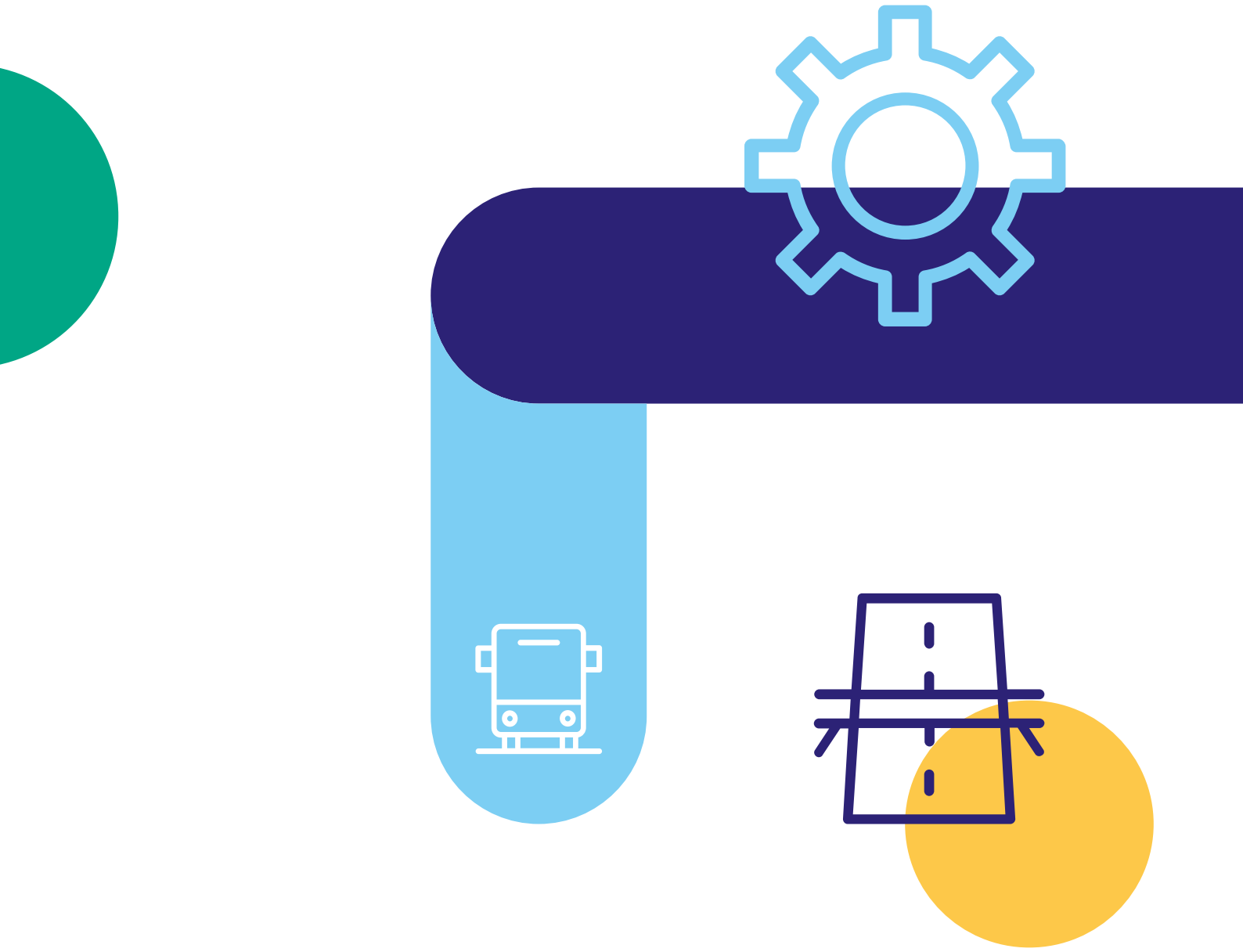
Bonneagar Iompair Éireann
Transport Infrastructure Ireland

Transport Infrastructure Ireland

Bypass Impact Evaluations

Macroom



July 2024

Assessing the Impacts of the N22's Bypass of Macroom

Introduction

Transport Infrastructure Ireland (TII) is responsible for the delivery and management of a safe and efficient national roads network. In its delivery of the national roads network, in line with the National Development Plan, TII-funded projects often feature town bypasses, which entail substantial impacts on local communities.

Traditionally, post-project reviews for TII-funded projects have been carried out to understand whether the expected benefits relating to the respective projects have materialised. In compliance with the requirements of the Government Value for Money assessment requirements, such reviews often focussed on the benefits of the new road – namely travel time, traffic volumes and safety metrics.

With the adoption in 2022 of the National Sustainability Mobility Policy and the Town Centre First Policy, TII is aware of the many opportunities that town bypasses can provide in support of such plans. Furthermore, the objectives of TII-funded schemes have broadened in recent years, with increasing emphasis on modal shift and active travel in particular.

As such, TII is carrying out a series of studies to obtain a comprehensive, evidence-based understanding of the impacts of TII-funded schemes on bypassed towns and villages, across a range of areas, including motorised and active modes; local economy; accessibility and social inclusion; safety; and the local environment.

Over the past 18 months, TII has carried out baseline studies in five towns bypassed by TII-funded national road schemes – Macroom, Westport, Moycullen, Baile Bhuirne and Listowel – collecting data on air and noise quality, travel modes, impacts on local business, impacts on congestion, town dereliction, road safety, and more. Planning is underway for a baseline study for a sixth bypassed town – Adare – to start this year. These studies include desktop research, on-street surveys and focus group discussions.

The first of these bypasses, in Macroom in County Cork, opened on 9 December 2022. This was the first sectional opening of the N22 Project, which fully opened on 6 November 2023. Cork County Council was the lead authority and sponsoring agency for the N22 Project, which was funded by TII.

TII, with support from Cork County Council and the N22 Project Team, collected data for the broad range of indicators prior to the opening. Upon reaching the one-year post-opening mark in December 2023, the data collection was repeated, and TII carried out its first comparison of the pre- and post-bypass opening indicators. TII will return to Macroom again in 2026, to assess the medium and longer-term impacts, and will carry out this cycle of reviews for all of the towns in this series of studies.

The highlights of the first comparative results and insights, from Macroom one year after the bypass opening, follow below.

"It's done away with the congestion… The traffic used to be bumper to bumper all day long. It was absolutely horrific."

"It's a much more pleasant town to walk down"

Macroom resident, November 2023

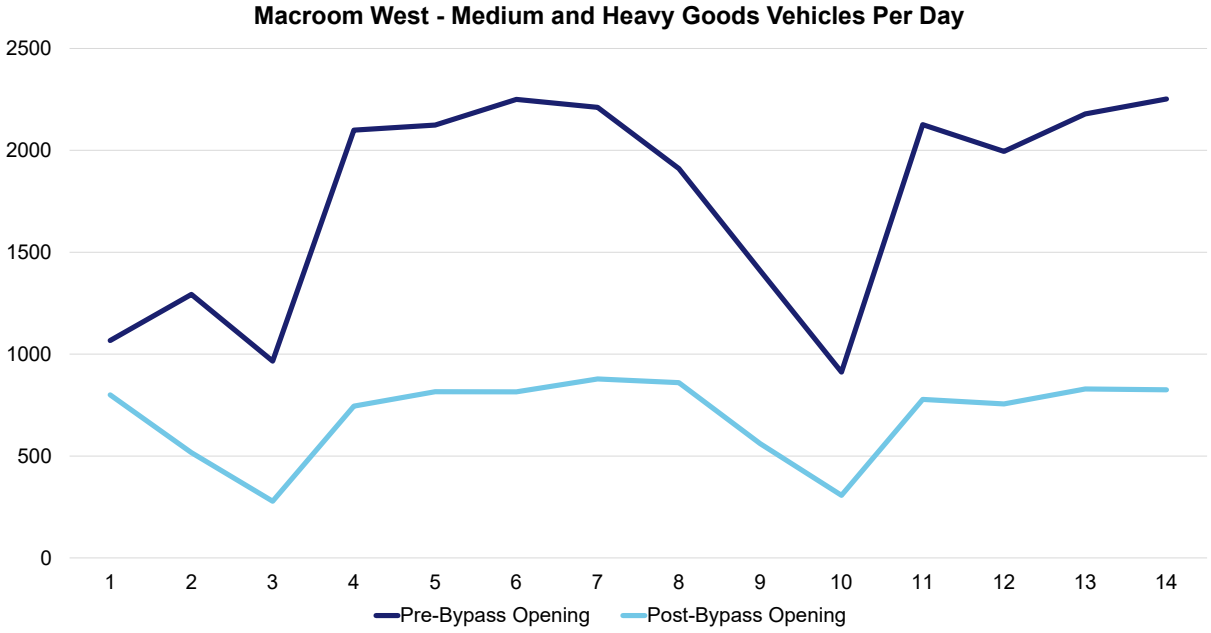
Macroom, Prior to the N22 Bypass Opening, 2022

High-Level Findings

Traffic Impacts

Least surprisingly, traffic volumes in Macroom decreased. The N22 Project team set up a traffic counter to the west of the town centre, where an average of 13,350 vehicles per day (both directions) was observed in the two weeks prior to the bypass opening. This number decreased to 7,900 in a two-week period in March of the following year. 40% of passing vehicle traffic was removed from the congested town centre.

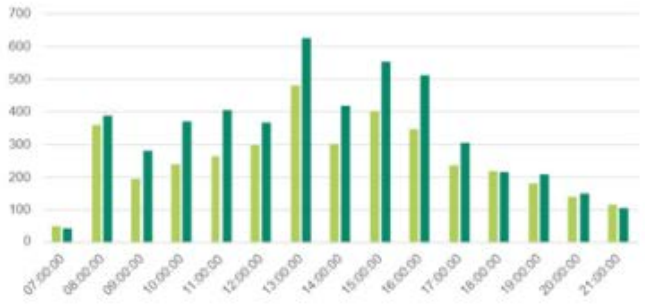
Very importantly, medium and heavy goods vehicle traffic saw an even greater reduction. Looking at those same two periods, medium and HGV traffic went from an average of 1,770 per day to 700, a 60% reduction. Those two-week periods are illustrated in the graph below. Along with this reduction comes a greater sense of safety among residents, as well as noise and air quality benefits.



Increased Footfall

One year on from the bypass opening, increases in town centre footfall were observed on both weekdays and weekend days in Macroom. Pedestrian counts were carried out in November 2022 and November 2023 in seven locations. The below histograms illustrate the increases observed on Main Street in the hourly average footfall counts. Prior to the bypass opening, the weekday peak period of 13:00 saw nearly 500 pedestrians, while following the bypass opening, this increased to over 600. Similar increases were observed on weekend days. Overall, there was an increase in footfall of 28% between the two periods. Notably, there were similar weather conditions during the two monitoring periods.

Footfall Weekday Hourly Average



Footfall Weekend Hourly Average

Mode Of Local Travel To And From School

When asking residents in 2022 and again in 2023 how their children normally travel to and from school, a substantial increase was observed. Following the opening of the bypass, more than half of parents with children 15 or under reported that they walk to school.

Mode of transport to school	Year	
	2022 (n = 96)	2023 (n = 66)
Car/van	55%	41%
Bus (public)	1%	0%
School bus	3%	0%
Walk	39%	58%
Cycle	0%	0%
Other	2%	2%

P-value=0.1, Chi2=7.5, dof=4

*In 2022, respondents were asked with regard to children aged 16 or under. In 2023 this was changed to children aged 15 or under.

Environmental Indicators

The Project team also arranged for noise to be assessed in Macroom, in three locations. There were reductions in dB(A) observed across the board, in every location, in every time bracket.[1] The below table outlines those reductions. The reductions are significant, as a 3dB reduction is a halving of sound pressure, or the equivalent of a halving of traffic. Reductions in noise pollution bring great benefits, contributing to improvements in health and wellbeing, and creating a more pleasant and peaceful environment for residents and communities.

The N22 Project team also commissioned a study into air quality in Macroom prior to and following the opening of the bypass.* Diffusive tube samplers were installed at three locations and left in situ for four weeks prior to and again after opening of the bypass, before being analysed. This study found reductions in NOx across the three sites, and reductions in NO2 across two of the three.

*TII is currently carrying out air quality monitoring in Moycullen, Listowel and Adare via continuous low-cost sensors, to better understand the impacts of the bypasses in these town centres.

Weekday Periods - hrs	Average Reduction in Noise – dB(A)		
	Location 1 Macroom Motors	**Location 2** Town Hall	**Location 3** Recycling Centre
Morning Rush Hour – 0700 to 0900	-4	-3	-9
Morning Ambient – 0900 to 1200	-4	-4	-8
Afternoon Ambient – 1200 to 1600	-4	-4	-8
Evening Rush Hour – 1600 to 1900	-2	-2	-7
Evening Ambient – 1900 to 2300	-3	-1	-8
Night-time Ambient – 2300 to 0700	-6	-5	-10
Average Weekday Reduction	**-4**	**-3**	**-8**
Weekend Periods - hrs	**Average Reduction in Noise – dB(A)**		
Daytime – 0700 to 1900	-3	-1	-8
Evening – 1900 to 2300	-4	-1	-9
Night-time – 2300 to 0700	-6	-3	-10
Average Weekend Reduction	**-4**	**-2**	**-9**

[1] Decibels (dB) are a measurement of sound, while dB(A) are a measurement weighted to relative loudness as perceived by the human ear.

Local Business

Prior to the opening of the bypass, we asked businesses if they thought the bypass would positively or negatively affect their respective businesses. Thirteen out of those 19 expected positive impacts, and one expected negative impacts.

"People are actually in better form when they come in because they haven't sat in traffic for 30 or 40 minutes. They're happier coming in and saying how much of a pleasure it is now to come in."

Business Focus Group, November 2023

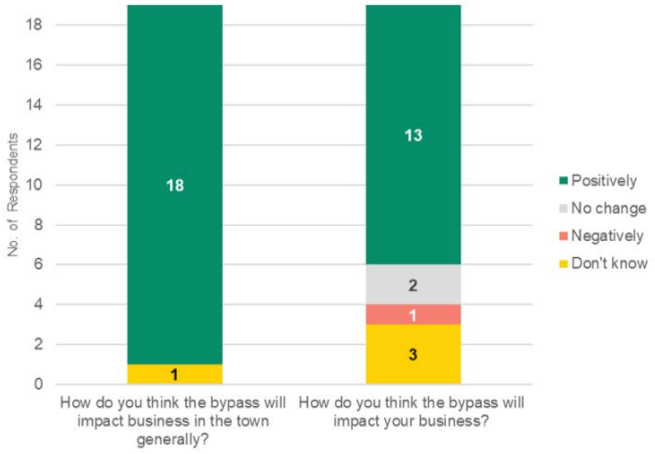
One year later, their expectations look to have been confirmed. When going back in 2023, we spoke to 25 business owners, 19 of which said that their own business was either positively or very positively affected by the bypass, and one responded that their business was negatively affected. All 25 businesspeople surveyed in 2023 thought that the bypass affected Macroom overall either positively or very positively. As indicated below, 18 out of the 25 saw increases in their number of customers and 12 saw increases in their turnover, with none reporting significant decreases in customers or turnover.

When asking visitors to Macroom about the town centre, 31% rated the general attractiveness of the town centre as good or very good, while this increased substantially to 65% in 2023. Likewise, 44% of visitors in 2022 reported the ease of getting around as either good or very good, increasing to 74% in 2023.

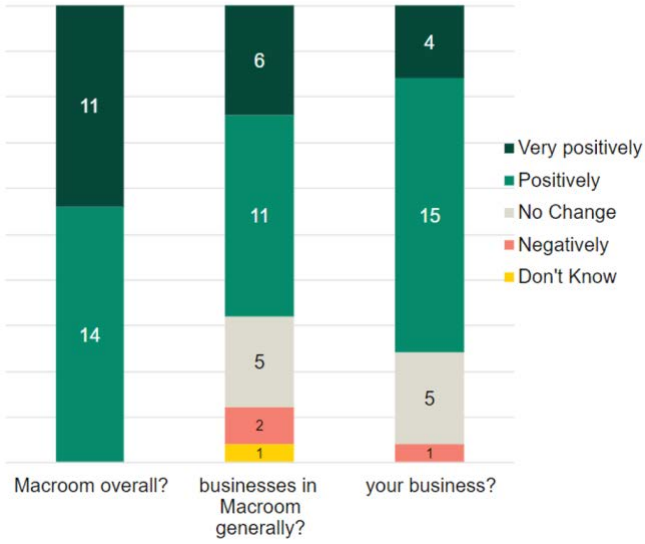
"What we've noticed with our customers coming in here is that the bypass has given people an option of Macroom, whereas before the bypass, Macroom was not an option. I've noticed a lot of those people are back in more often."

Business Focus Group, November 2023

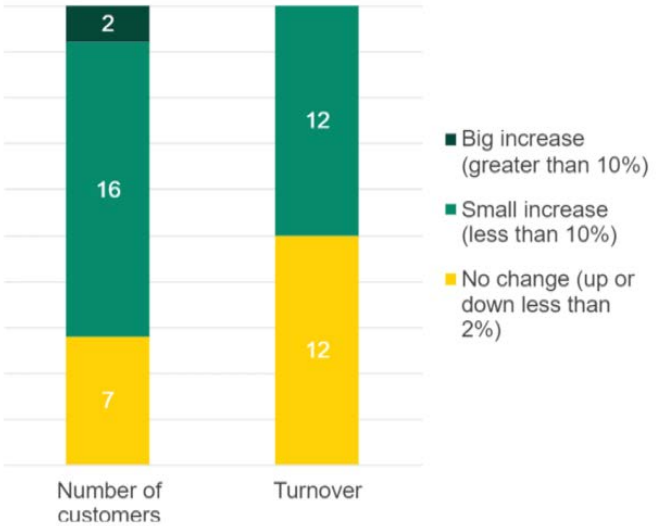
How do you think the Macroom bypass will impact ...?
(2022 Business Survey Respondents, n = 19)



How do you think the Macroom Bypass has impacted...?
(2023 Business survey respondents, n = 25)



Were there any changes in the number of customers/turnover your business had this year (2023) compared to last year (2022)?
(Business survey respondents, n = 25)



Celebration Of The Bypass's Impacts

The town of Macroom not only welcomed the bypass, but even held a festival to celebrate it. The Macroom Music Festival took place in June 2023, with organisers saying it was only possible thanks to the removal of the traffic. Macroom 'got their town back'. Macroom Music Festival took place again in June 2024. This is an example of what bypasses can enable in terms of revitalising towns and villages following the removal of vehicle congestion from their centres.

Results For Further Monitoring

While the music festival and the improvements relating to noise, traffic, footfall and local business are positive results, there are others that TII needs to closely monitor.

Mode Of Local Travel For Shopping Or Leisure

When asking Macroom residents in 2022 how they travelled to the town centre for shopping or leisure, 64% travelled by private vehicle and 33% responded that they walk. When asking this same question in 2023, 72% responded that they travel by private vehicle. This marks an increase of 8 percentage points, which is mirrored in the reduction of people walking, down 8 percentage points to 25%.

This metric will be of particular importance to re-measure when the study is repeated around the five-year point, to see how it changes in response to planned active travel and public realm works. These works, facilitated by the removal of traffic from the N22 project, were initiated by Cork County Council after the bypass opening. The project has an emphasis on providing safe facilities for students to travel to schools and providing healthy and sustainable options for short local trips. The preferred option for the Macroom urban section is expected to be published at the end of 2024.

Residents - Usual mode of travel for business or leisure	Year	
	2022 (n = 250)	2023 (n = 231)
Car/van, as driver alone	58%	57%
Car/van, as driver with passenger(s)	4%	14%
Car/van, as passenger	2%	1%
Bus	0%	0%
Walk	33%	25%
Cycle	0%	0%
Motorcycle	0%	0%
Taxi	1%	0%
Do not travel to Macroom for shopping or leisure	0%	0%

P-value=<0.01, Chi-squared=22.8, dof=9

"Over the summer in anticipation of increased cycling, we installed a bicycle shelter, it is available to anybody, not just our school, but it's rarely being used"

School principal, November 2023

Cycling

Cycling prior to the bypass opening was low and remains low. Our study commissioned cycle counts across Macroom. Of the six count locations, the highest daily average observed in 2023 was 15 cyclists.

As visible above, 0% of parents reported that their children cycled to school in 2022 and 0% again in 2023. The study also included surveys of bike parking in schools. Of the five schools visited, there were only four bicycles in total parked outside. While the weather on the day was cloudy and rainy, according to one principal, cycle training was organised regularly for pupils, but no pupils currently cycled to school there. The removal of traffic appears to have facilitated increased walking to school, as highlighted above, but not increased cycling.

This is consistent with our surveys of residents, who are reporting a greater perception of safety as pedestrians following the opening of the bypass, while there is no such increase observed in percetion of safety as cyclists. Again, it will be particularly important to re-measure cycling in Macroom after completing the active travel works, facilitated by the bypass's removal of traffic from the town centre.

Future Results

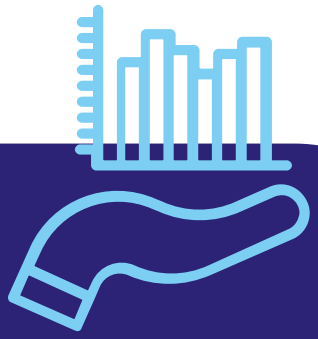
There were also indicators assessed at the baseline stage for which changes may be observed, but were not assessed at this one-year point. This is due to either the data being unavailable and / or results not anticipated in the short-term. This includes in particular road safety, where sufficient collision data will be available in the next review, approximately five years after the opening of the bypass. This also includes data on dereliction and land use, where any changes will be more likely observed in the medium-to-long-term.

Conclusions

Macroom is just the first of the series of towns that TII is studying. One-year post-bypass opening results are due in for Westport during summer 2024, and towards the end of the year for Moycullen and Baile Bhuirne.

TII needs to closely monitor these results to see if, likewise, there could be induction of local travel into towns by private vehicles. TII is carrying out these studies precisely so that we have data behind any such trends and can make data-driven decisions in response. TII needs to closely monitor the active travel count data and to consider what interventions are necessary by TII and local authorities to further facilitate modal shift, especially considering that the Climate Action Plan 2023 calls for a 20% reduction in vehicle kilometres travelled. This can include introducing active travel and public realm works into the scope and design of the new national roads projects themselves, in a more holistic approach.

TII will also return to Macroom, and all of the bypassed towns in the study, approximately five years after the opening of the respective bypasses, to enable TII to monitor and evaluate the medium and longer-term impacts of these projects. As highlighted in TII's Statement of Strategy, "bypasses offer an opportunity to enhance the quality of life in our towns and villages and will be an important feature of our future plans." The findings from these studies will serve as a key resource for this planning.



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