



C2R – RESILIENCE RECOVERY TOOLKIT

Urban Resilience Screen

What

The Urban Resilience Screen is a tool to help investors evaluate the resilience value of an infrastructure project. The tool, designed by 100 Resilient Cities in collaboration with Wood and the Rockefeller Foundation, was developed to explore the potential of an infrastructure proposal to withstand sudden shocks and prolonged stresses, minimize impacts on the environment and society, as well as contribute positively to health, job creation and community cohesion.

Investment in resilient infrastructure is a critical component to building urban resilience, as well as to creating the basic physical and organizational structure needed for the operation of a society or enterprise¹. Applying a ‘resilience lens’ to the development of an infrastructure project yields better-designed projects that consider and address multiple challenges simultaneously, improving services and saving resources.

Covid-19 has highlighted the importance of revising existing knowledge on infrastructure development and on services that rely on hard infrastructure. For example, this crisis has shed light on the fragilities of an urban mobility system that relies completely on mass-transit vehicles; or on the lack of open public spaces to accommodate citizens without overcrowding shared spaces.

This tool allows investors to promote **resilient infrastructure** projects, which:

1. Is conceived of and developed through a **resilience-based process**.
2. Exhibits **reliable performance and intended outcomes** in both routine and extraordinary situations, e.g., through specific planning, design, construction, and operational practices, an infrastructure asset itself can be said to be resilient if it is able to withstand shocks, such as earthquakes, floods, and natural disasters, the impacts of other systemic failures, or day-to-day social, economic and environmental stresses.
3. Creates positive **‘co-benefits’ and minimizes negative impacts** by recognizing the systemic interdependencies that exist in cities.

Meeting the demand for infrastructure and investment using resilient solutions requires new approaches to realign incentives and design new delivery mechanisms at the right scales to systematically aggregate, monetize, and capture benefits that are usually left off project balance sheets entirely or simply described as “co-benefits.”²

The Screen is intended to be balanced, rigorous and data-driven, ensuring the resilience of the project and its contribution to the overall resilience of the city, while also maintaining the bankability of the underlying investment. It can be applied multiple times throughout the development of the project and ultimately used as a monitoring and evaluation tool to monitor project outcomes post-investment.

In the context of Covid-19, the Urban Resilience Screen should be seen as a tool that enables investors to assess existing co-benefits and opportunities - societal as well as financial - of a project to encourage resilience planning and accelerate recovery efforts to the outbreak. Green infrastructure projects offer an example of these resilience co-benefits mentioned

¹ <https://www.rockefellerfoundation.org/blog/urban-resilience-infrastructure-imperative-climate-uncertain-world/>

² REinvest (2015). A roadmap for Resilience - Investing in resilience, reinvesting in communities. Access: http://www.refocuspartners.com/wp-content/uploads/pdf/RE_invest_Roadmap-For-Resilience.pdf

above, which are key for long-term sustainable investment. Green infrastructure serves to increase the capacity of a city's stormwater management system through, for example, the planting of green spaces, bioswales or green roofs, whilst also providing community recreational facilities and environmental benefits. Similarly, a large power plant can be replaced with more sustainable local generators in neighbourhoods that turn food waste into energy, improving waste management. These systems are deliberately designed to provide the same services as traditional infrastructure, while also offering the added resilience dividends of flexibility and adaptation, so they can easily adjust to new conditions.

Why

Existing infrastructure is broken; it is inadequate to meet demand, susceptible to failure and highly inequitable. It is estimated that \$3.3 trillion of annual investment and multiple decades are needed to deliver the infrastructure to address basic human needs. Infrastructure projects must maximize both their mitigation and adaptation potential, combining hard infrastructure and nature-based solutions, and addressing physical constraints as well as community needs³. Even though there is general consensus around the benefits, the same qualities that make these types of infrastructure systems more resilient are also what make them difficult for investors to identify, evaluate, and, eventually, finance. Challenges include the capacity for project developers to invest capital upfront or resources to design large systems, or for investors to identify small projects for large-scale investment that can aggregate complex cross-sector projects in ways that allow for market rates of return. It is often difficult to fully articulate the indirect return on investment resilience projects create, which means it is complex to fully demonstrate the monetary value of such a project.

Covid-19 has demonstrated that health and economy are two sides of the same coin, which need to be addressed cohesively as a system. This tool allows investors to better understand these synergies between societal and financial gains, as well as innovate in infrastructure development to find solutions that are flexible and that integrate the knowledge from this pandemic to be better prepared for future shocks.

WHY SHOULD MY CITY ENGAGE IN THE URBAN RESILIENCE SCREEN?

- It helps local officials and investors to articulate and measure the positive impacts of a project across multiple sectors
- It provides guidance on the type of process required to ensure high resilience value in a project
- It focuses on supporting societal gains for the population and financial gains for investors, therefore, attracting wider investment to the city
- It is a tool that stimulates innovation and adaptation to local realities, which will support cities in being prepared for future shocks

How

The Screen is based on two steps:

First, it evaluates the extent to which the project itself is resilient. This evaluation considers the degree to which the project's design and operations anticipate future dynamic hazards and systemic interdependencies; plan for failure and redundancy in emergency scenarios with the goal of continuous functionality or short-term recovery periods; and anticipate long-term needs, including in-built functional flexibility for optimal long-term, effective use.

This evaluation will require the identification of the shocks and stresses impacting the performance of the project and the development of a strategy, which details how the project plans to address each during its design and operation. As the project develops, data will be required to support this evaluation.

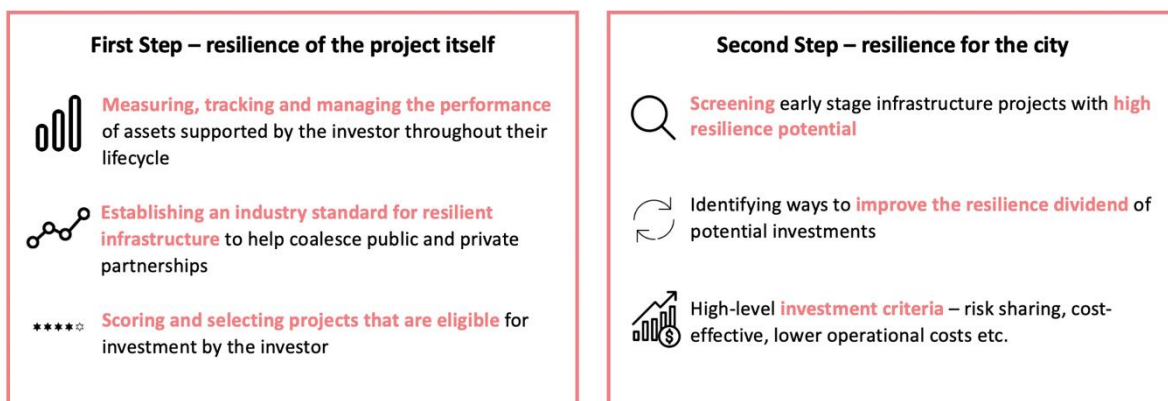
Second, the Screen evaluates the extent to which the project contributes to a city's resilience. This assessment considers the short and long-term impact of the project on users (i.e., direct impacts or primary project objectives) and on other beneficiaries, whether direct or indirect (i.e., the community). Indirect impacts are resilience 'co-benefits' or 'dividends' generated

³ <https://www.rockefellerfoundation.org/blog/urban-resilience-infrastructure-imperative-climate-uncertain-world/>

from the project that may fall outside the core objectives of the project but should be identified, maximized and supported throughout the project development and implementation to ensure its realization. These may be critical innovations that set the project apart from other similar projects. In addition to identifying and maximizing positive impacts, potential risks and adverse effects must also be evaluated and mitigated.

To evaluate a project’s contribution to city resilience, this portion of the Screen requires a characterization of the degree to which the project would influence key systemic drivers of resilience, which impact the surrounding communities and physical environment where the asset is built.

The Urban Resilience Screen will support the investors by:



Urban Resilience Screen two-step guide

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