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Wastewater Constraints and the cost of delay in Northern Ireland

An economy with the brakes on

July 2026

Turley

Report Sponsors:
Construction Employers Federation
NI Chamber
Chartered Institute of Housing

Additional WIG members and contributors:
Northern Ireland Federation of Housing Associations
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Foreword

Last June the Wastewater Infrastructure Group (WIG), commissioned a position paper *Confronting NI's Wastewater Crisis* setting out the projected economic impact of an acute slowdown in housing delivery as a result of our widespread wastewater infrastructure constraint.

In the same month, the Fiscal Council for Northern Ireland warned that decades of underinvestment in wastewater infrastructure are crippling our economic development, stalling new housing, and failing environmental standards in their *Sustainability Report 2025: special focus – Water (June 2025)*.

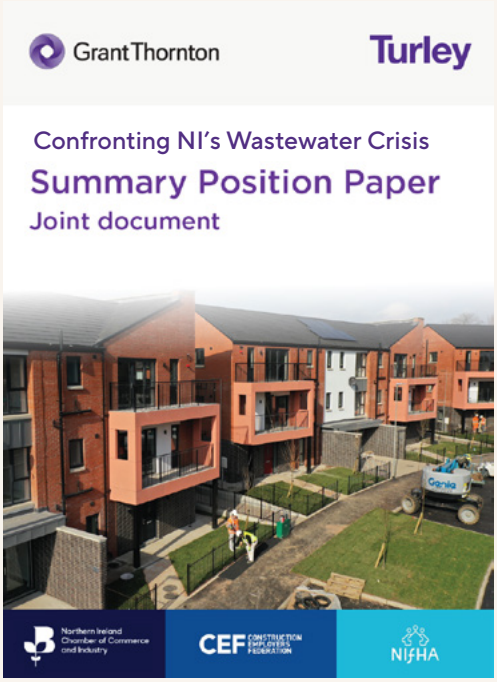
Our paper proposed five key actions, detailing solutions that could work towards an appropriately funded capital budget for our wastewater infrastructure, including the sustainable resourcing of NI Water to the appropriate level established by the Utility Regulatory through the existing Price Control mechanism.

In practical terms, the proposed solutions are a blended package to address a complex problem:

- secure early capital through an **Infrastructure Transformation Fund** (Regional Deal) or comparable UK Government support;
- reduce future pressure on the wastewater system through **Sustainable Urban Drainage Solutions** (SuDS) legislation, but not as a near-term solution to the current capacity crisis
- re-establish a sustainable link between water infrastructure and the rates system through a ringfenced **progressive household levy** to enable long-term borrowing to address the infrastructure deficit;
- use **voluntary developer contributions** to supplement, not replace, strategic infrastructure investment to enable development; and
- **build public and business support** through a clear programme of engagement on the scale of the challenge and the choices required.

We recognise that some progress has been achieved in the past year, with additional investment through monitoring rounds of around £30m to unlock almost 5,300 new homes, since Autumn 2024. These tactical interventions are welcome, recently unlocking new homes and opportunities for development in Derry~Londonderry, Newry and Belfast. However, with limited technically suitable opportunities for other lower-cost interventions, we need strategic solutions that will unlock capacity across the 23 towns and villages in Northern Ireland where all new construction has already halted.

We welcomed the Minister for Infrastructure's SuDS consultation and proposed legislation *(Water, Sustainable Drainage and Flood Management Bill)*, and the acknowledgement that whilst needed in future, the measures introduced would address only a tiny fraction of the capacity needed to address our current issues. We also welcome the Minister's announcement following consultation that legislation would be brought forward to allow voluntary developer contributions to strategic wastewater infrastructure. However, with time running out in the remainder of this Northern Ireland Assembly term, actions to progress these legislative measures are urgently needed.



Earlier this year, the need for revenue raising was recognised in the draft multi-year budget, with a proposed 5% increase in regional household rates. However, even with this rates increase, the draft budget confirmed that the Northern Ireland Executive cannot meet wastewater needs from existing capital envelopes. Prior to the draft budget, the 2025 report forecast a funding shortfall of £1.69bn in PC28, which would have resulted in a borrowing repayment need of £86.1m a year funded through an infrastructure levy. When applied to annual domestic household rates this would have equated to an average of approximately £100 per household. If this was adjusted to take account the of the draft multi-year budget and baseline allocation to NI Water for PC28 of £321m per annum, this would have resulted in a reduced forecast in the funding shortfall to £1.29bn for PC28, with a corresponding decrease in the average levy to £65 per household per annum.

The scale of the deficit remains an enormous challenge to the Northern Ireland Executive, and its block grant. The current budget allocation alongside non-domestic revenue addresses less than half of baseline expenditure required over the remainder of the existing price control period (PC21). As a result, we estimated last year that during the remaining price control period (up to April 2028) some **6150 homes** simply will not be built, resulting in the loss of **1,690 construction jobs** and **£1.3 billion investment forgone**.

Throughout this year we have continued to see housing starts fall to record low levels, planning applications fall to a 20-year low, indicating that the market is already losing confidence. NI Water has advised that 55,000 new home connections are impeded by some level of wastewater constraints. What this means for ordinary people is rising house prices, higher rents and a growing housing waiting list.

The cost of delay is mounting, and we call on all current and future Executive parties to commit to the sustainable funding of NI Water to the value of the price control agreed by the Utility Regulator. This report has been commissioned to illustrate the impact not just on housing, but to the whole of the Northern Ireland economy if collective action is not taken.

On behalf of the Wastewater Infrastructure Group (WIG):

Chartered Institute of Housing

Construction Employers Federation

Institute of Directors (NI)

Manufacturing Northern Ireland

Northern Ireland Chamber

Northern Ireland Federation of Housing Associations

Northern Ireland Retail Consortium

> **“we call on all current and future Executive parties to commit to the sustainable funding of NI Water to the value of the price control agreed by the Utility Regulator”**

Executive Summary

Wastewater infrastructure has become one of the most significant constraints on Northern Ireland's economic ambitions, with effects visible across the Programme for Government objectives, housing supply, economic growth and environmental recovery. This constraint appears as delayed homes, reduced development density, regeneration projects that take longer to come forward, businesses that cannot expand in the locations where they wish to invest, and continuing pressure on rivers, lakes and coastal waters.

This report uses a bespoke economic model of the Northern Ireland economy to assess two economic outcomes – one where we continue on the path we are on, i.e. our wastewater infrastructure deficit continues to constrain capital expenditure, and one where wastewater infrastructure receives the investment required to unlock our economic potential. The model estimates the difference between those two outcomes indicating that the economy in 2040 is more than £10bn smaller than it could be. For context, this is equivalent to around £5,500 per household.

2040 Economic opportunity gap

£10.9bn

The housing consequence is the most immediate expression of the wider economic cost. Around 55,000 homes *(NI Water, Developer and Agents Briefing, February 2026)* are estimated to be impeded by some level of wastewater capacity constraints[1]. In a region facing acute housing pressures, rising rents and a substantial social housing waiting list, this is one of the clearest examples of how infrastructure failure becomes a household cost.

Homes impeded by wastewater capacity constraints

55,000

The model also identifies the housing construction component of annual opportunity foregone. By 2040 this reaches £3.9bn of GVA[2]. Two important distinctions are required for this housing impact. Firstly, this figure should not be added to the headline £10.9bn opportunity gap. It is part of the same annual foregone opportunity, drawn out to demonstrate a socially visible component of the constraint. Secondly, the figure relates to GVA. If we consider the turnover impact on the construction sector of building (or in this case, not building) 55,000 homes, taking a standard 3-bed semi, approximately £10.5bn in construction turnover is lost.

The question this report poses is this: do we want a different economic path to the one we are on? If the answer is yes, solving our wastewater constraints is critical to the future economic prosperity of Northern Ireland.

1 This is based on data provided by NI Water to a Developer Agents Briefing on 2nd February 2026. The 55,000 homes figure is broken down as: c.37,500 can connect, with the majority requiring a developer self funded, zero detriment solution. c.17,500 are unable to connect to the wastewater system as they are above high polluting assets, unsuitable for developer funded solutions. This report treats all 55,000 homes as has having some level of impediment. Developer Solutions, such as stormwater offsetting, are not therefore as straightforward as presented as evidence has shown they are likely to impact on scheme viability, can take years for their design to be approved and can face challenges in adoption once constructed.

2 Gross Value Added (GVA) is the value that producers have added to the goods and services they have bought.

01.

Wastewater has become a major growth constraint for construction

CASE STUDY 1: MIXED RESIDENTIAL DEVELOPMENT (NORTH BELFAST)

Development Proposed is a mixed-use building of 209 residential units (208,357 sq ft), 70 affordable housing units (73,410 sq ft) and a commercial space (12,540 sq ft).

The proposed development is stalled due to significant infrastructure constraints identified by NI Water. The public foul sewer network cannot adequately service the development due to capacity issues, with downstream sewer systems in the Belfast catchment operating above capacity and Unsatisfactory Intermittent Discharges (UIDs), which discharge into the Lagan. Additionally, no public storm sewer is available to serve the site.

Foregone Impacts from Construction Phase[1]

£72m to £88m
Investment Foregone
In the construction of the Proposed Development

Between 365 and 450 gross direct jobs
FTE (full time equivalent) jobs forgone on average throughout the construction period (circa 2 years)

Including 135 to 165 net direct jobs
FTE jobs supported in Northern Ireland, including 80 to 100 in Belfast City

Plus 70 to 85 net indirect/induced jobs
FTE jobs forgone in Northern Ireland, including 20 to 25 in Belfast City

£46m to £56m Economy Boost
Measured in GVA[2], foregone in Northern Ireland during construction, including £38m to £47m in Belfast City

Foregone Impacts from Operational Phase[1]

55 retail jobs
Uplift of 20 net indirect/ induced jobs
For Northern Ireland residents, including at least 5 in Belfast City

Uplift of at least £2.6 million
Measured in GVA per annum, including £0.94 million in Belfast City

Uplift of at least £25,000
Non-Domestic Rates
Foregone per annum, including at least £5,000 retained each year by Belfast City Council

Uplift of least £830,000
Direct and indirect wages
Foregone per annum for Belfast City and Northern Ireland residents

New 209 private homes and 70 affordable homes
Foregone c. 530 residents, of whom 290 would be economically active and in employment

£740,000
Domestic Rates
Foregone per annum, inclusive of £410,000 to be retained by Belfast City Council

£5.7 million
Resident expenditure
Foregone per annum on retail and leisure goods and services, supporting local businesses and boosting economic demand

Foregone capacity for up to 50 retail and leisure jobs
Foregone per annum in the wider economy through resident expenditure

1 Economic methodology and assumptions detailed in Appendix
2 GVA (Gross Value Added) measures the value of output created (i.e. turnover) net of inputs used to produce a good or service (i.e. production of outputs). Put simply the GVA is the total of all revenue into businesses, which is used to fund wages, profits and taxes.

Introduction

Economic growth and competitiveness rely on a range of factors summarized by the OECD's *Growth and Competitiveness Framework diagram*. Physical infrastructure such as roads, and water systems are noted as enabling factors and are crucial elements of a competitive economy. Northern Ireland faces a range of constraints across many elements of our infrastructure, but it is wastewater that forms the focus of this report due to the clear evidence that a lack of wastewater capacity is now actively constraining the economy. For example, it is estimated that around 55,000 homes are delayed or impeded due to some level of capacity constraints. As the 'Addressing NI's Water Infrastructure Gap: Funding Options' report from the Wastewater Infrastructure Group (WIG)[3] in 2025 noted:

"Northern Ireland's wastewater infrastructure is at a crossroads. Chronic underinvestment, combined with a funding model that no longer meets the needs of a growing economy and population, has created an unsustainable situation. Without urgent action, NI Water faces a funding gap estimated to be in the order of £2 billion by the end of the PC28 period (2027–2033), directly threatening new housing development, economic growth, and environmental protection."

While not a significant material improvement, the allocations within the NI Executive's draft multi-annual Budget, inclusive of the Department for Infrastructure's baseline allocation to NI Water of £321m of capital expenditure per annum, mean that there is a reduction in the forecast shortfall in PC28 to £1.29bn. This reduction in capital expenditure deficit also reflects that the next Price Control will be five years in length as opposed to the originally proposed six.

This continued shortfall matters because Northern Ireland's major policy ambitions on housing, town centre regeneration, regional balance, private investment, climate adaptation and environmental recovery all require a wastewater system capable of supporting growth.

Because the cost of this constraint does not appear as one line in one single departmental budget, being dispersed through other outcomes such as homes not built, jobs not created, investment lost or delayed, and public confidence in delivery weakened, the purpose of this report is to make the cost visible by modelling contrasting economic paths to 2040 - one that continues on the constrained path we are on, and one where can deliver growth unconstrained by wastewater capacity issues.

3 The Wastewater Infrastructure Group comprised NI Chamber of Commerce, Construction Employers Federation, and NI Federation of Housing Associations. It has expanded to include Chartered Institute of Housing, Manufacturing NI, NI Retail Consortium, and the IoD.

The Foundations for Growth and Competitiveness Framework

02.

Economic Consequences of underinvestment in wastewater

CASE STUDY 2: PURPOSE-BUILT STUDENT ACCOMMODATION (SOUTH BELFAST)

Development Proposed is the construction of a Purpose-Built Student Accommodation (PBSA) development comprising approximately 610 bedrooms

The proposed development is stalled due to significant infrastructure constraints identified by NI Water. The surrounding wastewater network is already operating under severe constraint, with multiple downstream Combined Sewer Overflows (CSOs). These CSOs experiencing problems such as inadequate watercourse dilution, lack of screening, and insufficient storage, alongside extensive lengths of downstream pipeline with limited capacity, all of which prevent any additional foul sewage loading from the site. NI Water identified these assets as "high polluting" and confirmed that they are not funded for upgrade within the current Price Control 21 (PC21, 2021–27) investment period

Foregone Impacts from Construction Phase[1]

£55m
Investment Foregone
In the construction of the Proposed Development

275 gross direct jobs
FTE (full time equivalent) jobs forgone on average throughout the construction period (circa 1.5 years)

Including 140 net direct jobs
FTE jobs supported in Northern Ireland, including 85 in Belfast City

Plus 60 net indirect/induced jobs
FTE jobs forgone in Northern Ireland, including 15 in Belfast City

£35m
Economy Boost
Measured in GVA[1], foregone in Northern Ireland during construction, including £29.1m in Belfast City

Foregone Impacts from Operational Phase[1]

Similar employment generation
Employment roles would have shifted from hotel-based positions to PBSA related staff

£1.5m
Expenditure by student residents and their visitors
Foregone per annum on retail and leisure goods and services, supporting local businesses and boosting economic demand

Foregone capacity for up to
7 retail and leisure jobs
Foregone per annum in the wider economy through student residents and their visitors expenditure

Free up 150 private houses, resulting in the accommodation of about 360 residents
Helping to meet existing housing demand and reduce pressure on the wider private rented sector

£2.9m
Expenditure by additional residents
Foregone per annum on retail and leisure goods and services, supporting local businesses and boosting economic demand

Forgone capacity up to 24 retail and leisure jobs
Foregone per annum in the wider economy through additional resident expenditure

1 The economic methodology and underlying assumptions are set out in Appendix 2.
2 GVA (Gross Value Added) measures the value of output created (i.e. turnover) net of inputs used to produce a good or service (i.e. production of outputs). Put simply the GVA is the total of all revenue into businesses, which is used to fund wages, profits and taxes.

2.1 Constraint is not a static problem

Currently, the most visible consequence of wastewater constraint is in housing. Homes that should be progressing are delayed and investment that should be flowing into places is deferred. As noted previously, the scale of the housing issue is significant. Around 55,000 homes are estimated to be impeded by some level of wastewater capacity constraints. This is occurring in a context of already acute housing pressure, social housing need at record levels, rents and house prices rising, and annual housing delivery remaining well below the level required to meet demand.

The estimated distribution of these impeded homes shows that the housing constraint is not confined to one location. While the largest estimated exposure is in Armagh City, Banbridge and Craigavon, significant numbers of homes are also impeded in Lisburn and Castlereagh, Belfast, Newry, Mourne and Down, Mid Ulster and Antrim and Newtownabbey.

The distribution reinforces the central policy point. Wastewater constraint is a regional housing delivery issue, not a narrow Belfast infrastructure problem. It affects large urban housing markets, commuter belt locations and regional growth centres. This matters because each delayed home is not only a missed housing unit; it also represents deferred construction activity, weaker labour mobility, slower regeneration and continued pressure on affordability.

The Programme for *Government 2024-2027 'Our Plan: Doing What Matters Most'* has a Housing Supply Strategy targeting a minimum 33,000 social home completions by 2039, and in the shorter term at least 5,850 new build homes by the end of the current mandate (2024-27). This means work must start on at least 2,600 social homes before the next mandate, but much of where the housing need is greatest correlates with current wastewater constraints.

The economic significance of this is straightforward. Housing is not only a social outcome. It is also a major component of economic capacity. New homes support construction activity, local supply chains, household formation, labour mobility, town and city centre regeneration, and the viability of public and private services. When housing delivery is slowed by infrastructure constraint, the effect is felt well beyond the construction sector.

This is not a static problem. Each of the 11 local councils across Northern Ireland have prepared, or are preparing, growth ambitions for housing, and other land uses within their local development plans. When mapped against known wastewater constraint, the impact on this planned growth ambition across the region is significant, and growing.

LDP Housing Ambitions	Potential yield of housing monitor sites	Potential yield of sites not impacted by Closed Catchments	Potential yield of sites impacted by Closed Catchments	% of housing monitor capacity impacted by Closed Catchments
Antrim and Newtownabbey	8,369	7227	1,142	14%
Ards and North Down	6,893	5422	1,471	21%
Armagh City, Banbridge and Craigavon*	-	-	-	-
Belfast	20,246	5955	14,291	71%
Causeway Coast and Glens**	-	-	-	-
Derry City and Strabane*	-	-	-	-
Fermanagh and Omagh*	-	-	-	-
Lisburn and Castlereagh	7,995	7,408	587	7%
Mid and East Antrim	6,763	3404	3,359	50%
Mid Ulster*	-	-	-	-
Newry, Mourne and Down	10,186	7336	2,850	28%
Total	60,452	36,752	23,700	39%

* Data not available to inform assessment ** Latest NI Water Constraints Map does not show any closed catchments

Table 2.1: Comparison of Local Development Plan (LDP) housing ambition against known Closed Catchement Areas across the 11 Councils.

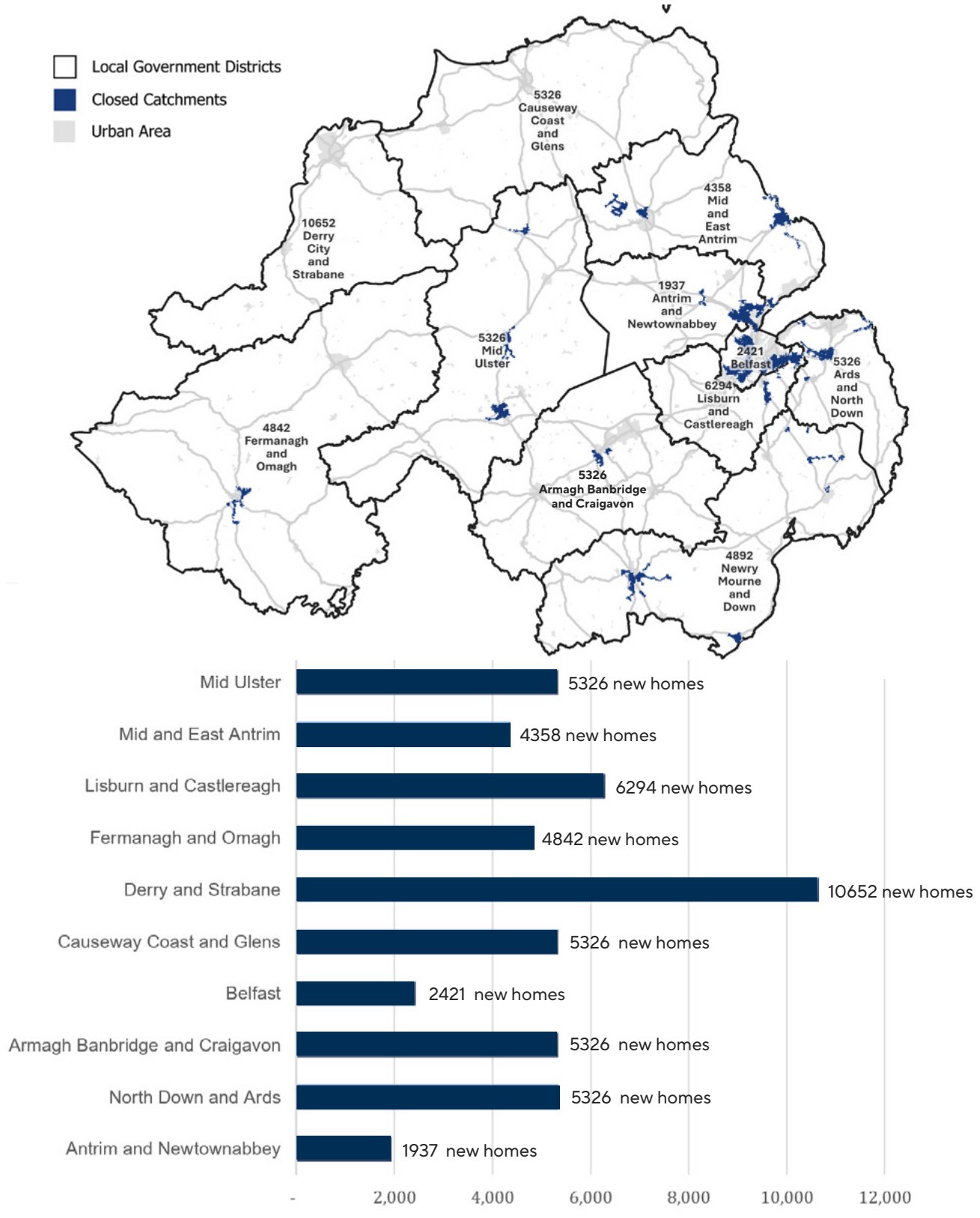


Figure 2.1: Indicative distribution of the 55,000 homes impeded by some level of wastewater capacity constraints

A review of the currently available housing land availability monitors, compared to the local development plan ambitions and known Closed Catchment areas *(NI Water Wastewater System Capacity Information - October 2025)* illustrates the impact that the current lack of infrastructure upgrades may have on future housing delivery across Northern Ireland.

Each of the 11 council's have already, or will be updating the land identified to meet their housing growth ambition as part of their Local Development Plans.

Based on available data this demonstrates many of those ambitions can not be realised without addressing the gap in wastewater infrastructure.

For example **an estimated 71% of all housing land identified for future housing in Belfast faces significant wastewater infrastructure constraint**.

2.2 Planning permission is not enough if the system cannot connect

Wastewater capacity now needs to be understood as a development constraint rather than simply a utility or environmental issue. Planning permission, private finance and development appetite are not sufficient if the system cannot accept new connections. In those circumstances, the economy does not stop completely, but it grows on a lower path than it otherwise could.

That lower-growth path can be difficult to see in real time. It rarely appears as one single cancelled project. It is more likely to appear as slower delivery, reduced density, higher costs, phased development, weaker investor confidence and postponed regeneration. Over time, those individual effects accumulate into a material economic gap.

2.3 Measuring the economy Northern Ireland is not building

The modelling undertaken for this report estimates the scale of that lower-growth path. It does so by comparing three potential trajectories for Northern Ireland's council-level economy:

- a baseline forecast, based on historic council-level GVA growth trends;
- a constrained forecast, which reflects the drag placed on development-sensitive activity by wastewater capacity limitations; and
- a success forecast, which represents the economic path that could be achieved if wastewater constraints were progressively addressed and development activity was able to move closer to its underlying potential.

The model uses Gross Fixed Capital Formation (GFCF) as a way of strengthening the link between capital investment in physical development and economic growth in the region. This is important because wastewater constraints do not affect every part of the economy equally. They are most relevant to activity that depends on development, capital investment, new buildings, regeneration and the physical expansion of housing, employment and commercial space.

Areas with higher development-capital intensity are more exposed to the consequences of a system that cannot accommodate growth. The model therefore applies a GFCF dependency index to capture the extent to which each council area's future economic performance is likely to be shaped by its ability to accommodate capital investment and development activity.

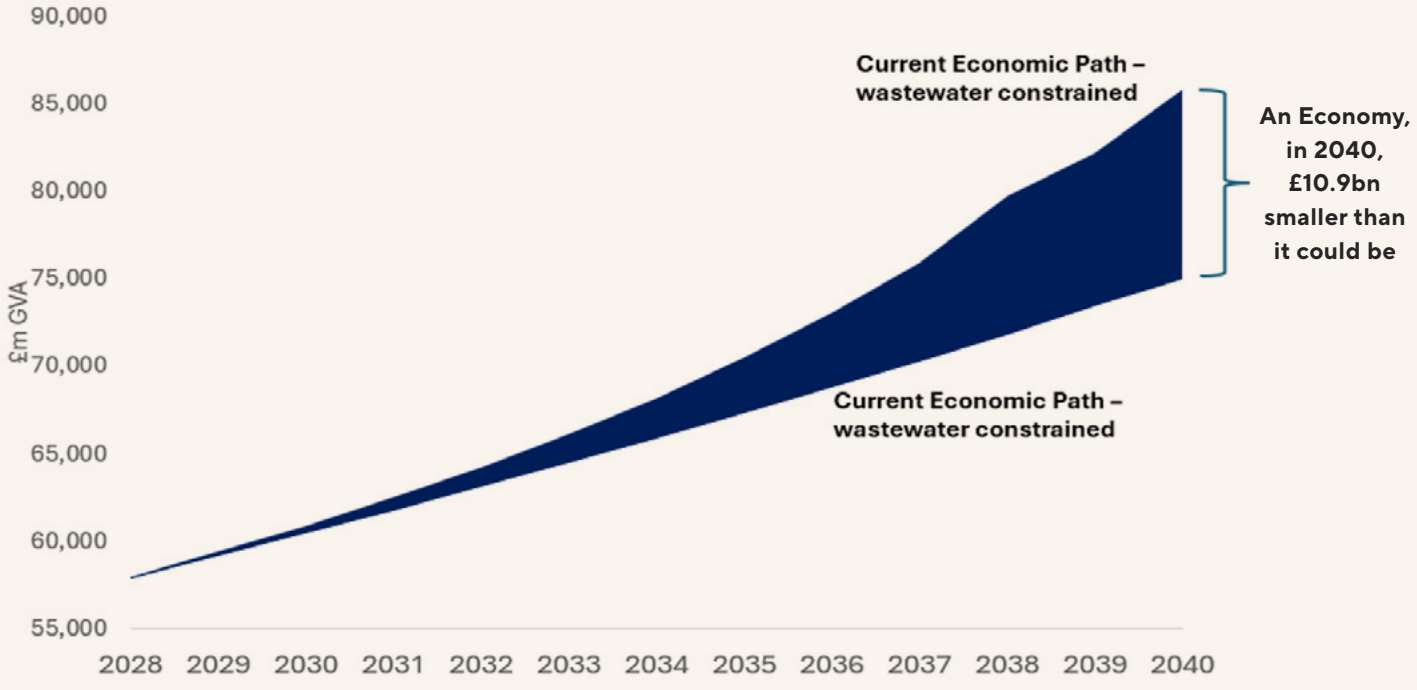


Figure 2.1: Northern Ireland GVA forecast paths, baseline, constrained and success scenario, 2028 to 2040

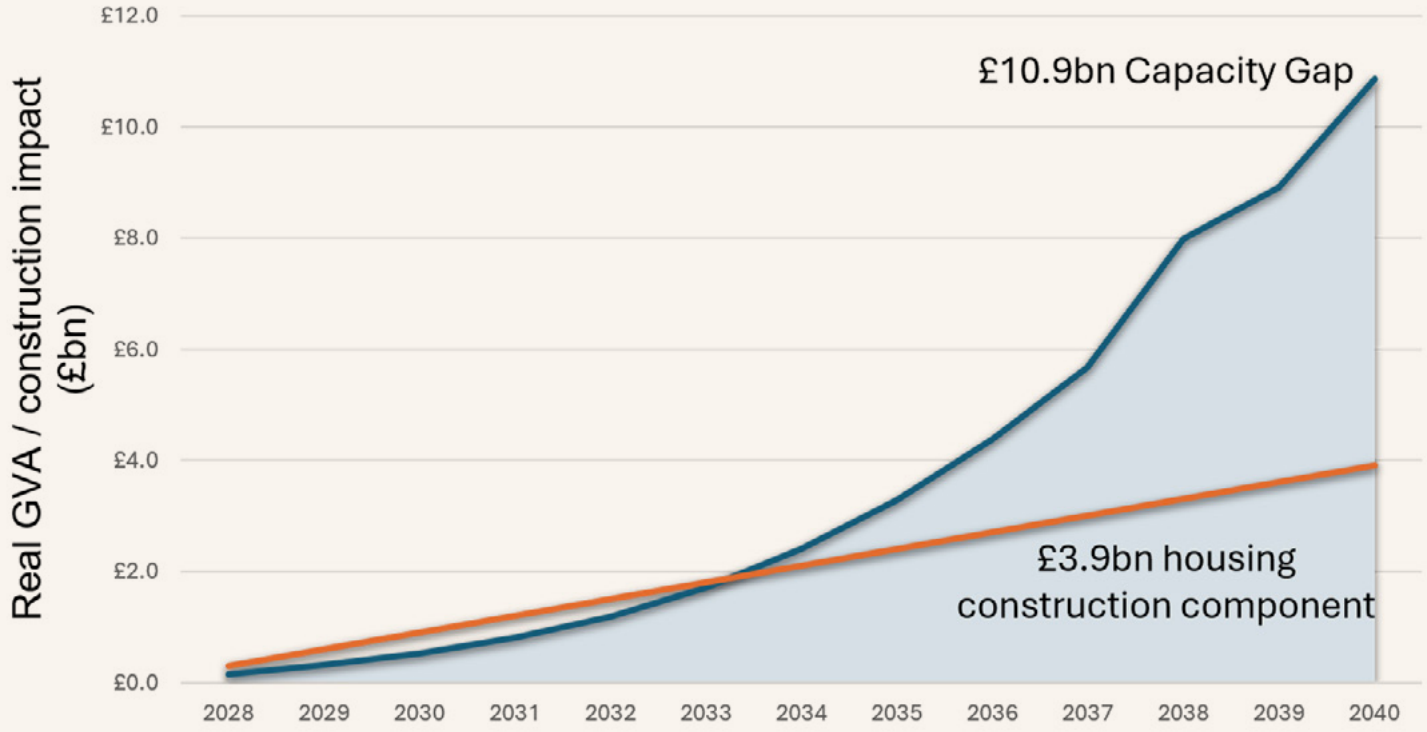


Figure 2.2: Housing within the total impact

The success forecast scenario assumes that the additional wastewater investment required to relieve development constraint is supported through a household levy. The model allows for the levy to reduce household disposable income and consumer spending. It does not therefore assume that the funding mechanism is costless.

At the same time, consumer spending is modelled as part of the wider economic path rather than as a fixed deduction. Over the forecast period, consumer spending is affected not only by the levy, but also by additional employment, wage growth and the wider economic activity associated with enabled development. The model therefore reflects both the near-term spending drag associated with the levy and the medium-term uplift associated with a stronger economy.

They show the estimated economic path associated with levy-funded wastewater recovery, allowing for the interaction between household contribution, consumer spending, employment, wages and development activity over time.

The result is a widening gap between the economy Northern Ireland could build and the economy it risks accepting if wastewater investment remains constrained. By 2040, the model estimates an annual gap in GVA terms between the constrained and success scenarios.

This should not be interpreted as a single lost project or a one-off economic shock. The model illustrates a cumulative effect of development being slowed, diluted or displaced over time, resulting in an economic base that becomes smaller than it could have been. For context, within this model, **households in NI are on average £2,750 per annum worse off that they would otherwise be. This impact grows over time, from £325 per household in 2028, to £3,085 in 2035 and £5,500 in 2040.** By 2040, the model illustrates an economy £10.9 billion smaller than it could be[4].

The housing component of the model is central to this story. The housing construction impact identified in the model should be understood as part of the annual opportunity foregone, not as an additional impact to be added separately to the headline GVA gap. It has been pulled out because it is politically and economically important in its own right, but it remains one component of the wider annual foregone opportunity.

4 Forecasts are not definitive and should be understood as indicative modelled outputs intended to illustrate the likely scale and direction of economic opportunity foregone where wastewater constraints impede development-sensitive activity.

The purpose of highlighting housing is not to double-count the impact. It is to show that the headline economic gap has a direct connection to the everyday pressures facing households and communities. The same infrastructure constraint that suppresses economic growth also limits the delivery of new homes, worsens affordability pressures, constrains social housing delivery and weakens the ability of towns and cities to regenerate.

The model therefore gives quantitative expression to a wider policy reality. Wastewater underinvestment is not just delaying pipes, treatment works and network upgrades. It is delaying the development that depends on them.

Note on Construction Turnover and GVA

GVA measures the net value created in the economy. It is different from turnover, which measures the total value of sales or activity before deducting input costs.

The figures in this report are presented in GVA terms. However, the turnover effect of not building 55,000 homes is significant. Using a standard three-bedroom semi-detached house as the reference point, approximately £10.5 billion of construction turnover is lost to the economy. This should be read as the scale of lost construction activity, not as the net GVA impact.

2.4. Policy meaning

If Northern Ireland continues to fund wastewater infrastructure through short-term, constrained and uncertain allocations, it will continue to ration development capacity. That rationing will appear as slower delivery, reduced density, higher costs, phased development, weaker investor confidence and postponed regeneration.

For politicians, the central issue is therefore not whether wastewater investment is desirable. It is whether Northern Ireland is prepared to accept the economic and social consequences of not funding it properly.

> **“Impact grows over time, from £325 per household in 2028, to... £5,500 in 2040”**

03.

Regional Impacts

CASE STUDY 3: SOCIAL HOUSING (WEST BELFAST)

Development Proposed is mixed tenure residential buildings across three sites delivering 42 residential dwellings (80% Social Housing and 20% Affordable Housing), including a 26-unit apartment building and 16 town houses.

The proposed development is stalled due to insufficient capacity within the existing wastewater network and the presence of failing downstream combined sewer overflow infrastructure identified by NI Water. Progression of the scheme is therefore dependent on major wastewater infrastructure upgrades, which are currently unfunded within the 2021 - 2027 investment period, with no confirmed timeline for resolution.

Foregone Impacts from Construction Phase[1]

£5.5m
Investment Foregone
In the construction of the Proposed Development

30 gross direct jobs
FTE (full time equivalent) jobs forgone on average throughout the construction period (circa 3 years)

Including 140 net direct jobs
FTE jobs supported in Northern Ireland, including 12 in Belfast City

Plus 9 net indirect/induced jobs
FTE jobs forgone in Northern Ireland, including 3 in Belfast City

£3.5m
Economy Boost
Measured in GVA[1], foregone in Northern Ireland during construction, including £2.9m in Belfast City

Foregone Impacts from Operational Phase[1]

Similar employment generation
Occupier relocation would facilitate full residential development with no net loss of employment.

Uplift of £110,000 in domestic rates per annum
With £49,000 retained by Belfast City Council

100% of development made up of Social and affordable housing
80% Social Housing and 20% Affordable Housing tenures

Provide 42 new homes, resulting in the accommodation of about 90 residents
Helping to meet existing demand and reduce pressure on the wider private rented sector

£800,000
Expenditure by residents
Foregone per annum on retail and leisure goods and services, supporting local businesses and boosting economic demand

Forgone capacity up to 7 retail and leisure jobs
Foregone per annum in the wider economy through additional resident expenditure

1 The economic methodology and underlying assumptions are set out in Appendix.
2 GVA (Gross Value Added) measures the value of output created (i.e. turnover) net of inputs used to produce a good or service (i.e. production of outputs). Put simply the GVA is the total of all revenue into businesses, which is used to fund wages, profits and taxes.

3.1. A regional challenge

Wastewater capacity is often discussed through the lens of individual schemes, specific wastewater treatment works or particular localised constraints. That is understandable, because the practical consequences are usually encountered site by site.

However, the evidence points to a wider regional challenge. Wastewater capacity constraints are now affecting the development potential of multiple council areas across Northern Ireland. The impact is not uniform, but nor is it isolated. It is being felt across large urban areas, commuter-belt locations, regional growth centres and towns with identified housing and regeneration need.

This matters for policy. If wastewater constraint were only a narrow localised issue, it could be treated as a project-level delivery problem. The modelling suggests something more significant. It indicates that wastewater capacity is shaping the economic path of places by affecting their ability to accommodate development, capital investment and future growth.

3.2. The opportunity cost is spatially uneven

The council-level results show that the estimated opportunity foregone is not distributed evenly across Northern Ireland. This reflects differences in economic scale, historic growth trends, sector composition, development exposure, GFCF dependency and the assumed intensity of wastewater constraint.

In simple terms, places with a larger development-sensitive economy, stronger growth potential or higher dependency on capital formation are more exposed to the economic consequences of infrastructure constraint. Where wastewater capacity acts as a brake on housing, regeneration or employment land, the effect is not simply a delay to individual projects. It can also mean a lower economic trajectory for the place as a whole.

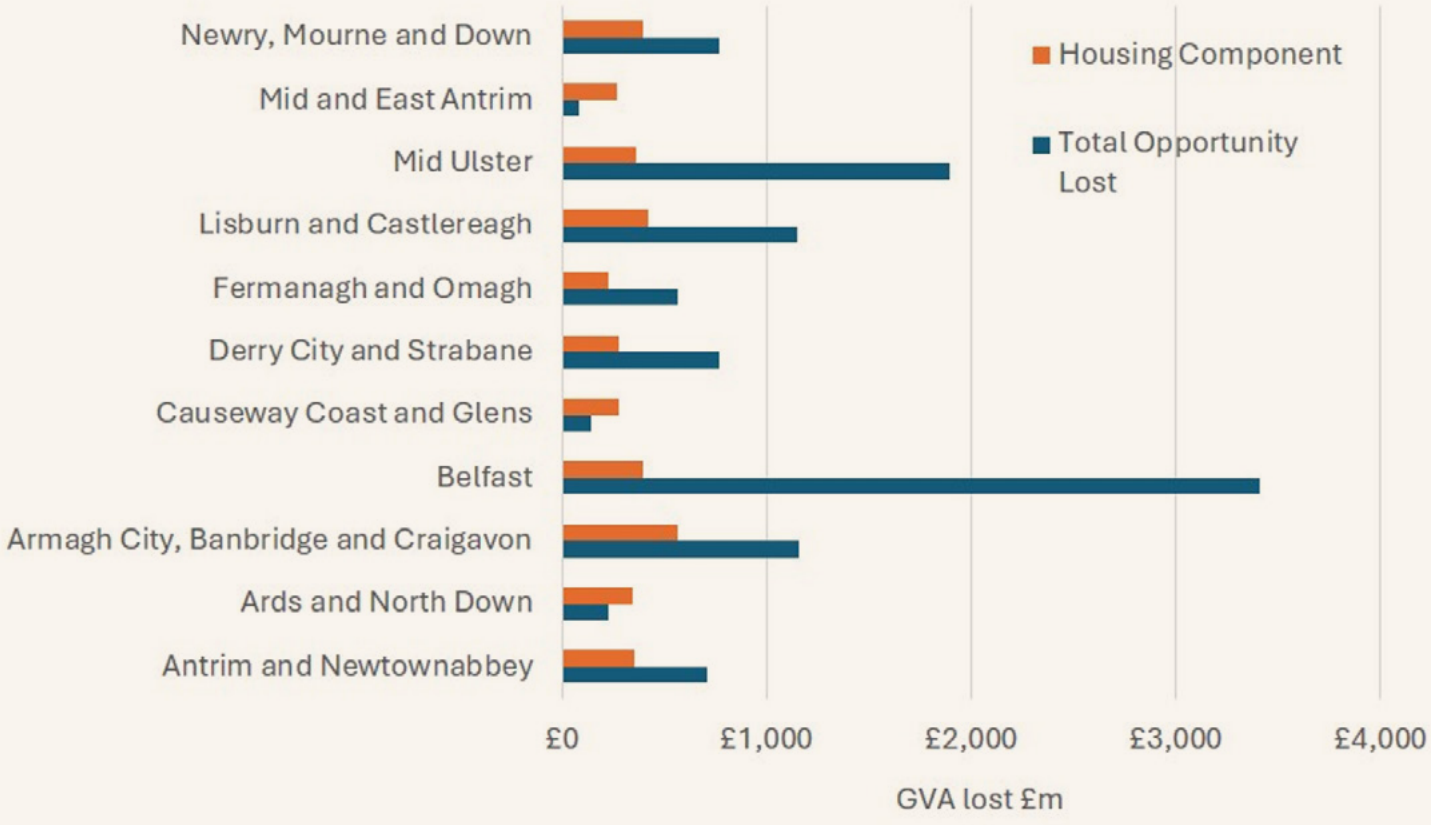


Figure 3.1: Cumulative opportunity foregone by council, 2040

The model identifies the largest estimated 2040 total opportunity gap in Belfast, followed by Mid Ulster, Armagh City, Banbridge and Craigavon, Lisburn and Castlereagh, Newry, Mourne and Down, Derry City and Strabane, and Antrim and Newtownabbey.

The chart also separates out the housing component within the wider opportunity foregone. This is important because the total economic gap and the housing component do not follow exactly the same pattern. Belfast has the largest overall opportunity cost, reflecting the scale and concentration of its economy. However, the housing-related element is more widely distributed, with significant estimated impacts across Armagh City, Banbridge and Craigavon, Lisburn and Castlereagh, Belfast, Newry, Mourne and Down, Mid Ulster, Antrim and Newtownabbey, and Ards and North Down, reflecting NI Water constraints.

Belfast has the largest economic exposure: Belfast records by far the largest estimated opportunity gap in the model. This reflects the city's scale and its role within the regional economy. Belfast contains a significant concentration of development activity, including city centre residential development, regeneration schemes, employment space, higher education activity, public sector assets and major mixed-use opportunities.

The economic significance of wastewater capacity in Belfast is therefore amplified by scale. Constraint in Belfast does not only affect local delivery. It affects the performance of the wider Northern Ireland economy, given the city's role as the principal employment, education, commercial and investment centre.

The chart also shows that Belfast's total estimated opportunity lost is much larger than its housing component alone. This is an important finding. It suggests that, while housing is a significant part of the development constraint, the wider economic cost in Belfast also reflects the city's broader development and investment role. Wastewater capacity therefore matters not only for homes, but for the city's ability to absorb commercial, institutional, regeneration and employment-related growth.

In a dense urban setting, the issue is not simply whether land exists or whether there is market interest. The issue is whether the infrastructure beneath the city can support the level of housing, regeneration and employment growth expected of a modern regional capital. Where capacity is constrained, the consequences are likely to be felt through slower residential growth, more difficult regeneration delivery, higher project costs and weaker confidence in the pace at which the city can accommodate investment.

Mid Ulster and Armagh City, Banbridge and Craigavon demonstrate development pressure beyond Belfast: After Belfast, the chart points to material opportunity costs in Mid Ulster and Armagh City, Banbridge and Craigavon. This reinforces the point that wastewater constraint is not only a metropolitan issue.

These council areas play important roles in Northern Ireland's wider economic geography. They contain growth towns, industrial and employment locations, housing demand pressures and development corridors that are central to regional balance. They are also places where physical development, business expansion, construction activity and land availability matter directly to future economic performance.

In these areas, wastewater capacity constraints risk weakening the ability of local economies to convert growth potential into delivered development. The consequence may not be as visible as a major city centre scheme being delayed, but it can be equally important over time. Housing delivery, employment site activation, commercial expansion and town centre regeneration all depend on the infrastructure capacity to support growth.

The chart also suggests different local profiles. Mid Ulster shows a large estimated opportunity cost relative to its housing component, indicating that the wider economic exposure extends beyond housing alone. Armagh City, Banbridge and Craigavon shows both a significant housing component and a substantial total opportunity cost, reflecting the combined importance of housing growth, development activity and economic scale.

> **"Wastewater capacity acts as a brake on housing, regeneration and employment land, the effect is not simply a delay to individual projects"**

Lisburn and Castlereagh, Newry, Mourne and Down, and Antrim and Newtownabbey: housing markets and development corridors: Lisburn and Castlereagh, Newry, Mourne and Down, and Antrim and Newtownabbey also show material estimated opportunity costs. These areas are significant because they sit within, or interact strongly with, wider regional housing and labour markets.

In these council areas, wastewater constraint has particular relevance to housing delivery and development corridors. Demand is shaped by proximity to employment centres, transport links, household formation, commuter patterns and, in the case of Newry, Mourne and Down, wider cross-border dynamics. Where the delivery of new homes is impeded, the effects can spread beyond the immediate council area through affordability pressures, longer commuting patterns and reduced labour mobility.

The policy point is that housing constraints are not contained neatly within administrative boundaries. A failure to accommodate housing in one area can affect labour market access, household costs and economic opportunity across a wider functional region.

Derry City and Strabane: regional balance and the North West: Derry City and Strabane's estimated opportunity gap remains significant in policy terms. The North West has long been central to discussions about regional balance, inclusive growth and the need to strengthen economic opportunity beyond the Belfast metropolitan area. In this context, wastewater capacity should be viewed as part of the enabling infrastructure required to support the North West's development potential. Housing, regeneration, education, tourism, business growth and cross-border economic activity all require basic infrastructure capacity.

A constrained wastewater system risks weakening the delivery of wider policy ambitions for the North West. It can slow development, reduce investor confidence and make it more difficult to translate strategic plans into physical delivery.

3.3. The regional picture strengthens the policy case

The regional pattern points to a more important conclusion than the ranking of council areas alone. Wastewater constraint is now shaping the growth capacity of places. It is affecting where homes can be built, where firms can expand, where employment land can be brought forward and where regeneration plans can move from strategy into delivery.

The effect is not the same everywhere and has significant relevance tothe economic ambition of regional balance. In Belfast, the issue is bound up with the performance of the regional capital and its ability to absorb new housing, employment, higher education, commercial and mixed-use development. In Mid Ulster and Armagh City, Banbridge and Craigavon, the issue is more closely linked to growth towns, industrial activity and capital-intensive expansion. In commuter-belt and corridor locations, the pressure is felt through housing delivery, affordability and labour market access. In the North West, it has a direct bearing on regional balance and the credibility of long-term regeneration ambitions.

This is why the model should not be read simply as a list of places with wastewater problems. The largest opportunity costs arise where capacity constraints meet economic scale, development pressure and the potential for future growth. A constraint in one location may delay a housing scheme. In another, it may limit the activation of employment land, weaken a town centre regeneration plan or make a strategic investment harder to secure. The economic cost is shaped by what the infrastructure constraint prevents from happening.

The policy implication is clear. Wastewater is no longer a narrow utility issue to be dealt with scheme by scheme or treatment works by treatment works. It has become part of the economic infrastructure of the region. If capacity remains constrained, Northern Ireland will continue to ration development in practice, even where policy says it wants more homes, more investment, stronger places and better regional balance.

04.

Capital Rationing or Capital Recovery?

CASE STUDY 4: INDUSTRIAL AND MANUFACTURING FACILITY (LISBURN)

Development proposed comprises a predominantly vacant employment-zoned landholding (with one building complete), including a live planning application site and an indicative layout demonstrating development potential. The assessment considers five Class B2 buildings, comprising one in planning and four in future phases, totalling c.21,300 sq.m.

The proposed development is stalled due to insufficient capacity within the existing wastewater network and the presence of failing downstream combined sewer overflow infrastructure identified by NI Water. Progression of the scheme is therefore dependent on major wastewater infrastructure upgrades, which are currently unfunded within the 2021 - 2027 investment period, with no confirmed timeline for resolution.

Foregone Impacts from Construction Phase[1]

£20.8m
Investment Foregone
In the construction of the Proposed Development

105 gross direct jobs
FTE (full time equivalent) jobs forgone on average throughout the construction period (circa 3 years)

Including 80 net direct jobs
FTE jobs supported in Northern Ireland, including 50 in Lisburn & Castlereagh (3-year construction period)

Plus 40 net indirect/induced jobs
FTE jobs forgone in Northern Ireland, including 12 in Lisburn & Castlereagh (3-year construction period)

£13.3m
Economy Boost
Measured in GVA[1], foregone in Northern Ireland during construction, including £11.0m in Lisburn & Castlereagh

Foregone Impacts from Operational Phase[1]

530 on-site jobs per annum

400 net direct jobs per annum
FTE jobs supported in Northern Ireland, including 240 in Lisburn & Castlereagh

200 net indirect/induced jobs per annum
FTE jobs supported in Northern Ireland, including 60 in Lisburn & Castlereagh

£43.3 million
Economy Boost
output per annum, including £11 million in Lisburn & Castlereagh

Occupational variety
A range of managerial, professional, technical, skilled and elementary jobs supported

£410,000
Non-Domestic rates
Foregone per annum, including £190,000 retained each year by Lisburn & Castlereagh City Council

£9.8 million
Direct and indirect wages
Foregone per annum for Lisburn & Castlereagh and Northern Ireland residents

1 The economic methodology and underlying assumptions are set out in Appendix.
2 GVA (Gross Value Added) measures the value of output created (i.e. turnover) net of inputs used to produce a good or service (i.e. production of outputs). Put simply the GVA is the total of all revenue into businesses, which is used to fund wages, profits and taxes.

4.1. An erosion of confidence

The evidence set out in this report points to a clear conclusion. Northern Ireland's wastewater infrastructure is no longer only a technical, environmental or utility management issue. It is now a core economic and housing delivery issue.

The current funding model for NI Water is producing a rationed outcome. Capacity is constrained. Housing is impeded. Development is delayed. Environmental improvement is made harder. Economic opportunity is foregone. This does not mean that every project stops. The effect is more subtle and, for that reason, more precarious. Development takes longer. Sites are phased. Costs rise. Density is reduced. Investment confidence weakens. Some activity is displaced. Some opportunities are lost entirely. Over time, those effects compound into a lower economic path as confidence erodes.

The policy question is therefore no longer whether wastewater infrastructure matters. That question has been answered. The question is whether Northern Ireland is prepared to fund the system at a level consistent with its ambitions for housing, growth, regeneration and environmental recovery.

4.2. The current path is managed rationing

Continuing broadly as now results in wastewater investment remaining dependent on constrained public allocations, short-term funding decisions and periodic interventions to relieve the most pressing local bottlenecks.

That approach carries significant economic and social costs. It means development capacity is rationed through delay, uncertainty and constraint with the housing system carrying a lot of the consequences of underinvestment in infrastructure. Bluntly, it means the economy moves forward in first gear with the handbrake on.

Managed rationing also creates a credibility problem. Northern Ireland cannot credibly seek to accelerate housing delivery, attract investment, regenerate town and city centres and improve environmental outcomes if the infrastructure required to support those ambitions is not funded.

The risk is that wastewater becomes a practical veto on delivery. Planning strategies, housing targets, regeneration plans and economic ambitions, indeed Programme for Government ambitions, may remain in place, but the physical capacity to deliver them is constrained.

4.3. The cost of indecision

The central finding of this report is that the cost of further delay or inaction is not a hypothetical. It is demonstrable in the homes that are impeded, investment that is deferred and economic opportunity that is foregone.

Currently, around 55,000 homes are understood to be impeded by some level of wastewater capacity constraints. Beyond housing, other capital expenditure ambitions fall away. The modelling undertaken for this report estimates a 2040 annual GVA opportunity gap of approximately £10.9 billion between the success forecast and the constrained forecast. These figures are different expressions of the same underlying problem: Northern Ireland is trying to pursue growth without funding one of the core infrastructure systems required to deliver them.

Northern Ireland can continue with managed rationing and accept the consequences. Or it can move to funded recovery and treat wastewater infrastructure as a foundation for housing, investment, environmental improvement and regional growth.

4.4.Recovery requires a funded, multi-year approach

A funded recovery approach would treat wastewater infrastructure as enabling economic infrastructure and fund it accordingly. A credible recovery approach would need to be multi-year, transparent and delivery-focused. It would need to move beyond short-term allocations and provide sufficient certainty for NI Water, departments, councils, developers, housing providers and investors to plan with confidence.

This was a critical finding of the Northern Ireland Fiscal Council's report, which underscored the unsustainable nature of the Executives current customer subsidy, and that funding is increasingly dependent on monitoring rounds and consistently falls short of regulatory recommendations, limiting the wastewater network's capacity to handle new housing developments and commercial projects.

The WIG group's previous report, proposal introduced the suggestion of a household infrastructure levy, supported by SUDs, voluntary developer contributions, and called for the establishment of an Infrastructure Transformation Fund to kick-start construction work and provide certainty to engineering and construction contractors, on identified wastewater treatment plant and combined sewer overflow (CSO) priority projects. Such a fund, could operate under similar terms of other regional growth and city investment deals, committing funding for a defined period for specified works.

Prioritise necessary investment in water infrastructure, targeted to areas of greatest need, to protect the environment, facilitate building of homes and economic development, was also a key recommendation of the IoD (NI) *Getting infrastructure and investment back on track report,* and echoed our previous call for Introduce an infrastructure levy, collected via the rates system and ring-fenced for capital investment in essential infrastructure.

Indeed, in contrast to the 5% increase in household regional rates proposed in the draft multi-annual Budget, when adjusted for the reduced estimated shortfall in PC28 resulting from the draft multi-annual Budget of £1.29bn, our proposed levy would apply less pressure on households. Assuming a baseline allocation to NI Water of £321m per annum, if the draft Multi-Annual budget was implemented there would be a notable decrease in the average levy to £65 per household per annum - **or £1.25 per week** - previously it was anticipated to average £100 per household per annum. On these updated figures, the borrowing repayment of our proposed levy would fall to £55.9m a year.

Whatever route forward is chosen, increased household rates, alternative sources of funding, or a dedicated ringfenced infrastructure levy or a combination of measures, it is clear a decision must be made quickly, and in tandem with identifying immediate opportunities for prioritised tactical intervention across the wastewater system. This could be supported by another IoD recommendation, and the convening of *"comprehensive review of alternative arrangements, led by suitably qualified experts as recommended by the NI Audit Office in 2024"* , or as we have sought a Wastewater Working Group facilitating ongoing engagement between the construction and economic sectors, NI Water, DfI and DAERA and their other agencies, to pursue agreement on both tactical and strategic interventions.

Recovery requires a co-ordinated multi-annual approach, and clear transparency and engagement with the public as to the value of this investment, to ensure clean healthy water, a cleaner environment and to enable development, housing and jobs.

05. Conclusion

CASE STUDY 5: MANUFACTURING PLANT (SOUTH DOWN)

The proposed development comprises a manufacturing plant building of approximately 47,000 sq.m on a greenfield site.

The proposed development is stalled due to insufficient capacity within the existing wastewater network and the presence of failing downstream combined sewer overflow infrastructure identified by NI Water. Progression of the scheme is therefore dependent on major wastewater infrastructure upgrades, which are currently unfunded within the 2021 - 2027 investment period, with no confirmed timeline for resolution.

Foregone Impacts from Construction Phase[1]

£90m
Investment Foregone
In the construction of the Proposed Development

450 gross direct jobs
FTE (full time equivalent) jobs forgone on average throughout the construction period (circa 1.5 years)

Including 340 net direct jobs
FTE jobs supported in Northern Ireland, including 300 in Newry, Mourne and Down (1.5 years of construction period)

Plus 170 net indirect/induced jobs
FTE jobs forgone in Northern Ireland, including 80 in Newry, Mourne and Down (1.5 years of construction period)

£57.4m
Economy Boost
Measured in GVA[1], foregone in Northern Ireland during construction, including £49.8m in Newry, Mourne and Down

Foregone Impacts from Operational Phase[1]

1,110 on-site jobs per annum

830 net direct jobs per annum
FTE jobs supported in Northern Ireland, including 750 in Newry, Mourne and Down

415 net indirect/induced jobs per annum
FTE jobs supported in Northern Ireland, including 185 in Newry, Mourne and Down

£90.4 million
Economy Boost
output per annum, including £74 million in Newry, Mourne and Down

Occupational variety
A range of managerial, professional, technical, skilled and elementary jobs supported

£860,000
Non-Domestic rates
Foregone per annum, including £430,000 retained each year by Newry, Mourne and Down Council

£41.2 million
Direct and indirect wages
Foregone per annum for Newry, Mourne and Down and Northern Ireland residents and Northern Ireland

1 The economic methodology and underlying assumptions are set out in Appendix.
2 GVA (Gross Value Added) measures the value of output created (i.e. turnover) net of inputs used to produce a good or service (i.e. production of outputs). Put simply the GVA is the total of all revenue into businesses, which is used to fund wages, profits and taxes.

5.1. Conclusion

The central point of this report is that wastewater constraints are actively hampering Northern Ireland's economic ambitions. They are restricting housing delivery, delaying investment, constraining business expansion and limiting the ability of towns and cities to realise their growth potential. Where wastewater infrastructure cannot accommodate additional development, economic opportunities are postponed, scaled back or lost altogether.

Around 55,000 homes are understood to be impeded by some level of wastewater capacity constraints. This is happening at a time of acute housing need, rising affordability pressure and continuing concern about the pace of new housing delivery. The consequence is not confined to housing. Delayed homes mean delayed construction activity, weaker labour mobility, slower regeneration and reduced confidence in the ability of places to accommodate growth.

The modelling undertaken for this report gives scale to that problem. It does not suggest that wastewater constraint creates a single economic shock. It suggests something more persistent: a lower development path – an economy moving in first gear with the handbrake on. By 2040, the economy we are heading towards is £10.9 billion smaller than the economy we could have if we invested in wastewater. Continuing wastewater constraint means accepting a smaller economy than Northern Ireland could otherwise support, and each household will be £5,500 less well off.

Continuing with the existing approach means accepting managed rationing. The alternative is to treat wastewater infrastructure as enabling economic infrastructure and fund it accordingly through a credible, multi-year recovery approach, with clear investment requirements, a sustainable funding mechanism, protection for those least able to pay, ringfenced delivery and transparent reporting on what is being unlocked.

On the evidence set out in this report, wastewater capacity has become one of the foundations of Northern Ireland's economic future. If it remains underfunded, the cost will be measured in lost economic performance and each NI household materially worse off.

> **“By 2040, the economy we are heading towards is £10.9 billion smaller... and each household will be £5,500 less well off”**

Appendix 1

Technical Annex (OCO Global)

1. Purpose of the model

This annex summarises the method used to estimate the economic opportunity foregone associated with wastewater infrastructure constraints in Northern Ireland.

The purpose of the model is not to produce a project-by-project cost-benefit appraisal. It is designed to provide a regional, policy-relevant estimate of the economic gap that may emerge where wastewater capacity constrains housing delivery, regeneration, employment land activation and other development-sensitive activity.

The model therefore estimates the difference between two future economic paths:

- a constrained path, where wastewater capacity continues to limit development-sensitive growth; and
- a success path, where wastewater constraints are progressively reduced and development activity is able to move closer to its underlying potential.

The difference between these two paths is interpreted as the annual economic opportunity foregone. The modelling is undertaken at council level and then aggregated to Northern Ireland level.

2. Model structure

The model uses council-level Gross Value Added (GVA) as the primary measure of economic output. Historic real GVA trends are used to establish a baseline growth path for each of Northern Ireland's eleven local government districts.

The model then identifies the share of each council economy that is more likely to be affected by wastewater infrastructure constraints. This is described as the development-sensitive share of the economy. It reflects sectors and activities where growth is more closely linked to physical development, construction, housing, regeneration, employment space and capital investment.

A wastewater constraint factor is then applied to this development-sensitive share. The model assumes that wastewater constraints do not suppress all economic activity. Instead, they affect the portion of growth that depends on new development capacity. This is important because the impact of wastewater underinvestment is not felt evenly across the economy. It is most relevant where new connections, new buildings, housing delivery or serviced development land are required.

The core model logic is:

Constrained growth = baseline growth × (1 - H)

Where H is the constraint adjustment applied to the development-sensitive share of growth.

The constraint adjustment combines four elements:

- the share of the local economy exposed to development-sensitive activity;
- the intensity of the wastewater constraint;
- a haircut factor, to avoid assuming that all exposed growth is lost; and
- a Gross Fixed Capital Formation dependency index.

The model then produces a constrained forecast for each council. A success forecast is also produced, representing the path that could be achieved if wastewater constraints were progressively addressed and development activity moved closer to its baseline potential. The opportunity foregone is the difference between the success forecast and the constrained forecast.

3. Role of Gross Fixed Capital Formation

Gross Fixed Capital Formation (GFCF) is used to strengthen the link between infrastructure capacity and economic growth.

GFCF measures investment in fixed assets such as buildings, infrastructure, machinery and equipment. In the context of this model, it is used as a proxy for the extent to which future economic performance in a council area is linked to physical development and capital investment.

This is relevant because wastewater constraints are most likely to affect places where growth depends on development capacity. A council area with higher development-capital intensity is more exposed to wastewater constraint than an area where growth is less dependent on new housing, new commercial space or physical expansion.

The model therefore applies a council-level GFCF dependency index. This compares each council's development-related GFCF intensity with the Northern Ireland average. To avoid extreme results, the index is bounded using a floor and cap. This ensures that the model recognises differences in capital dependency between councils without allowing any one factor to dominate the results.

The GFCF linkage improves the policy relevance of the model. It means the analysis is not simply applying a flat wastewater adjustment across Northern Ireland. Instead, it reflects the fact that infrastructure constraint matters more in places where growth is more dependent on development, construction, housing and capital formation.

4. Forecast scenarios

The model compares three forecast paths.

The baseline forecast applies historic real GVA growth trends to each council. This provides a reference point for what the economy might be expected to do in the absence of an additional wastewater constraint.

The constrained forecast applies the wastewater constraint adjustment to the positive growth component of development-sensitive activity. This reflects the principle that wastewater capacity constraints suppress or defer part of the growth that would otherwise occur.

The success forecast represents a stronger growth path in which wastewater constraints are progressively addressed. It is not a theoretical maximum. It is intended to reflect the economic path that could be achieved if infrastructure capacity were improved and development-sensitive activity were able to move closer to its underlying potential.

The success forecast scenario assumes that the additional wastewater investment required to relieve development constraint is supported through a household levy. The model allows for the levy to reduce household disposable income and consumer spending. It does not therefore assume that the funding mechanism is costless.

At the same time, consumer spending is modelled as part of the wider economic path rather than as a fixed deduction. Over the forecast period, consumer spending is affected not only by the levy, but also by additional employment, wage growth and the wider economic activity associated with enabled development. The model therefore reflects both the near-term spending drag associated with the levy and the medium-term uplift associated with a stronger economy.

The published results reflect the combined effect of these interacting channels within the modelling framework and should be interpreted as a strategic assessment of the economy-wide implications of a levy-funded recovery scenario.

The model reports results over the period to 2040, with particular emphasis on the widening gap from 2027 onwards. By 2040, the model estimates that the annual GVA gap between the success forecast and the constrained forecast is approximately £10.9 billion.

This figure should be interpreted as the estimated annual economic opportunity foregone in 2040. It is not a one-off loss, and it should not be added to previous annual figures as if it were a cumulative net present value calculation.

5. Housing construction component

The model separately identifies a housing construction component within the annual opportunity foregone.

Construction firms and workers may undertake alternative projects, meaning that reduced housing delivery does not necessarily translate into an equivalent reduction in overall construction activity. However, wastewater constraints influence what can be built, where it can be built and when it can be built. As a result, while some construction activity may be displaced rather than lost entirely, the constraint still limits housing delivery and associated regeneration and economic development opportunities. Under the success forecast scenario, investment in wastewater infrastructure enables additional housing construction and related development activity, supporting stronger growth in the construction sector over the forecast period.

This reflects the importance of housing within the overall development constraint. Around 55,000 homes are understood to be impeded by some level of wastewater capacity constraints. This is a central policy issue because housing delivery is linked to affordability, social housing need, labour mobility, construction activity and regeneration.

The housing construction impact has been pulled out within the model because it is economically and politically important. However, it should be interpreted carefully. It is part of the annual opportunity foregone, not an additional impact to be added separately to the headline GVA gap.

The housing impact within the model is not dependent solely on migration. Additional housing increases economic capacity through a number of channels, including household formation, labour mobility, worker retention and the ability of firms to access labour in areas of demand. Increased housing supply may also help to ease affordability pressures. Migration can contribute to these outcomes, but it is only one of several mechanisms through which additional housing supports GVA.

In practical terms, the housing component helps explain the nature of the wider economic gap. Wastewater constraints affect output partly because they delay or reduce housing-related construction activity. They also affect the wider economy through reduced development, weaker investment, slower regeneration and constrained employment space.

The analysis focuses specifically on wastewater infrastructure because it is currently a binding constraint on development in a number of locations. The modelling should not be interpreted as suggesting that wastewater infrastructure is the only factor influencing future growth or development capacity. Population and economic growth can increase demand for a range of supporting infrastructure and public services, including transport, education and healthcare. Addressing wastewater constraints is therefore one component of enabling sustainable growth and does not remove the need for continued planning and investment across other infrastructure and service areas. The purpose of the analysis is to assess the economic implications of relieving wastewater constraints, rather than to provide a comprehensive assessment of all infrastructure requirements associated with future growth.

6. Interpretation and use

The model should be understood as an indicative policy model rather than a scheme-level appraisal.

It is designed to support strategic decision-making by estimating the broad scale of economic opportunity that may be foregone if wastewater constraints continue to impede development. It does not replace detailed engineering assessment, project appraisal, investment planning or regulatory analysis.

The results should therefore be interpreted as an estimate of direction and scale. They show that wastewater underinvestment can create a material and widening economic gap. They also show that the effect is not evenly distributed across Northern Ireland. The largest estimated opportunity costs arise in places where economic scale, development exposure, growth potential and capital dependency combine most strongly.

The model's main value is that it links wastewater infrastructure to the wider economy in a transparent and policy-relevant way. It demonstrates that the issue is not only about environmental compliance or utility management. It is also about housing delivery, regional development, private investment and the economy Northern Ireland is able to build.

The central conclusion from the model is that continuing wastewater constraint creates a lower economic path. The cost is not always visible as a single cancelled project. It appears through delayed homes, slower regeneration, reduced development capacity and weaker growth over time. By comparing the constrained and success paths, the model provides an estimate of the economic opportunity that could be unlocked through a more credible and sustained approach to wastewater infrastructure investment.

Appendix 2

Technical Annex (Turley Economics)

1. Case Studies Economic Methodology

Turley Economics has undertaken independent economic assessments to estimate local and Northern Ireland economic benefits for 5 case studies. The assessments have been prepared with reference to published guidance on standard economic impact methodologies and recognised industry best practice.

The assessments are informed by the Home & Communities Agency's [1] (HCA, now known as Homes England) Additionality Guide1 and Employment Density Guide[2] and draws on a range of published statistical data sources, including the NISRA 2021 Census[3] and ONS. Where relevant, this has been supplemented by information provided by the Applicant.

For each case study, a local impact area has been defined to assess the extent to which benefits are retained locally, as well as at the wider Northern Ireland level.

2. Additionality Assumptions

The assessment applies standard additionality factors to estimate the net additional economic impact of the Proposed Development. These comprise deadweight, leakage, displacement and multiplier effects.

Deadweight refers to the economic outcomes that would be expected to occur in the absence of the Proposed Development.

Leakage reflects the proportion of economic benefits, including employment, that may be taken up by people or businesses outside the local impact area or outside Northern Ireland. This reduces the level of benefit retained within the target area. Leakage assumptions are informed by NISRA Census 2021 Origin and Destination Workplace data.

Displacement captures the extent to which the Proposed Development may shift existing jobs, activity or investment from elsewhere within the target area to the Site, rather than generating wholly additional economic activity. In line with the HCA Additionality Guide, and recognising that some displacement may occur, a low displacement rate of 25% has been applied at both the local impact area and Northern Ireland scales.

Multiplier Effects capture the wider economic benefits generated through supply chain expenditure and employee spending in the local economy. In line with the HCA Additionality Guide, a multiplier of 1.25 has been applied at the local impact area level, increasing to 1.5 at the Northern Ireland level.

3. Employment and GVA Impacts

The assessment estimates the potential employment and productivity impacts arising from the Proposed Development. These are presented in terms of Full-Time Equivalent (FTE) jobs and Gross Value Added (GVA) (productivity).

Gross FTE job creation has been estimated using average turnover per FTE employee in Northern Ireland's construction industry, based on ONS Business Population Estimates 2025 for Northern Ireland.

GVA impacts have been estimated using average GVA per FTE employee for the relevant sectors considered in each case study, based on Experian economic data for 2025.

4. Wider Data Sources and Supporting Assumptions

A range of additional assumptions and data sources have been applied to support the assessment. These include:

- Average household size and relationships, informed by NISRA Census 2021 data on accommodation type, usual residents and households.
- The proportion of residents who are economically active and in employment, informed by NISRA Census 2021 Economic Activity by Sex data.
- Income data for Northern Ireland residents and by occupation type, sourced from the ONS Annual Survey of Hours and Earnings.
- Turnover per employee in the retail, arts, entertainment and recreation, and accommodation and food services sectors, used to estimate the number of jobs supported and/or generated. This is informed by the Department for Business and Trade 2025 Business Population Estimates for Northern Ireland.
- Domestic and non-domestic rates, informed by the Department of Finance 2025 Rate Poundages.

1 Homes & Communities Agency (2014) Additionality Guide, 4th Ed.
2 Homes & Communities Agency (2015) Employment Density Guide, 3rd Ed.
3 Northern Ireland Statistics and Research Agency (2023) 2021 Census: Northern Ireland

- Average spend per overnight visitor, sourced from NISRA Northern Ireland Tourism 2024.
- Accommodation expenditure ratios, sourced from VisitBritain's 2025 Great Britain Domestic Overnight Trips dataset. The Great Britain benchmark has been used in the absence of equivalent data for Northern Ireland.
- Room occupancy rates, source from NISRA 2024 Northern Ireland Hotel Occupancy Rates by Local Government District 2014-2024. Assumption that 50% of rooms are occupied by one person and 50% are occupied by two people.
- For PBSA impacts, it has been assumed that 50% of international students live in PBSA, and that only these students generate additional leisure and retail expenditure. It has also been assumed that all students receive at least two visits per year from friends or relatives.

5. Case Study Information

Further details on the sources and assumptions applied to each case study are set out below.

CASE STUDY 1: MIXED RESIDENTIAL DEVELOPMENT (NORTH BELFAST)

Source of information: Graham Group.

Construction costs were estimated at £80 million, with an upper and lower sensitivity range of 10%.

Deadweight has not been applied, as the site is greenfield and is therefore assumed not to support existing operational activity.

The operational use is assumed to be Use Class A1, Retail.

CASE STUDY 2: PURPOSE-BUILT STUDENT ACCOMMODATION (SOUTH BELFAST)

Source of information: Turley Planning.

Deadweight has been considered in relation to the existing hotel's economic and tourism impacts. However, the overall level of employment generated would likely have remained broadly similar, although these roles would shift from hotel-based positions to PBSA related staff.

CASE STUDY 3: SOCIAL HOUSING (WEST BELFAST)

Source of information: Turley Planning.

Construction cost figure estimated by Turley Economics based on a £/m² benchmarking parameter derived from the Building Cost Information Service (BCIS) dataset.

Deadweight has not been applied, as the existing business is being relocated rather than discontinued, and the overall level of employment generated by the current business is expected to remain broadly similar.

CASE STUDY 4: INDUSTRIAL AND MANUFACTURING FACILITY (LISBURN)

Source of information: Turley Planning.

Construction cost figure estimated by Turley Economics based on an average of the £/m² benchmarking parameter derived from the BCIS dataset, and of the and the estimated outturn cost of the existing building on site.

Deadweight has not been applied, as the site is greenfield and is therefore assumed not to support existing operational activity.

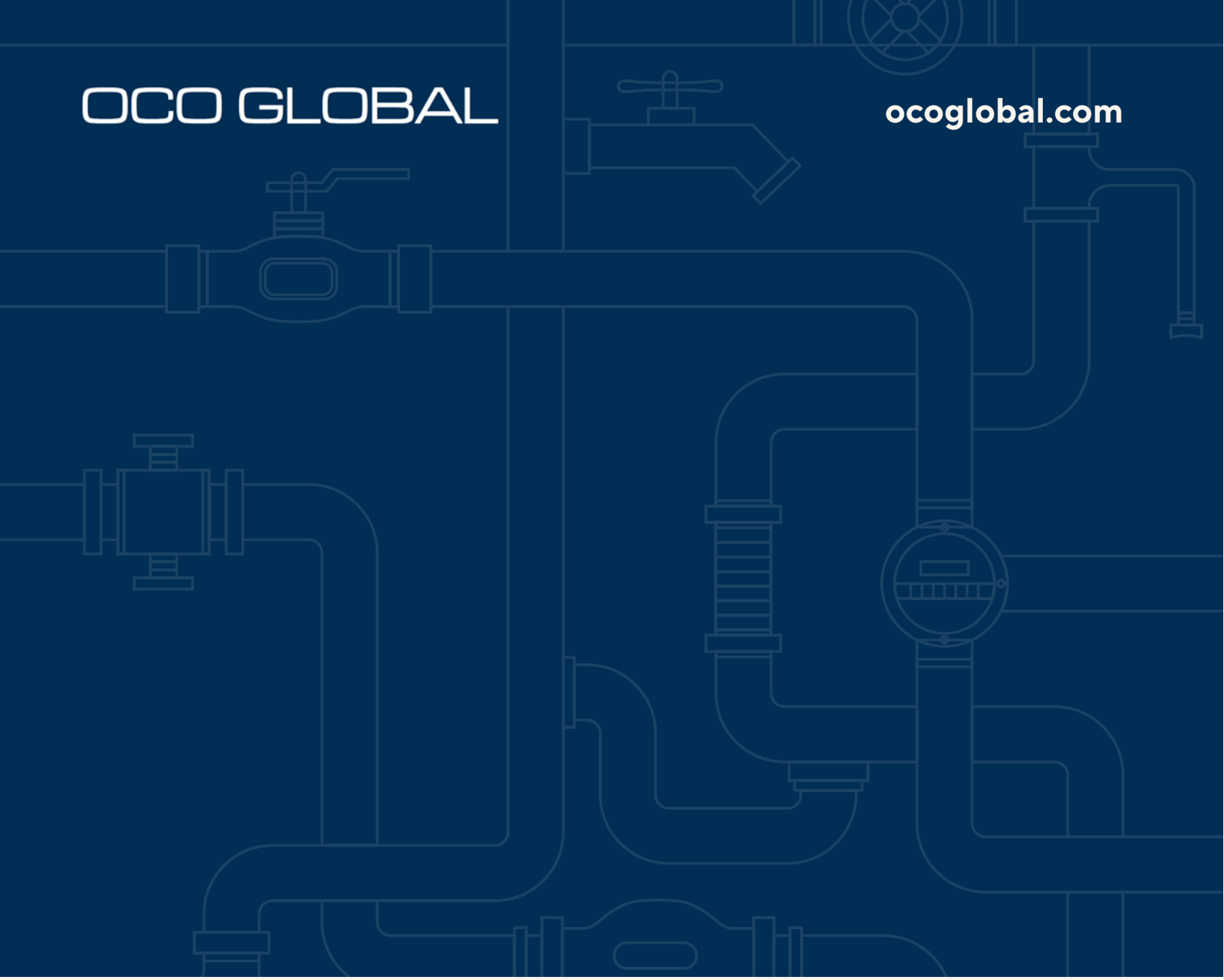
The operational use is assumed to be Use Class B2, Industrial and Manufacturing.

CASE STUDY 5: MANUFACTURING PLANT (SOUTH DOWN)

Source of information: Manufacturing NI.

Deadweight has not been applied, as the site is greenfield and is therefore assumed not to support existing operational activity.

The operational use is assumed to be Use Class B2, Industrial and Manufacturing.



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