Adapting Infrastructure Today for Tomorrow

Leading a resilient climate-related transformation of transport in Northern Ireland

Translink
Better. Connected

Leading the transformation of transport in Northern Ireland.

Climate change is the most pressing environmental challenge of our time. We need to act now to improve the resilience of Translink's Infrastructure to the challenges of climate change.

Addressing the most pressing issue of our time

Our mission in Translink is to lead the transformation of transport in Northern Ireland. This means we take a leading role in our contribution to climate change action, including the continuous improvement of the resilience of our bus and railway networks, safeguarding our assets against the impacts of extreme weather events.

Through our Translink 2030 Corporate Strategy entitled **'Better. Connected'**, we have established four key strategic objectives. These objectives are Customer Focus, Connecting Communities, Continuous Improvement and Climate Action.

We will act on climate change by taking steps to assess, plan, design, build, and upgrade our infrastructure so that it can continue to operate effectively, providing a reliable service that is adequately adapted and resilient to respond to the changes we encounter.

Translink's Action Plan for infrastructure adaptation

The aim of this document is to outline how Translink are currently working proactively to maintain the resilience of our public transport infrastructure while also providing an overview of our plan to take action through strategic planning, to invest in further adaptation and resilience building measures.

We will expand, enhance, and accelerate our existing strategic initiatives through our focus on Climate Action by developing a **Climate Change Adaptation Action Strategy** which will be launched in 2026.

Understanding the key concepts

Climate Resilience: a measure of the capacity to anticipate, prepare for and recover from the impacts of events made more common or severe by the changing climate.

Climate Adaptation: a process of understanding the adverse effects of a changing climate and adjusting for them by changing working arrangements, systems and structures. Adaptation may also refer to taking advantage of new opportunities.

The global context

At Translink, we understand that climate change is an urgent global challenge that requires a proactive response. The increasing frequency and intensity of extreme weather events, rising sea levels and shifting climate patterns requires us to take immediate and sustained action.

The United Nations Sustainable Development Goals (UNSDG's) present a call for urgent action by all countries in a global partnership, recognising the scale of the challenge and demanding that action is taken for a greener, fairer, better world by 2030.

Our alignment with these goals sits at the core of what we do, particularly focusing on three key goals in relation to this report: Goal 9 Industry, Innovation and Infrastructure, Goal 11 Sustainable Cities and Communities and Goal 13 Climate Action.

"Our infrastructure supports our communities, our economy and our essential services; it connects with the natural environment, and it connects us as people – we cannot afford for it not to be resilient."
Resilient Infrastructure for Northern Ireland, ICENI, 2024

Building a more resilient future

We understand that maintaining and improving a robust and resilient infrastructure is essential to maintain our key strategic goal of Connecting Communities and supporting our economy and social wellbeing. Public transport systems play a vital role in connecting people, fostering economic growth and opportunity, and enhancing the quality of life for our society.

This is why we are committed to the Continuous Improvement of our service to ensure our infrastructure can withstand and adapt to the changing climate and meet the short, medium and long-term future requirements of our customers.

Climate change is already here

While it is often considered that climate change is a concern for the future, statistical evidence of the changes in our weather patterns and the resulting outcomes experienced by society demonstrate the fact that our climate has already changed. Changes we experience today are currently accepted as being irreversible. There is overwhelming scientific evidence that we need to act now.

In Northern Ireland, 2023 was the warmest year on record, with 7 of the 10 warmest years occurring since 2000, showing a long-term warming trend. In 2023, Northern Ireland experienced its wettest July since records began back in 1836, with 2023 as a whole being the 3rd wettest year on record. In recent decades there has been an observed increase in annual mean rainfall in Northern Ireland.

Northern Ireland experienced 10 named storms in the 2023/24 storm season bringing high winds, disruption to electricity supplies, and heavy rainfall causing widespread flooding.

Climate projections

During an extreme event, maximum summer air temperatures are projected to increase from **30.1°C (1981-2000) to 33°C (2050s) to 35.5°C (2080s).**

Recent Met Office research projects predict that there will be a decrease in Autumn mean rainfall and a significant increase in the number of large-scale extreme daily rainfall events by the end of the century.

This will lead to increasingly intense and prolonged rainfall during wetter winters as well as more frequent and intense rainfall downpours during the summer.

Average sea level in Northern Ireland is projected to **rise 0.5m by the 2080s** under a high emissions scenario, in comparison to the 1995-2010 baseline.

Key climate hazards that can affect Translink infrastructure

- **Flooding**
- **Wind/Storms**
- **Water Scarcity**
- **Lightning**
- **Heat/Extreme High Temperatures**
- **Temperature Range**
- **Cold/Low temperatures**
- **Seasonal Shift**

Adapting to changes

Although further enhanced strategic investment will be necessary to support our adaptation plans, Translink has already been investing in the resilience of our infrastructure through our condition-based capital investment programmes. Some of our ongoing investment initiatives in relation to the hazards previously outlined include:

Storms
Identifying and safely removing higher-risk trees along the railway corridor coupled with biodiversity improvement measures to replace these with lower-risk trees in safer areas.

Flooding
Taking the opportunity where possible to construct new assets and improve existing assets such as culverts, bridges, and drainage systems to modern design standards accounting for future capacity requirements.

High Temperatures
Designing new railway track to account for future temperature rises in accordance with modern standards. Remote rail temperature monitors are currently used on the network.

Coastal Erosion and Rising Sea Levels
Constructing asset renewals to modern design standards, considering future predicted sea level rises.

Increased Rainfall Intensity
Improving our knowledge of the interdependencies between historical legacy earthworks assets and drainage systems, trialling of remote monitoring technology, and renewing assets to modern design standards.

Alongside taking the opportunity to design for the future through our condition-based capital programmes, Translink have continually improved how we safely manage present-day severe weather-related events. This involves the continuous review and implementation of our Weather Preparedness and Response Plan detailing how we forecast weather events, plan for impacts in advance and safely maintain public services during severe weather such as storms and heatwaves.

Severe weather events can often impact the safety and reliability of public transport services. In 2023/24, Translink experienced a sharp rise in extreme weather events causing delay and disruption to railway services compared to previous years; **almost four times the 3-year average.**

The impact of extreme weather to our services can be felt by our customers in numerous ways that include speed restrictions on our railway slowing down journey times and in the most severe cases, the cancellation of services which can mean our passengers are required to find an alternative means of transportation to their destination.

Investment in Resilience

Maintenance costs are likely to rise year on year due to the increasing requirement for advance preparations and reactive repairs to manage the impacts of adverse weather. As a comparison, Network Rail have reported an increase of 6% in maintenance costs between control periods CP6 (2019-2024) and CP7 (2024-2029).

Regionally within Network Rail Scotland, increased planned investment over the 5-years between 2024-2029 will mean that up to 25% of the £1.8bn forecasted for investment in railway infrastructure during this period, will be directly associated with improving asset resilience to cope with the impacts of climate change. This is a significant and important level of investment.

Having the financial ability to react is important and while a more detailed climate strategy remains in development, Network Rail have recently identified a 'risk fund' of £1.8bn (including a £53m targeted performance fund for Scotland) to cope with significant unforeseen climate related events arising during the 5-year control period for CP7.

The level of investment required by Translink will be scalable and comparable to that of other railway companies. The development of our strategy will incrementally assist us to determine a sustainable level of investment needed in order to deliver improvements to asset resilience both now and in future years and in doing so protect our vital public transport services.

Ongoing proactive stakeholder collaboration

Translink are currently working proactively at a local level in Northern Ireland in collaboration with policy stakeholders including Climate NI, Department of Agriculture, Environment and Rural Affairs (DAERA), Department for Infrastructure (DfI) and academia through our active participation in the local Climate Change Policy and Research Panel.

Our commitment is further reflected in our contribution to a series of industry panels on the recent report by the Institution of Civil Engineers Northern Ireland (ICE NI), titled Resilient Infrastructure for Northern Ireland – Planning, Delivering, Operating, and Maintaining Infrastructure for Our Future.

Published in April 2024, this ICE NI report provides a series of valuable insights outlining six key recommendations for policymakers, stakeholders, and professionals to ensure resilient planning, delivery, operation, and maintenance of infrastructure alongside identifying the unique opportunity presented by the size and scale of Northern Ireland for stakeholders to work together.

It is our aim to be guided by these recommendations as we continue to develop and refine our Climate Change Adaptation Action Strategy.

We will continue working with our industry partners at a local and national level to align best practices in climate adaptation planning for infrastructure. This will include forging and maintaining key relationships with all stakeholders across the industry to avoid cascading inter-dependent failures from the proposals of others likely to affect our public transport network.

Legislation and policy requirements

At a national level, the UK Climate Change Committee is tasked with providing progress reports to the UK Parliament in relation to the Climate Change Act 2008. This legislation established a legal requirement for the UK to adapt to climate change with the government tasked with producing a series of five-year adaptation plans for how it proposes to address the risks posed.

At a local level, the Climate Change Act (Northern Ireland) 2022 establishes a statutory requirement for the assessment and regular reporting of progress in the formation and implementation of Climate Change Adaptation Programmes in Northern Ireland.

This reporting is undertaken through a series of five-year Northern Ireland Climate Change Adaptation Policy (NICCAP) cycles, no later than three years into each five-year cycle. Translink are currently working in partnership with other key stakeholders to contribute to the development of NICCAP3 which is due to be approved, publicly consulted and launched in early 2025.

The timing of these legislative reporting requirements presents an excellent opportunity for the development of our Climate Change Adaptation Action Strategy during 2026 and we firmly welcome the intent of these statutory obligations, and pledge that we will continue to lead on the implementation of the relevant planning, reporting and adaptation requirements.

Strategic planning and development – the process

In order to establish a framework to develop our Climate Change Adaptation Action Strategy, Translink will align closely to the processes outlined by Climate NI, following a similar process with the toolkit to that undertaken by NI Local Government bodies.

> "....embed climate resilience into planning now and avoid locking in decisions that can result in irreversible changes, increased damages, or higher costs when larger and faster action is required later."
>
> **Adapting to Climate Change, The Climate Change Committee**

www.niadapts.org.uk/the-toolkit

Step 1.
Getting started

This key first step in the process has already been completed. In addition to the proactive, collaborative actions already being taken as outlined previously, we completed a **Climate Change Adaptation Strategy - Scoping Study.**

This study provided a high-level overview, assisting our asset owners to better understand the potential future impacts of climate change, the relevant local and national policy requirements and to define the direction of our future strategic aims.

Importantly, the process of undertaking a scoping study provided an opportunity to establish a collaborative internal working group with representation across our various Infrastructure Asset Management teams. Engagement of our people will be a key enabler to the successful development and delivery of the next stages of our strategic aims.

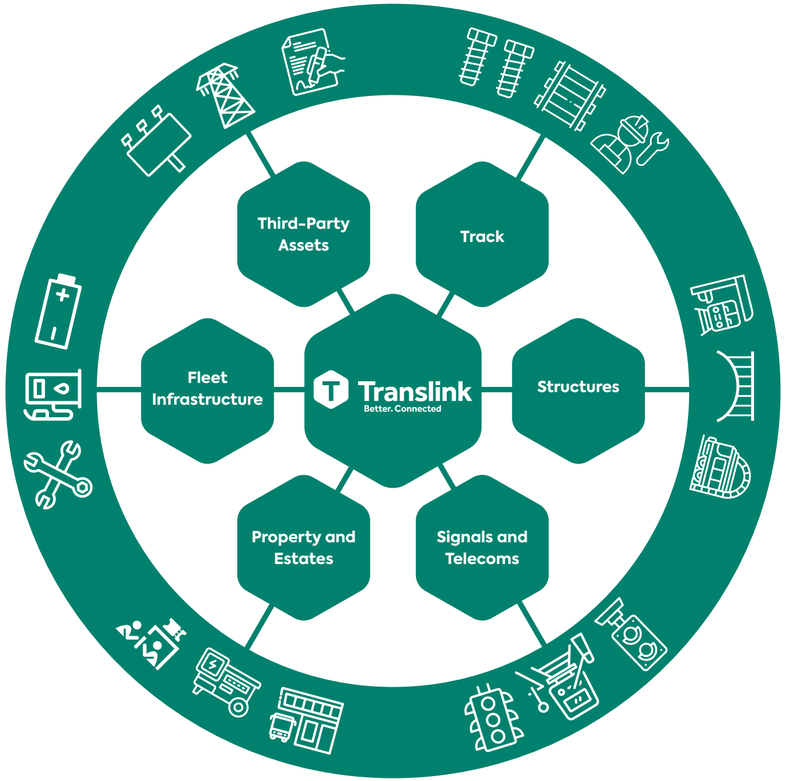
Step 2.
Understanding your vulnerability

Building on our knowledge and experience of historical weather-related events, the impact of these on our infrastructure and services and our current understanding of the vulnerability of our assets, we have already commenced with this second stage in the process.

We have completed a **first stage Flood Risk Assessment** of our railway infrastructure assets, and a **Sea Level and Climate Change Assessment** of our railway sea defences. These studies have been used to determine the initial extents of those assets most vulnerable to predicted future flooding events and sea level rises respectively.

In order to conclude Step 2, Translink will next complete a detailed **Climate Change Risk Assessment** and a gap analysis of our infrastructure assets to determine in more detail those areas of greatest vulnerability alongside identifying the risk-based priorities required for the formation of an adaptation strategy.

We will continue to further develop and refine our knowledge of the risks posed by specific hazards through further detailed assessment work in order to spatially identify specific asset groups and those sections of the network deemed most vulnerable to change.



Step 3. Identify and prioritise actions

Using the information gathered previously, Translink will develop a **Climate Change Adaptation Action Strategy.** The main aim of this document will be to identify and recommend a series of risk-based prioritised actions and timelines to continue to protect our infrastructure from the impacts of climate change and extreme weather.

This action strategy will provide a framework for the prioritisation of future maintenance and capital works programmes, building upon our current focus on improving the resilience of our infrastructure as the opportunity arises through condition-based asset interventions. The strategy will permit Translink to target specific areas of vulnerability requiring future investment – both in terms of staff resources and finance - to protect current service provision and to facilitate the future transformation and adaptation of essential public transport services.

Our strategy will focus primarily on our infrastructure requirements: **Track, Structures, Signals and Telecoms, Property and Estates, Fleet Infrastructure and Third-Party Assets.**

Presently, Translink are planning for the future electrification of our rail network as part of our Rail Decarbonisation Strategy. The risks, impacts and opportunities associated with this new infrastructure in relation to climate change will therefore be considered during the design stage and updated in future iterations of our Climate Change Adaptation Action Strategy as required

> "Our society depends on infrastructure, yet collectively we are not doing enough to ensure a resilient future for Northern Ireland. We need urgent action."
>
> **Resilient Infrastructure for Northern Ireland, ICENI, 2024**

Step 4. Take action

Having developed a clear list of strategic actions required, we will ensure that the risks posed to the future provision of public transport are communicated and our proposed climate adaptation actions are fully supported.

We will do this through continuous engagement with our internal stakeholders within Translink and also with our external stakeholders at government level.

We will continue to work with other sectoral and partner organisations to share best practice, collaborate on mutually beneficial projects and to ensure as far as is practicable that we avoid the risk of cascading failures.

We will ensure that our actions are SMART: specific, measurable, achievable, relevant and time-bound, and that progress is regularly reported through our Key Performance Indicators.

Step 5. Monitor, review and evaluate

Translink will continue to monitor and review how our adaptation strategy and actions are contributing to the continuous improvement of the resilience of our infrastructure, evaluating the effectiveness of measures taken.

Progress will be periodically reported on both internally within the company and externally through our statutory requirements as outlined previously. Our knowledge of the outcomes we are experiencing as a society in Northern Ireland due to the changes in our climate is constantly evolving. Equally, the reliability of the data we use to project the future changes to our climate are continuously refining and improving.

As such, our strategy and subsequent action plans will need to remain in focus and under periodic review. Translink will therefore periodically evaluate the need for strategic change throughout the regulatory reporting cycles.

Future focus

Key to the successful delivery of this strategy is the support of our people in Translink. We will ensure that our people are fully invested in the critical role they play in planning, reviewing and delivery of this strategy.

Translink are fully committed to raising the awareness of the impacts of climate change in relation to the vital public services we provide. This applies not only to how public transport can assist with the reduction of our impact on the environment as a society but also the importance of protecting the services we provide by adapting our infrastructure to remain resilient and protected for today and for future generations.

Investment will be critical to delivering these infrastructure adaptations. Translink will continue to work closely with our key stakeholders in government to ensure that our adaptation actions are supported through sustainable periods of investment, aligned to our plans.

As part of our future vision, when we are investing in our infrastructure, we will ensure that we innovate through the incorporation of best practices and environmentally friendly sustainable solutions.

The integration of our strategic aims is important and we will ensure that in planning the adaptation of our infrastructure, we align with our other key business strategies such as our Climate Positive (+) Strategy 2021, Rail Decarbonisation Strategy 2023 and Biodiversity Strategy and Action Plan 2030 (launched in 2024) among others.

Translink are committed to Adapting Today for Tomorrow. The completion of our **Climate Change Adaptation Action Strategy** during 2026 will mark another key milestone in our journey to transform and protect your public transport services.

Join us on our journey

"Climate change adaptation planning for our public transport infrastructure is essential to ensure we maintain a resilient and reliable service in the face of increasing environmental challenges.

Proactive adaptation strategies coupled with investment in the required actions are vital to mitigate against these challenges, to protect our public transport infrastructure, to safeguard economic stability, and to ensure that our communities that rely on public transport remain connected."

Chris Conway
Group Chief Executive for NITHC & Translink

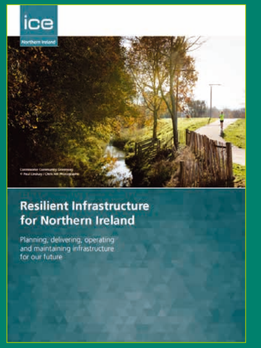
Read more about our journey

Not yet published

https://tinyurl.com/4d7yrd8p

https://tinyurl.com/bddsd2t7

https://tinyurl.com/2dwda9ns



https://tinyurl.com/4xemf685

Discover more at translink.co.uk

Translink
Better. Connected

This publication is available in a range of alternative formats, for example large print, braille or audio tape. Please call Translink Contact Centre 028 9066 6630.

translink.co.uk