outcomes beyond traditional market values.



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Key Functional Modules

This section provides a detailed **functional description** of each page that makes up the tool, outlining their specific purpose, main functions, role within the overall workflow, and key elements.

A **step-by-step guide** to be used as assistance while using R4C_SROI_Toolkit Excel file.

The **aim** is to offer a clear understanding of how the different components interconnect to support the sustainable transformation process, from initial assessment to activity design, economic evaluation, strategic planning, and ongoing monitoring.

**In case you received “BLOCKED CONTENT” warning while opening the Excel file:*

Close the Excel file → Right click on the Excel file → Properties → General (tab) →

Safety (last warning) → Check “Unblock” → Open the Excel file again

Page 1: Activities and Impacts – 1

General Purpose

This page serves as the **starting point** for creating activities aimed at the sustainable transformation of the train station.

The selections made here are reflected in the next page for deeper analysis.

Connection of **“Fields of Action”** to the corresponding components and KPIs.

Choice of components to evaluate performance and impact using Key Performance Indicators (KPIs).

Fields of Action

Sustainable Mobility

Diverse and resilient
Spaces

Circular Resource
Management

Main Functions & Key Elements

“Select components” column (multi-select list of components)

- Select one or more components (click on the component)
- All components are selected by default → if text is bold, component is selected
- Click on the component to unselect → if text is not bold, component is unselected

“KPIs” columns (KPI assignment)

- Insert KPI of your interest related to each chosen component
- Tool automatically relates KPIs to corresponding component

KPI Library

*Press “KPI Library” button → Access to a KPI Library to better understand the metrics

Page 2: Activities and Impacts – 2

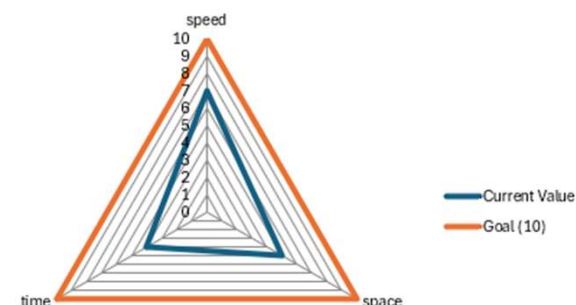
General Purpose

Transforms selections for Page 1 into a visual and strategic diagnosis.

Rates the current status of the train station for each KPI.

Generates radar charts that highlight weaknesses and areas for improvement.

Allows the user to define concrete actions for progressing toward sustainable transformation.



Main Functions & Key Elements

“KPI” table → evaluation of assigned KPIs to each component

- Insert unit, minimum value, actual value and goal value
- Insert scaled value (1-10)
- Minimum scaled value is 1 out of 10 by default; maximum scaled value is 10 out of 10 by default; can be modified

“Radar charts” → visual diagnosis

Based on the results, the user can identify station shortcomings.

“Solution Proposal” table → input fields for observations, issues, boundaries and solution proposals

Insert (manually) specific solutions using a methodology based on the SCP (Sustainability Change Process) model

Page 3: Activities and Impacts – 3

General Purpose

Identify and record long-term outcomes resulting from the activities defined in “Activities and Impacts – 2”.


The long-term outcomes will serve as the basis for quantifying economic benefits.

Connection of strategic planning with financial analysis.

Main Functions & Key Elements

Enables classification of outcomes based on *Theory of Change* methodology → Long-term outcomes connected to medium-term, which are connected to short-term outcomes as a chain effect.

Select / Insert:

- **Activity** →  in “Activity and Impacts 2” (cell D6 dropdown list)
- **Introduce new outcome** → Select short-term, medium-term, long-term (cell D7 dropdown list) →
→ Type specific outcome to add (cell D8 manual)
- **Select outcome relation** →
 - If cell D7: Long-Term → Connect to *medium* and *short* → Type Short-Term and Medium-Term (cells D9 and D10 respectively manual).
 - If cell D7: Medium-Term → Connect to *short* → Type Short-Term (cells D9 manual).
 - If cell D7: Short-Term → No need to fill in cells D9 and D10.

Add outcome

Press “Add outcome” button →
→ validation of information and
automatic addition in sortable
“Outcomes” table.

Sort

Press “Sort” button →
organize table

Page 4: Activity Costs – 1 (General Costs)



General Purpose

Record and organize general costs related to project activities.

Ensures a clear and consistent economic data foundation, serving as the basis for capturing costs associated with the previously created activities.

These costs are based on the activities defined in “Activities and Impacts – 3”.

Preparation of economic data to be monetized and evaluated in “Activity Costs – 2 and 3”.

Main Functions & Key Elements

Facilitates structured cost entry per activity, cost type, and concept.

Validate the information and automatically add it to a sortable table for later use.

Select / Insert:

- **Activity** → **Solution Proposed** in “Activity and Impacts 2” (dropdown list)
- **Introduce new cost** → Select investment, operative annual, maintenance annual cost (dropdown list)
- **Cost description** → Insert general concept and description on the selected cost type (manual)
- **Annual Cost** → Insert annual cost of the selected cost type (manual)

Add cost

Press “Add cost” button →
validation of information and
automatic addition in sortable
“Outcomes” table.

Sort costs

Press “Sort costs” button →
organize table

Page 5: Activity Costs – 2 (Benefits)

General Purpose

Record and classify costs associated with activities and their long-term outcomes defined in “Activities and Impacts – 3”.

Connects the definition of activities and outcomes with their economic valuation.

Enables monetary quantification of expected benefits.

Generation of inputs needed to calculate the S-ROI in “Activity Costs – 3”.

Main Functions & Key Elements

Selection of the activity, linked long-term outcome, and monetization method (Reference Costs or Financial Proxies).

Consolidation of the monetized benefits feeding the financial analysis.

Select / Insert:

- **Activity** → **Solution Proposed** in “Activity and Impacts 2” (dropdown list)
- **Long-term** → Select outcome connected to activity (dropdown list)
- **Monetization Method** → Select “Reference Costs” or “Financial Proxies” method (dropdown list)

Add

Press “Add” button → validation of information and automatic addition in sortable “Reference Costs” and “Financial Proxies” tables.

Page 6: Activity Costs – 3 (S-ROI Ratio)

General Purpose

Calculate the Social Return on Investment (S-ROI) for each activity based on “Activity Costs – 1 and 2”. Provides the final quantitative evaluation of the project's social and economic impact. Supports decision-making, activity prioritization, and validation of the social return generated.

Main Functions & Key Elements

Import and consolidate cost and benefit data, distribute them annually according to the time horizon, apply adjustments such as deadweight and attribution, and calculate the S-ROI ratio (total adjusted benefits divided by total costs) for each activity.

“Analysis Parameters” section

- Initial Year → Insert start year for the analysis (cell D5 manual)
- Number of Years → Insert time horizon for the analysis (cell D6 manual)
- Press “Generate S-ROI” button → validation of information and automatic addition in sortable “Summary Table”

Generate S-ROI

“Summary Table” section (automatic)

- Activity → **Solution Proposed** in “Activity and Impacts 2” (dropdown list)
- Total Cost → accumulated costs during selected period
- Total Benefit → accumulated benefits during selected period
- S-ROI → Total benefits / Total costs ratio

Individual Blocks by Activity section → detailed breakdown

- Costs (by type) → initial investment (year 0), annual operating and maintenance cost
- Benefits → listed and summed to obtain annual total benefit
- Annual cash flow → Year, Costs, Benefits, Flux (net flow; benefit minus cost)
- Total → summary per column
- S-ROI Ratio → final S-ROI ratio related to costs

Page 7: Implementation Roadmap (BMC)

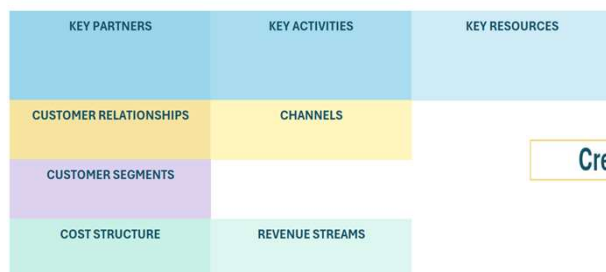
General Purpose

Centralized control panel to manage and visualize the status of all project activities, facilitating monitoring and direct access to their respective Business Model Canvas (BMC).

Bridge between economic management of activities (costs and benefits) and strategic planning.

Centralizes key information for tracking and updating. Overall project progress.

Activity BMC



Help

Create Business Model

Go

Main Functions & Key Elements

Business Model Canvas control panel

- Press “Help” button → provides BMC definition, description and summary of its blocks
- Press “Create Business Model” button → Generates an up-to-date list of activities →
→ Select progress status as “Not started”, “In progress”, “Completed” (dropdown list) →
→ Press “Go” button for direct access to each activity’s BMC

Add item

Back

Activity BMC (this page appears after pressing the “Go” button)

To introduce an Item in the BMC → Select Block (dropdown list in cell D5) → Insert Item in BCM (manual in cell D6) → Press “Add item” button

Press “Back” button → return to the Business Model Canvas control panel

Page 8: Monitoring of the impacts

General Purpose

Visual and comparative tracking of KPIs in three key areas.

Monitoring tool to validate results and support decision-making based on measurable indicators.

Main Functions & Key Elements

Displays tables with historical KPI data for all components of “Fields of Action”

Press “Add new measurement” button → incorporation of new measurements while maintaining format

Add new measurement

Visualization of KPIs grouped into the three strategic fields

Press “Update Charts” button → automatic generation and update of radar charts to visualize changes and trends

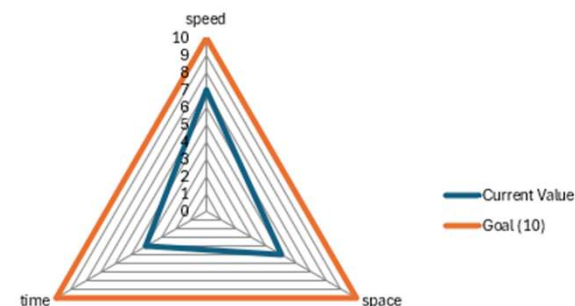
Update Charts

Fields of Action

Sustainable Mobility

Diverse and resilient Spaces

Circular Resource Management





For more information about RAIL4CITIES project visit <https://rail4cities.eu>

For more information about the Consolidated Impact Analysis Tool
visit https://rail4cities.eu/wp-content/uploads/2025/10/RAIL4CITIES_D4.2_Consolidated-impact-analysis-tool_V2.0_compressed.pdf

For technical doubts and assistance contact cenit.bcn@upc.edu



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