York Civic Trust

Comparator Case Studies for York's Local Transport Strategy
Ghent
May 2024

Introductory note

This is one of nine case studies originally produced in draft in May 2021 at the request of the City of York Council. At the time the Council intended to publish a new Local Transport Plan in December 2021, and had invited York Civic Trust, through its Transport Advisory Group, to offer advice on content. The nine case studies, of cities chosen in discussion with the Council, were developed sufficiently fully to allow the Council to decide which it wished to incorporate in its Local Transport Plan. That decision was never taken, and the 2021 Local Transport Plan was never completed. In February 2022 York Civic Trust collated its advice into *A Transport Strategy for York*, Section 6 of which summarises the key messages from the nine case studies. In February 2023 the Council produced a first draft of a Local Transport Strategy. In March 2023 the Council's Scrutiny Committee on Economy and Place reviewed the nine case studies and recommended that "the Executive Member for Transport work with York Civic Trust and relevant officers on taking the report forward with two or three case studies and focus on building public buy-in into medium and long term traffic strategies".

In March 2024 the Council's new administration agreed to publish a Local Transport Strategy for the city in June 2024, based on a consultation on key principles launched in November 2023. The Trust was invited to update the nine case studies, within the limited resources available to it, and to produce brief summaries of key messages for York's Local Transport Strategy. While these summaries and updated strategies are now being published on the Trust's website, it is important to stress that they have not been fully researched, and thus may not be wholly up to date.

Summary (303 words)

Ghent is the capital of East Flanders in Belgium. It is a port and university city, with a diverse economy that includes significant manufacturing businesses. Like York, it has a historic core and important visitor economy. The city itself is slightly larger than York at 262,000, but the wider area has a further 200,000. The city covers an area of 156 square kilometres and has a student population of almost 80,000. The population overall has shown a steady increase, but the student population has greatly increased.

Ghent has transformed its approach to mobility to meet the needs of the people who live there as opposed to the cars that drive through it. It has an overarching Mobility Plan, based on SUMP principles, which sets the vision and objectives, and establishes the main lines of policy. A Circulation Plan establishes the details of how traffic will be managed and controlled in the inner city area, and a Parking Plan sets out how parking provision will be organised, managed and priced.

In practical transport terms, Ghent is noted for its pedestrianised central core – said to be the largest continuous one in Flanders – together with a number of other pedestrian zones in the inner suburbs. Its Circulation Plan provides an excellent example of how through traffic can be reduced in an urban centre through a fundamental re-think of traffic management and widespread application of smart technologies. The holistic approach to parking may also have some useful lessons for York.

A 2019 evaluation, two years into the plan, showed that there had already been a 17% reduction in car use, matched by a growth in active transport users.

Ghent also offers some useful lessons in how to ensure that there are environmental benefits from better organisation of transport, including an emphasis on 'place' as well as mobility.

Context

Background

Ghent (Gent in Flemish, Gand in French) is the capital of the East Flanders province of Belgium. It is a port city on the River Scheldt, and a university city. It originally started as a settlement at the confluence of the Rivers Scheldt and Leie and in the Middle Ages became one of the largest and richest cities of northern Europe, with some 50,000 people in 1300.

The municipality comprises the city of Ghent proper and several surrounding suburbs. With 262,000 inhabitants at the beginning of 2019, Ghent is Belgium's second largest municipality by number of inhabitants. The metropolitan area, including the outer commuter zone, covers an area of 1,205 km^2 and had a total population of 460,000 in 2018. The population growth rate is low but steady, with a 7% increase predicted for the metropolitan area by 2035.

Ghent was occupied by the Germans in both world wars but escaped major destruction. Much of the city's mediaeval architecture remains intact and is well preserved and restored. According to Wikipedia, Ghent has established a blend between comfort of living and history; it is not a city-museum.

The port of Ghent, in the north of the city, is the third largest port of Belgium. It is accessed by the Ghent–Terneuzen Canal. The port houses, among others, large companies like ArcelorMittal, Volvo Cars, Volvo Trucks, Volvo Parts, Honda, and Stora Enso.

Ghent University, with 44,000 students, and a number of research-oriented companies, such as Ablynx, Innogenetics, Cropdesign and Bayer Cropscience, are situated in the central and southern part of the city. In total, there are now over 80,000 students.

Governance

Ghent City Council is responsible for all policy in the municipality. The current administration is a wide-ranging coalition of socialists, greens, liberals and conservatives.

Belgium is a federal state, with responsibility for transport and roads assigned to the regions, including Flanders, apart from the national railways and traffic regulations, which are the

responsibility of the federal government. Within the policy specified by the regional government, transport plans are developed both at provincial and city level, with Sustainable Urban Mobility Plans led by city governments.

Current transport provision

Ghent's city centre is a traffic-free zone extending for over a square kilometre, which was introduced in 1997, with several smaller pedestrian zones in the inner suburbs. The approach to pedestrianisation is comprehensive, and includes creating an effective network, car-free neighbourhoods, 'school, living and playing' streets. Each of these concepts is defined.

Ghent has the largest designated cyclist area in Europe, with nearly 400 kilometres of cycle paths and more than 700 one-way streets, where bikes are allowed to go against the traffic. It also boasts Belgium's first cycle street, where cars are considered 'guests' and must stay behind cyclists. In 2017 the city restricted car traffic circulation which boosts cycling. More cyclists means a higher demand for bicycle parking. In 2010, the plans to renovate Gent-Sint-Pieters railway station, included 10,000 bicycle parking spots. In 2020 several sections of the underground parking facilities have been built, and the targets have been adjusted to a total of 17,000 parking spaces.

All buses and the network of five tram lines are operated by De Lijn, which is the province-owned public transport operator. The aim is: "More attractive public transport", including:

1. Facilitating faster flow of buses and trams
2. Redevelopment of existing tram axles
3. Conversion of bus routes to trams
4. Actively responding to new urban developments (new developments must meet their parking needs on site and within agreed standards)

There is a well-developed P&R system.

The main railway station, Gent Sint Pieters, and four suburban stations, have services operated by the national rail operator, SNB.

Transport planning

Local transport plans

The Flemish government has required provinces and cities to develop Sustainable Urban Mobility Plans since 1995, and issues detailed guidance on the themes to be covered, the process and the requirements for consultation. A first set of SUMPs was produced in the period to 2005, and a second from 2009 onwards.

Ghent produced its first Sustainable Urban Mobility Plan (SUMP) in 2003. A second version started in 2009 and was completed in 2015. This is set in the context of the Flanders Mobility Plan (Vlaamse Mobiliteitsvisie 2040 "Met slim geregeld verkeer en vervoer naar duurzaam verbonden mensen en bedrijven" (Literally: 'With smartly arranged traffic and transport to sustainably connected people and businesses'), published in 2021.

(The cover reads “Engine for a sustainable and accessible city”)

Priority objectives of the Plan

The Flemish government specifies five overarching objectives on which all SUMPs must focus:

- Accessibility to centres of economic activity
- Personal accessibility to allow everyone to participate in social life
- Safety
- Liveability, including the removal of barriers and reduction of noise
- Environmental enhancement and reduction of environmental impacts.

Ghent added to these by considering health, education and social inclusion.

What does the Ghent mobility plan want to achieve?

- Vibrant and dynamic city
- Accessible
- Child-friendly and pleasant
- Clean and healthy city
- Traffic-safe city
- Durable modal split
- Shorter movements
- Less dependent on cars

The complete SUMP for Ghent is referred to as its Mobility Plan (Mobiliteitsplan). This covers all forms of transport across the city. The central area within the main ring road also has a Circulation Plan (Circulatieplan). This focuses on improving transport within the central pedestrian- dominated area. There is also an overall parking strategy which includes bicycles as well as cars. Details of these plans are available at https://stad.gent/nl/mobiliteit-openbare-werken/mobiliteit/plannen-projecten-subsidiescijfers-scholenwerking/mobiliteitsplan-circulatieplan-en-parkeerplan-gent

The Mobility Plan is the overarching concept and includes the strategic vision of the City of Ghent to manage traffic throughout its territory. The Circulation Plan, which was planned from 2015 and introduced in April 2017, is part of the Mobility Plan and concerns the area

within the inner city ring (R40). The Circulation Plan is a detailed plan to control traffic flow in and out of the city.

The stimulus for a new Circulation Plan was the rapid growth in car ownership and use, leading to congestion, delays to public transport and shortage of parking space. The ultimate goal of the Circulation Plan is to take through traffic out of the city centre - whoever needs to be in the city centre will be able to get there more easily.

The aims of the Circulation Plan are to:

- Improve the quality of life in the city
- Strengthen the attractiveness of the shopping offer
- More space for pedestrians and cyclists
- Smooth flow of public transport
- Car parks and other destinations easily accessible
- Provide destination traffic with easy access

The Circulation Plan was introduced partly to address the research finding that 40% of cars were unnecessarily going straight through the inner city.

Strategic approach

Ghent's second SUMP focuses on ten "lines of force":

1. Mobility as the driving force for sustainability and accessibility
2. Protection of the historic core from through traffic and for pedestrians
3. A strengthened bicycle network
4. Congestion-free circulation of public transport, with more tram routes
5. Parking management to achieve "desirable mobility"
6. Speed control throughout the city with more 30km/h zones
7. Sustainable and liveable alternatives to existing major roads
8. A dynamic traffic control centre to optimise traffic
9. Extending mobility management to the city region
10. Co-creation as a dynamic to help design mobility.

Principal policy measures

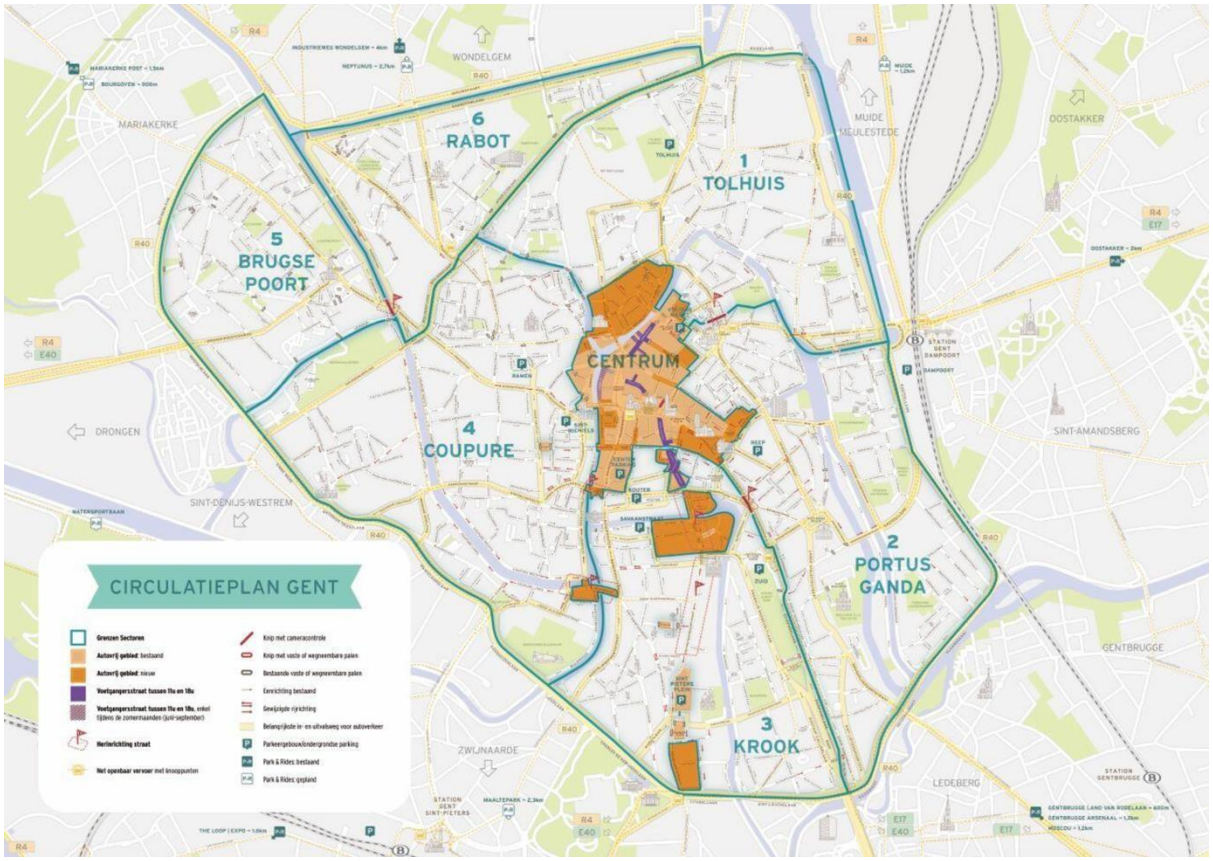
The Flemish government specifies a focus on land use and its impacts on transport; networks for each mode; awareness campaigns; and enforcement. It introduced the STOP Principle, roughly equivalent to York's hierarchy of users, with walking, cycling, public transport and private cars as the order of priority for support. There is an interesting comment in a review of the government policy that the STOP Principle is "too strongly formulated and too weakly implemented".

The scheme within the SUMP which has attracted the most attention is the 2017 Traffic Circulation Plan, which bans through traffic from a ring around the pedestrian area and within the inner ring road (R40) extending to a radius of 1.5km from the centre. This inner city area, the Binnenstad, houses a quarter of Ghent residents. According to the city's website, it is designed to ensure that people:

- Will get more space to enjoy Ghent
- Will be able to move safely
- Will be able to live, work and study in a healthy living environment
- Will be able to easily reach their destination.

In a nutshell, the whole area, which is surrounded by the dual carriageway R40 inner ring road, is divided into six cells plus the core area. Traffic passing into and between the zones is controlled by an extensive system of number plate recognition cameras. These enforce cut off points (knippen) at key locations on the road network. Signs indicate which types of vehicle are permitted in each area. Different streets have been made one-way or re-modelled. Parking has been comprehensively reviewed, with higher charges in some cases. In the large pedestrian area there is an electric bus service which links to parking locations and across the Centre. Movement other than on foot, bike or public transport between the zones is prohibited. While certain vehicles are allowed permits to access the central pedestrian zone, they are now required to enter and exit via a specified route, and not permitted to drive through the area. One significant through route, the N430, remains on the W-NE axis to the south of zones 5 and 6 (see the map below). While traffic cells such as this have been in use since Gothenburg introduced them 40 years ago, Ghent's is by far the largest such scheme.

One interesting example of item (7) in the list above has been the removal of the B401 viaduct leading to the city centre, and its replacement by park and ride facilities and dedicated bus and bicycle corridors. Interestingly, this project involved co-creation, with people with local knowledge working in collaboration with professionals, and critics included in the engagement process to reduce the potential for media criticism.



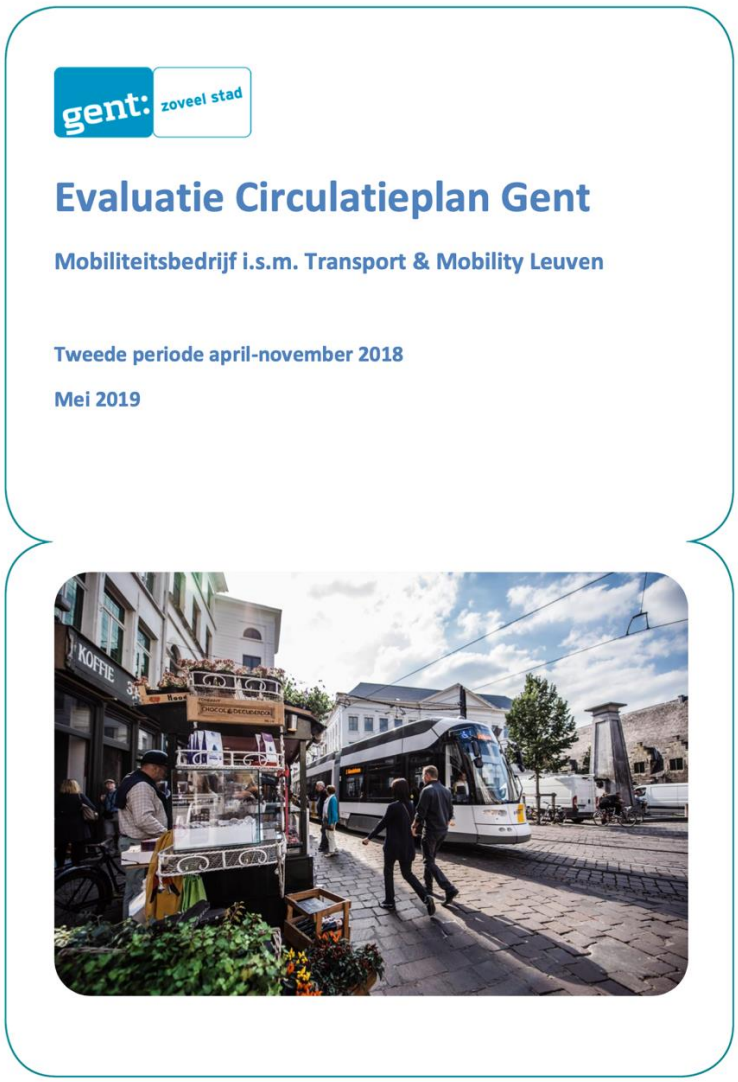
(The plan shows the extent of the area covered by the Circulation Plan, and the areas which are pedestrianised).

The area within the inner ring road has a 30kph speed limit.

<u>Evaluations of the Circulation Plan</u>

Evaluations in 2018 and 2019 were carried out by the City Council in partnership with the University of Leuven. They seem very comprehensive and professional. Selected findings are presented in the annex to this paper. Positive impacts identified by the evaluations include:

1. Improved public transport speeds and reliability in the Centre
2. Improved cycle and pedestrian experience
3. Improved air quality, especially Nox reductions
4. Residents reporting an improved environment and quality of life
5. A decrease in through traffic and less congestion in the Centre
6. More space available for leisure and enjoyment of visitors and locals
7. Increased use of bicycles and public transport



The 2019 Evaluation suggests a 17% decline in car trips made by Ghent residents. Public transport use has increased by 6% daily, but by 25% in the evening rush hour. Bicycle use has risen by more than 50% since the plan was implemented.

Central area car parks have, in some cases, been converted into green spaces. There have been measurable improvements in road safety and air quality, with inner city traffic accidents down by 25% and NOx concentrations down by 20%.

A clear majority of residents and businesses consider that the Circulation Plan has been successful. Overall, 50% of Ghent residents agree with the statement that the Circulation Plan is a good thing ~~is~~ for Ghent as a city. 30% disagree with this statement; the balance are undecided. There has been some vocal opposition, but this has faded over time. Anecdotally, the local media have focussed only on the supposed problems. There were initial fears about the blocking access to peoples' homes and businesses, and fear of lost business (some businesses were quoted). These issues seem to have largely been resolved. It is widely felt that better Council communication and consultation prior to implementation could have minimised these complaints.

There have been ongoing concerns about the mobility of the elderly and disabled, which have resulted in tweaks to the original plan. There are also reports of increased traffic and queueing on the ring road.

The Evaluation concludes that "in general there is a status quo of traffic congestion on the roads during the morning rush hour and a slight decrease during the evening rush hour. On the R40, traffic flow has increased as more sector-sector traffic and destination and origin traffic uses the R40 to drive to and from a place in the city centre. An important part of the traffic on the R40 is through traffic without origin or destination in the inner city."

"There is a clear drop in motorised traffic on the main access roads. This can be explained by changes in the choice of mode of transport of the residents and visitors of the city centre and for some streets because one can no longer reach a destination on the other side through the city centre. In addition, some of the traffic flows have shifted to the R40 and the N430 axis to the south of Zones 5 and 6."

"There is a clear shift in car traffic flows. We're seeing an average of 8% less traffic on the approach roads during the evening rush hour, a confirmation of the decrease in the first measurement. During the morning rush hour, the traffic on the approach roads has hardly changed. On the R40 there is on average 14% more traffic during peak hours. Less traffic that doesn't have an origin or destination in the city centre uses the R40, but there is more traffic that moves from one sector to another.

"On average, there is 17% less traffic in and out of Ghent's inner city during rush hours, than in 2017. However, there is more traffic on specific axes after the introduction of the Circulation plan, by concentrating traffic flows on those streets with a shift from the surrounding streets."

The overall impact on motorised traffic (in terms of vehicle-km) is not altogether clear, since we are not told the overall flows on roads within the seven cells, but for the individual road types the average percentage changes in flow by 2019 are shown in the table below.

Road type	Tables (see annex)	AM peak	PM peak
R40 ring	6.7-6.10	+15%	+14%
Radials	6.1-6.4	+0%	-9%
Within cells	5.1, 5.2	-34%	-39%

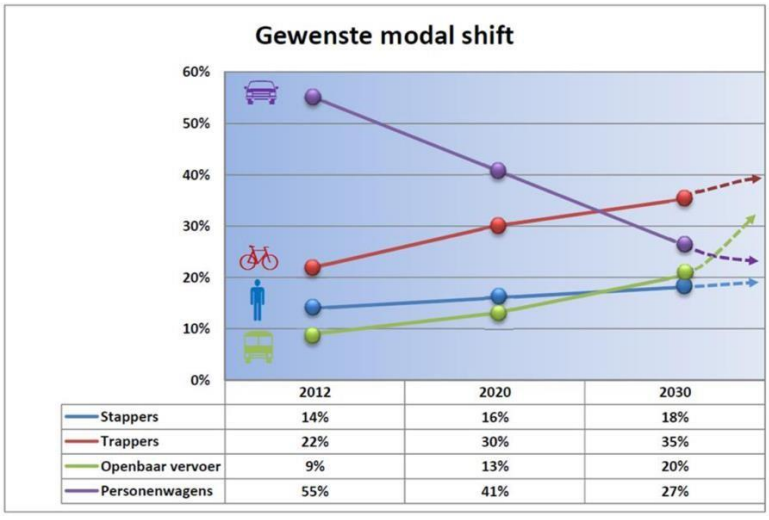
Given the recorded flows and road lengths for the R40 and radial, it appears that overall motorised vehicle km for the first two rows above have increased by around 7% in the AM peak and 1% in the PM peak. Given the substantial reduction within the cells, it seems

probable that overall motorised vehicle km will have fallen in the PM peak, and be largely unchanged in the AM peak.

There were also various press rand specialist magazine reviews at the 5-year stage, i.e. 2022, which ware overwhelmingly positive.

Modal shares

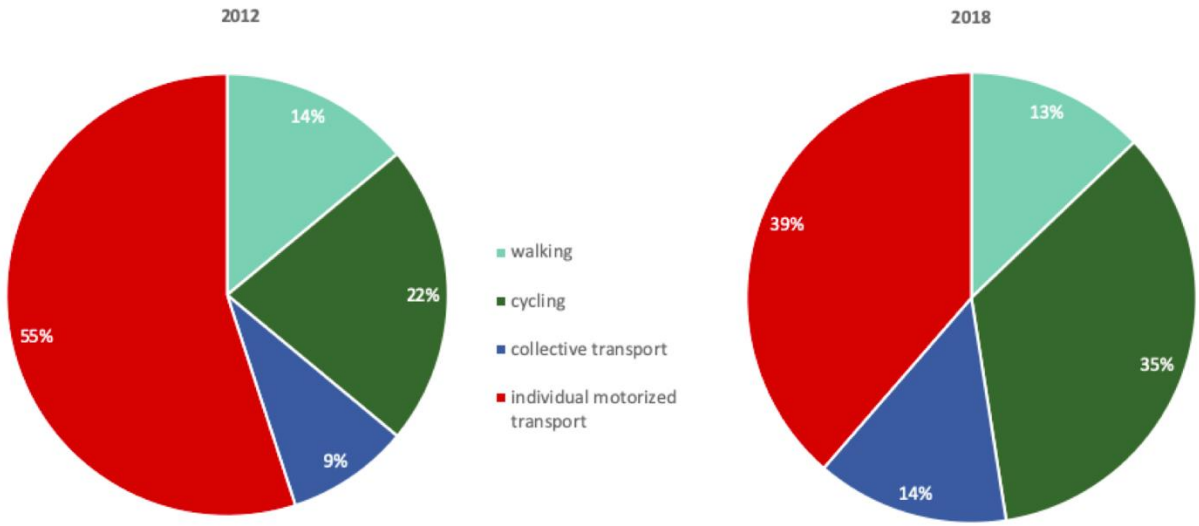
In 2012, the modal shares for all journeys by Ghent residents were car: 56%, cycling: 22%, public transport: 9%, walking: 15%. The SUMP sets targets for 2030 of car: 28%, cycling: 32%, public transport: 21%, walking: 19% [note: these are rounded up; the quoted total was 95%]. This represents a halving of journeys by car, and more than doubling journeys by public transport.



	2012	2020	2030
Stappers	14%	16%	18%
Trappers	22%	30%	35%
Openbaar vervoer	9%	13%	20%
Personenwagens	55%	41%	27%

(The diagram above shows desired modal shift between 2012 and 2030. The index refers to walkers, cyclists, public transport and private cars).

The 2019 Evaluation showed that car use had decreased from 55% of trips in 2012 to 39% in 2018. There was a large increase in cycling and, interestingly, a rapid growth in car sharing and public transport.



Ghent's broader mobility plan has set out clear targets with regards to the modal split it wants to achieve by 2030 (the figures that the targets are compared to come from 2012). These are:

- Car usage reduced from 55 to 27 per cent;
- Cycling increasing from 22 to 30 per cent;
- Public transport usage increasing from 9 to 20 per cent;
- Walking increasing from 15 to 18 per cent.

Ghent has been extremely successful in boosting travel by bicycle though, arguably only through large-scale investment. The city has also published a separate strategy on walking (Voetgangersplan Gent Strategie & acties, October 2022), which tries to engage with residents on the importance of walking and good provision for it.

Demonstrator new neighbourhoods

Ghent's population growth rate is small, and there appear to be no references to new planned neighbourhoods.

Provision for disabled travellers

Disabled drivers are able to obtain permits to access the pedestrian areas but, like other car users, are not able to drive through it. All permits are checked using Automatic Number Plate Recognition.

Engagement and consultation

The extended process for developing Ghent's second SUMP started with plan development led by the city administration, and production of a draft SUMP. There was then a series of public debates, followed by a public inquiry in parallel with a series of consultations with stakeholders. The list of stakeholders was drawn widely, to include environmental bodies, health practitioners, emergency services, local schools and representatives of minorities.

While the engagement process appears focused on consultation, there are examples of collaborative approaches in formulating specific schemes, and some situations in which local communities were empowered to redesign the layout of their local streets. This is encapsulated by the role of 'co-creation' as one or the ten "lines of force" in the SUMP.

The underlying principles of co-creation are that:

1. Traditional relations between government and stakeholders are shifting
2. Innovative, creative initiatives can come from all corners (residents, schools, companies,...)
3. Ghent wants to support positive initiatives and give them every opportunity to succeed
4. Co-creation can help shape mobility in Ghent

Relevance to York

Useful lessons and pointers

What is most striking about Ghent is its ambition. It has already introduced major changes to the transport system which have come to be very widely accepted by residents and businesses. But, it clearly intends to carry on with it's reforms.

Ghent has made major changes to its transport system and patterns of travel over a ten year period, and its hierarchy of users (the STOP Principle) is similar to York's. It appears to manage access to its extensive pedestrian area effectively. Its focus on expanding the cycle network is directly relevant to York, as is its intention to ensure that public transport is free of congestion.

The approach adopted is: "Everyone can continue to make their own mobility choices. It is a matter of choosing the right means of transport at the right time".

The traffic cell scheme, and particularly its application in the pedestrian zone, offers an example of what might be done to remove non-essential car traffic from York's city centre. While the wider scheme could not be directly be applied to York, many of its principles could be, particularly in controlling movement between radial roads and introducing low traffic neighbourhoods. Ghent is now extending the Circulation Plan approach to a further seven districts. Each district will have its own Mobility Plan, designed to improve liveability and safety, involving further reductions in through traffic. Each district Mobility Plan actively involves local stakeholders.

Ghent's engagement approach is of particular interest. While it started with a focus on consultation rather than more interactive engagement, it has now adopted co-creation for scheme design, both in minor schemes to reallocate road space and in the major project to remove a highway viaduct. It should be possible to adopt a similar approach at a ward level in York.

Ghent's approach shows good integration between policies:

1. Close link between mobility (transport) and spatial planning
2. Economic developments and sustainable mobility can strengthen each other
3. Interaction between residential density, public transport and new cycle routes
4. Link with other policy documents (Spatial Structure Plan, Climate Plan, etc.)

Ghent introduced a Low Emission Zone in January 2020. The most polluting cars are no longer allowed to enter the zone within the inner city ring (R40). The aim was to improve the health of residents and visitors.

Ghent makes extensive use of electronic monitoring systems to record and manage traffic. There are complementary policies on freight management and coaches.

Ghent's approach to 'softening' may also be of interest to York in the context of discussions about 'place'. This involves re-imagining the city as a series of green, people-friendly environments, in which greenery complements and sometimes replaces hard surfaces.

<u>Any aspects which make it less relevant to York</u>

Ghent is larger than York, and has a major port, which will influence transport patterns in the north of the city. It has more purpose-built roads than York, and was able to introduce its extensive traffic cell scheme on this basis. A scheme on this scale in York would require a suitable orbital route at approximately the distance of Clifton Bridge from the centre.

Ghent's public transport makes use of an extensive tram network, which it is expanding. All public transport is managed by the regional government; though this may offer some pointers for York's new Enhanced Partnership.

Ghent took much longer to prepare its second SUMP than York has allowed for developing LTP4, but the reasons for this are not clear. Ghent appears to be an outlier in this; most European cities take two years to produce a SUMP from scratch, and a little less in which to update an existing one.

The other big differences from York include the presence of a large inner ring road, built to dual carriageway standard, running quite close to the historic core. The larger inner city population and higher density favour active transport. Finally, Ghent appears to benefit from much more generous public funding for transport and urban improvements.

Author: Tony May V2.1 21st May 2021 Extended and updated by John Stevens 22nd April 2024. Final modifications 8th May 2024.

ANNEX: Second Evaluation of the Impact of the Circulation Plan – Some Selected Statistics

RICHTING	INTENSITEITEN GEMOTORISEERD VERKEER - OCHTENDSPITS						
	VOOR-METING	NAMETING 1	NAMETING 2	VERSCHIL VOOR - NAMETING 1	%	VERSCHIL VOOR - NAMETING 2	%
IN	7 393	5 939	6 142	-1454	-20%	-1251	-17%
UIT	5 313	4 690	4 673	-623	-12%	-640	-12%

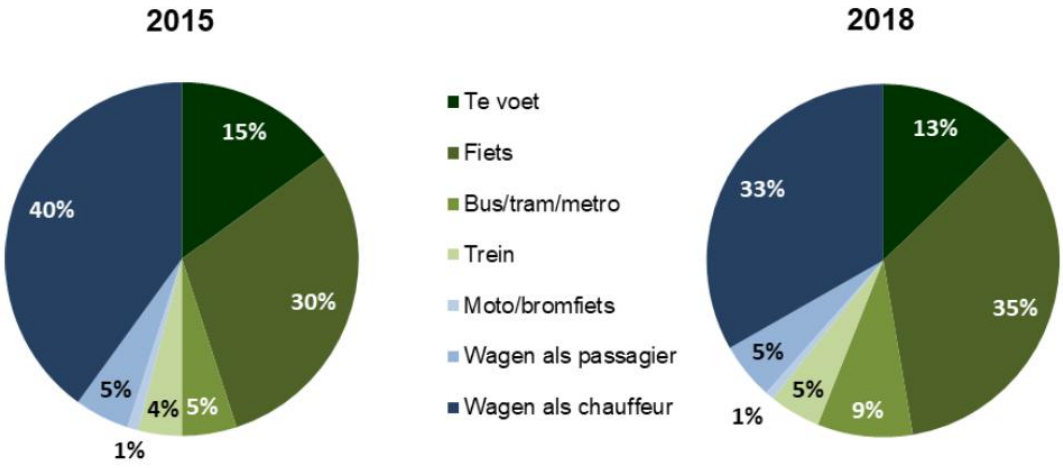
Tabel 3-3 In- en uitrijdende motorvoertuigen voor de binnenstad in ochtendspits (Bron: kruispunttellingen, Stad Gent)

The table above shows traffic flow in the morning rush hour. Richting = direction (in/out) Voormeting = Before Circulation Plan was implemented; Nameting 1 and 2 are the years after implementation. Verschil = difference.

RICHTING	INTENSITEITEN GEMOTORISEERD VERKEER - AVONDSPITS						
	VOOR-METING	NAMETING 1	NAMETING 2	VERSCHIL VOOR - NAMETING 1	%	VERSCHIL VOOR - NAMETING 2	%
IN	6 811	5 472	5 708	-1339	-20%	-1103	-16%
UIT	7 547	6 118	5 761	-1430	-19%	-1786	-24%

Tabel 3-4 In- en uitrijdende motorvoertuigen voor de binnenstad in avondspits (Bron: kruispunttellingen, Stad Gent)

The above table shows the same for the evening rush hour.



Figuur 3-8 Modal split Gentenaars in 2015 en in 2018 (Bron: Mobiliteitsonderzoek 2018, Stad Gent)[5]

These pie charts show the change in modal split for all Ghent residents between 2015 and 2018 (Te voet = on foot; fiets = cycle; moto/bromfiets = moped; wagen = car as passenger and car as driver).

INDICATOR	WIJZIGINGEN INFRASTRUCTUUR			
	VOOR-METING	NA-METING	VERSCHIL	%
OPPERVLAKTE AUTOVRIJ GEBIED	22.4 ha	51.2ha	+28.8 ha	+128%
% van oppervlake binnenstad	2.9%	6.5%	+3.7%	-
OPPERVLAKTE VOETGANGERSSTRATEN	-	3.8 ha	+3.8ha	+100%
% van oppervlake binnenstad	-	0.5%	+0.5%	-

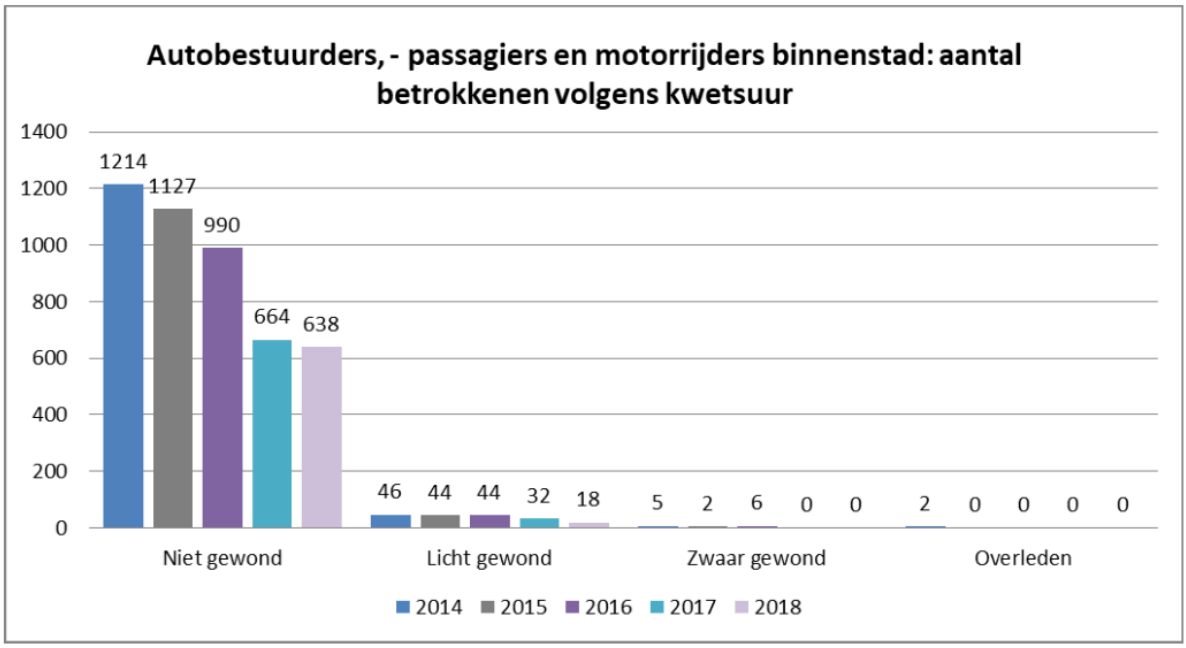
Tabel 4-1 Cijfers autovrij gebied en voetgangersstraten voor en na invoering van het Circulatieplan (Bron: Stad Gent)

The table above shows the growth of the pedestrianised area since the Circulation Plan was implemented. Oppervlakte autovrij gebied = area of car free zone; Oppervlakte voetgangerstraten = area of pedestrianised streets; and the percentage of each in the inner city.

TYPE VOERTUIG	WIJZIGING IN COMMERCIËLE SNELHEID			
	OCHTENDSPITS		AVONDSPITS	
	VERSCHIL VOOR - NAMETING 1	VERSCHIL VOOR - NAMETING 2	VERSCHIL VOOR - NAMETING 1	VERSCHIL VOOR - NAMETING 2
Bus	+8%	+7%	+5%	+5%
Tram	+6%	+6%	+4%	+4%

Tabel 4-4 Verschil algemeen gemiddelde commerciële snelheid tijdens ochtendspits (7u30-8u30) en avondspits (16u30-17u30) in de binnenstad na invoering van het Circulatieplan in 2017 en 2018 t.o.v. de situatie ervoor.

The table above shows the change in speed of public transport in the morning and evening rush hours – the difference before and after implementation of the Circulation Plan.



Figuur 4-29 Aantal autobestuurders, -passagiers en motorrijders, slachtoffer bij een ongeval in de binnenstad, cijfers april tot oktober, opgedeeld volgens kwetsuur (Bron: ongevallengegevens Politie)

The above table shows the changes in accident numbers and their severity in the inner city over the years 2014 to 2018.

SECTOR	INTENSITEITEN GEMOTORISEERD VERKEER - OCHTENDSPITS						
	VOOR-METING	NAMETING 1	NAMETING 2	VERSCHIL VOOR - NAMETING 1	%	VERSCHIL VOOR - NAMETING 2	%
CENTRUM	103	43	66	-61	-59%	-38	-36%
TOLHUIS	213	184	221	-30	-14%	8	+4%
PORTUS GANDA	225	249	269	24	+10%	44	+20%
KROOK	289	96	156	-193	-67%	-134	-46%
COUPURE	139	61	54	-78	-56%	-85	-61%
BRUGSE POORT	185	57	63	-128	-69%	-123	-66%
RABOT	339	174	158	-166	-49%	-182	-54%
GEMIDDELD	203	113	135	-90	-45%	-68	-34%

Tabel 5-1 Gemiddelde drukte gemotoriseerd verkeer in woonstraten per sector tijdens de ochtendspits (Bron: kruispunttellingen Stad Gent, verwerking TML)

SECTOR	INTENSITEITEN GEMOTORISEERD VERKEER -AVONDSPITS						
	VOOR-METING	NAMETING 1	NAMETING 2	VERSCHIL VOOR - NAMETING 1	%	VERSCHIL VOOR - NAMETING 2	%
CENTRUM	135	33	36	-102	-76%	-99	-73%
TOLHUIS	273	250	272	-23	-8%	-1	-0%
PORTUS GANDA	261	354	207	93	+36%	-54	-21%
KROOK	291	134	181	-157	-54%	-109	-38%
COUPURE	231	81	91	-150	-65%	-140	-60%
BRUGSE POORT	222	77	74	-144	-65%	-148	-67%
RABOT	448	171	138	-277	-62%	-311	-69%
GEMIDDELD	255	149	154	-106	-41%	-101	-39%

Tabel 5-2 Gemiddelde drukte gemotoriseerd verkeer in woonstraten per sector tijdens de avondspits (Bron: kruispunttellingen Stad Gent, verwerking TML)

The two tables above show the traffic flow in the morning and evening rush hours in at 31 selected locations in the seven zones. They compare the situation before, and two years after, implementation of the Circulation Plan.

STRAATNAAM	INTENSITEITEN MOTORVOERTUIGEN OCHTENDSPITS (IN)						
	VOOR-METING	NA-METING 1	NA-METING 2	VERSCHIL VOOR-NAMETING 1	%	VERSCHIL VOOR-NAMETING 2	%
Drongensesteenweg (N466)	783	731	776	-52	-7%	-7	-1%
Brugsesteenweg	339	361	313	+22	+6%	-26	-8%
Palinghuizen (N9)	1099	990	1029	-109	-10%	-70	-6%
Frans van Ryhovelaan	514	352	326	-162	-32%	-188	-37%
Koopvaardijlaan	157	322	308	+165	+106%	+151	+97%
Dampoort	826	960	1011	+134	+16%	+185	+22%
B401 parallelweg	1429	1666	1635	+237	+17%	+206	+14%
B401 viaduct	988	1009	952	+21	+2%	-36	-4%
Normaalschoolstraat	146	122	108	-24	-17%	-38	-26%
Hofbouwlaan (N60)	334	376	380	+42	+13%	+46	+14%
Kortrijksesteenweg	349	319	247	-30	-9%	-102	-29%
Charles Andrieslaan	272	351	279	+79	+29%	+7	+2%
GEMIDDELD	603	630	614	+27	+4%	+11	+2%

Tabel 6-1 Intensiteiten (motorvoertuigen) op de invalswegen voor en na invoering Circulatieplan, *ochtendspits stadinwaarts* (Bron: kruispunttellingen Stad Gent, verwerking TML)

STRAATNAAM	INTENSITEITEN MOTORVOERTUIGEN AVONDSPITS (IN)						
	VOOR-METING	NA-METING 1	NA-METING 2	VERSCHIL VOOR-NAMETING 1	%	VERSCHIL VOOR-NAMETING 2	%
Drongensesteenweg (N466)	813	721	798	-92	-11%	-15	-2%
Brugsesteenweg	413	551	331	+138	+33%	-82	-20%
Palinghuizen (N9)	748	734	829	-14	-2%	+81	+11%
Frans van Ryhovelaan	447	271	298	-176	-39%	-149	-33%
Koopvaardijlaan	326	475	372	+149	+46%	+46	+14%
Dampoort	1025	914	985	-111	-11%	-40	-4%
B401 parallelweg	1579	1482	1564	-97	-6%	-15	-1%
B401 viaduct	849	722	641	-127	-15%	-208	-24%
Normaalschoolstraat	162	143	127	-19	-12%	-35	-22%
Hofbouwlaan (N60)	407	414	447	+7	+2%	+40	+10%
Kortrijksesteenweg	317	290	267	-27	-9%	-50	-16%
Charles Andrieslaan	249	290	262	+41	+16%	+13	+5%
GEMIDDELD	611	584	577	-27	-4%	-35	-6%

Tabel 6-2 Intensiteiten (motorvoertuigen) op de invalswegen voor en na invoering Circulatieplan, *avondspits stadinwaarts* (Bron: kruispunttellingen Stad Gent, verwerking TML)

The above two tables show the traffic flow using the radial routes in-bound in the evening (top) and morning (bottom) rush hours before and after implementation of the Circulation Plan and, in the final row, the average over all 12 radials.

STRAATNAAM	INTENSITEITEN MOTORVOERTUIGEN OCHTENDSPITS (UIT)						
	VOOR-METING	NA-METING 1	NA-METING 2	VERSCHIL VOOR-NAMETING 1	%	VERSCHIL VOOR-NAMETING 2	%
Drongensesteenweg (N466)	1015	842	972	-173	-17%	-43	-4%
Brugsesteenweg	253	192	240	-61	-24%	-13	-5%
Palinghuizen (N9)	672	645	648	-27	-4%	-24	-4%
Frans van Ryhovelaan	225	205	300	-20	-9%	+75	+33%
Koopvaardijlaan	203	402	424	+200	+99%	+222	+109%
Dampoort	563	578	580	+15	+3%	+17	+3%
B401 parallelweg	1735	1550	1410	-185	-11%	-325	-19%
B401 viaduct	449	341	284	-108	-24%	-165	-37%
Normaalschoolstraat	172	212	266	+40	+23%	+94	+55%
Fernand Scribedreef N60	616	662	709	+47	+8%	+93	+15%
Kortrijksesteenweg	245	269	230	+24	+10%	-15	-6%
Charles Andrieslaan	232	234	270	+2	+1%	+38	+16%
Overzet	258	367	302	+109	+42%	+44	+17%
GEMIDDELD	511	500	510	-11	-2%	-0	-0%

Tabel 6-3 Intensiteiten (motorvoertuigen) op de invalswegen voor en na invoering Circulatieplan, *ochtendspits staduitwaarts* (Bron: kruispunttellingen Stad Gent, verwerking TML)

STRAATNAAM	INTENSITEITEN MOTORVOERTUIGEN AVONDSPITS (UIT)						
	VOOR-METING	NA-METING 1	NA-METING 2	VERSCHIL VOOR-NAMETING 1	%	VERSCHIL VOOR-NAMETING 2	%
Drongensesteenweg (N466)	1193	920	1100	-273	-23%	-93	-8%
Brugsesteenweg	469	249	433	-220	-47%	-36	-8%
Palinghuizen (N9)	1036	816	873	-220	-21%	-163	-16%
Frans van Ryhovelaan	571	533	625	-38	-7%	+54	+9%
Koopvaardijlaan	279	461	408	+182	+65%	+129	+46%
Dampoort	1154	985	955	-169	-15%	-199	-17%
Brusselsesteenweg	579	568	653	-11	-2%	+74	+13%
B401 parallelweg	1741	1361	1411	-380	-22%	-330	-19%
B401 viaduct	847	670	545	-177	-21%	-302	-36%
Normaalschoolstraat	170	207	201	+37	+22%	+31	+19%
Fernand Scribedreef N60	738	659	579	-80	-11%	-159	-22%
Kortrijksesteenweg	313	318	218	+5	+2%	-95	-30%
Charles Andrieslaan	299	325	292	+26	+9%	-7	-2%
Overzet	286	313	281	+27	+9%	-5	-2%
GEMIDDELD	691	599	612	-92	-13%	-79	-11%

Tabel 6-4 Intensiteiten (motorvoertuigen) op de invalswegen voor en na invoering Circulatieplan, *avondspits staduitwaarts* (Bron: kruispunttellingen Stad Gent, verwerking TML)

The above two tables show the traffic flow using the radial routes out-bound in the evening (top) and morning (bottom) rush hours before and after implementation of the Circulation Plan and, in the final row, the average over all 12 radials.

VERKEER ZONDER BESTEMMING BINNENSTAD	OCHTENDSPITS						
	VOOR-METING	NA-METING 1	NA-METING 2	VERSCHIL VOOR - NAMETING 1	%	VERSCHIL VOOR - NAMETING 2	%
Totaal doorgaand verkeer via R40	2 839	2 725	2 610	-114	-4%	-229	-8%
Aandeel van het totaal inkomend verkeer	19%	20%	19%				

Tabel 6-5 Verkeer zonder bestemming binnenstad (= doorgaand verkeer) voor ochtendspits (7u-9u) op basis van kentekenonderzoek. (Bron: kentekenonderzoek Stad Gent, verwerking TML)

VERKEER ZONDER BESTEMMING BINNENSTAD	AVONDSPITS						
	VOOR-METING	NA-METING 1	NA-METING 2	VERSCHIL VOOR - NAMETING 1	%	VERSCHIL VOOR - NAMETING 2	%
Totaal doorgaand verkeer via R40	3 420	2 590	3 199	-830	-24%	-221	-6%
Aandeel van het totaal inkomend verkeer	23%	19%	22%				

Tabel 6-6 Verkeer zonder bestemming binnenstad (= doorgaand verkeer) voor avondspits (16u-18u) op basis van kentekenonderzoek. (Bron: kentekenonderzoek Stad Gent, verwerking TML)

The above two tables show the amount and percentage of through traffic on the R40 in the morning and evening rush hours for the inner city.

SEGMENT R40	INTENSITEITEN R40 IN WIJZERZIN - OCHTENDSPITS						
	VOOR-METING	NA-METING 1	NA-METING 2	VERSCHIL VOOR - NAMETING 1	%	VERSCHIL VOOR - NAMETING 2	%
St. Lievenslaan na Keizerspoort	1832	2165	2364	+333	+18%	+532	+29%
C. de Kerchovelaan voor Kortrijksesteenweg	867	977	976	+110	+13%	+109	+13%
Ijzerlaan na Kortrijksesteenweg	830	869	959	+39	+5%	+129	+16%
Einde Were voor Overzet	1065	797	983	-268	-25%	-82	-8%
Rooigemlaan voor Drongensesteenweg	872	807	962	-65	-7%	+90	+10%
Rooigemlaan voor Brugsesteenweg	662	810	863	+148	+22%	+201	+30%
Gasmeterlaan na Palinghuizen	576	621	627	+45	+8%	+51	+9%
Dok-Zuid voor Dampoort	732	815	762	+83	+11%	+30	+4%
Kasteellaan na Dampoort	693	968	961	+275	+40%	+268	+39%
Sint-Lievenslaan voor Keizerspoort	1367	1687	1549	+320	+23%	+182	+13%
GEMIDDELDE (gewogen volgens lengte van segmenten)	881	1000	1035	+119	+13%	+154	+18%

Tabel 6-7 Intensiteiten R40 in wijzerzin tijdens de ochtendspits (Bron: kruispunttellingen Stad Gent, verwerking TML)

SEGMENT R40	INTENSITEITEN R40 IN WIJZERZIN - AVONDSPITS						
	VOOR-METING	NA-METING 1	NA-METING 2	VERSCHIL VOOR - NAMETING 1	%	VERSCHIL VOOR - NAMETING 2	%
St. Lievenslaan na Keizerspoort	1775	2095	2085	+320	+18%	+310	+17%
C. de Kerchovelaan voor Kortrijksesteenweg	1103	1399	1074	+297	+27%	-29	-3%
Ijzerlaan na Kortrijksesteenweg	994	1326	1244	+332	+33%	+250	+25%
Einde Were voor Overzet	1767	1219	1505	-548	-31%	-262	-15%
Rooigemlaan voor Drongensesteenweg	1458	1400	1597	-58	-4%	+139	+10%
Rooigemlaan voor Brugsesteenweg	906	918	1113	+12	+1%	+207	+23%
Gasmeterlaan na Palinghuizen	476	556	562	+80	+17%	+86	+18%
Dok-Zuid voor Dampoort	841	788	782	-53	-6%	-59	-7%
Kasteellaan na Dampoort	712	1036	1014	+324	+46%	+302	+42%
Sint-Lievenslaan voor Keizerspoort	1248	1576	1285	+328	+26%	+37	+3%
GEMIDDELDE (gewogen volgens lengte van segmenten)	1033	1128	1140	+96	+9%	+108	+10%

Tabel 6-8 Intensiteiten R40 in wijzerzin tijdens de avondspits (Bron: kruispunttellingen Stad Gent, verwerking TML)

The above two tables show the clockwise traffic flows at various points on the R40 in the morning and evening rush hours and, in the final row, the average flow, before and after the

implementation of the Circulation Plan.

SEGMENT R40	INTENSITEITEN R40 IN TEGENWIJZERZIN - OCHTENDSPITS						
	VOOR-METING	NA-METING 1	NA-METING 2	VERSCHIL VOOR - NA METING 1	%	VERSCHIL VOOR - NA METING 2	%
Sint-Lievenslaan na Keizerspoort	1183	1478	1617	+295	+25%	+434	+37%
Kasteellaan voor Dampoort	740	986	1050	+246	+33%	+310	+42%
Dok-Zuid na Dampoort	1007	1267	1223	+260	+26%	+216	+21%
Nieuwevaart voor Palinghuizen	886	580	998	-306	-35%	+112	+13%
Rooigemlaan na Brugsesteenweg	1007	1044	1098	+37	+4%	+91	+9%
Rooigemlaan na Drongensesteenweg	999	969	946	-30	-3%	-53	-5%
Einde Were na Overzet	469	521	583	+52	+11%	+114	+24%
Ijzerlaan voor Kortrijksesteenweg	698	986	894	+289	+41%	+197	+28%
C. de Kerchovelaan na Kortrijksesteenweg	821	998	922	+177	+22%	+101	+12%
Sint-Lievenslaan voor Keizerspoort	1795	2020	1202	+225	+13%	-593	-33%
GEMIDDELDE (gewogen volgens lengte van segmenten)	908	1040	1016	+132	+15%	+109	+12%

Tabel 6-9 Intensiteiten R40 in tegenwijzerzin tijdens de ochtendspits (Bron: kruispunttellingen Stad Gent, verwerking TML)

SEGMENT R40	INTENSITEITEN R40 IN TEGENWIJZERZIN - AVONDSPITS						
	VOOR-METING	NA-METING 1	NA-METING 2	VERSCHIL VOOR - NA METING 1	%	VERSCHIL VOOR - NA METING 2	%
Sint-Lievenslaan na Keizerspoort	1552	2010	2094	+458	+30%	+542	+35%
Kasteellaan voor Dampoort	585	1002	1319	+417	+71%	+734	+125%
Dok-Zuid na Dampoort	842	1233	1290	+392	+47%	+449	+53%
Nieuwevaart voor Palinghuizen	612	766	912	+154	+25%	+300	+49%
Rooigemlaan na Brugsesteenweg	800	795	817	-5	-1%	+17	+2%
Rooigemlaan na Drongensesteenweg	799	889	817	+90	+11%	+18	+2%
Einde Were na Overzet	598	668	736	+70	+12%	+138	+23%
Ijzerlaan voor Kortrijksesteenweg	922	803	848	-119	-13%	-74	-8%
C. de Kerchovelaan na Kortrijksesteenweg	817	984	939	+167	+20%	+122	+15%
Sint-Lievenslaan voor Keizerspoort	1940	2286	1655	+346	+18%	-285	-15%
GEMIDDELDE (gewogen volgens lengte van segmenten)	908	1061	1070	+153	+17%	+162	+18%

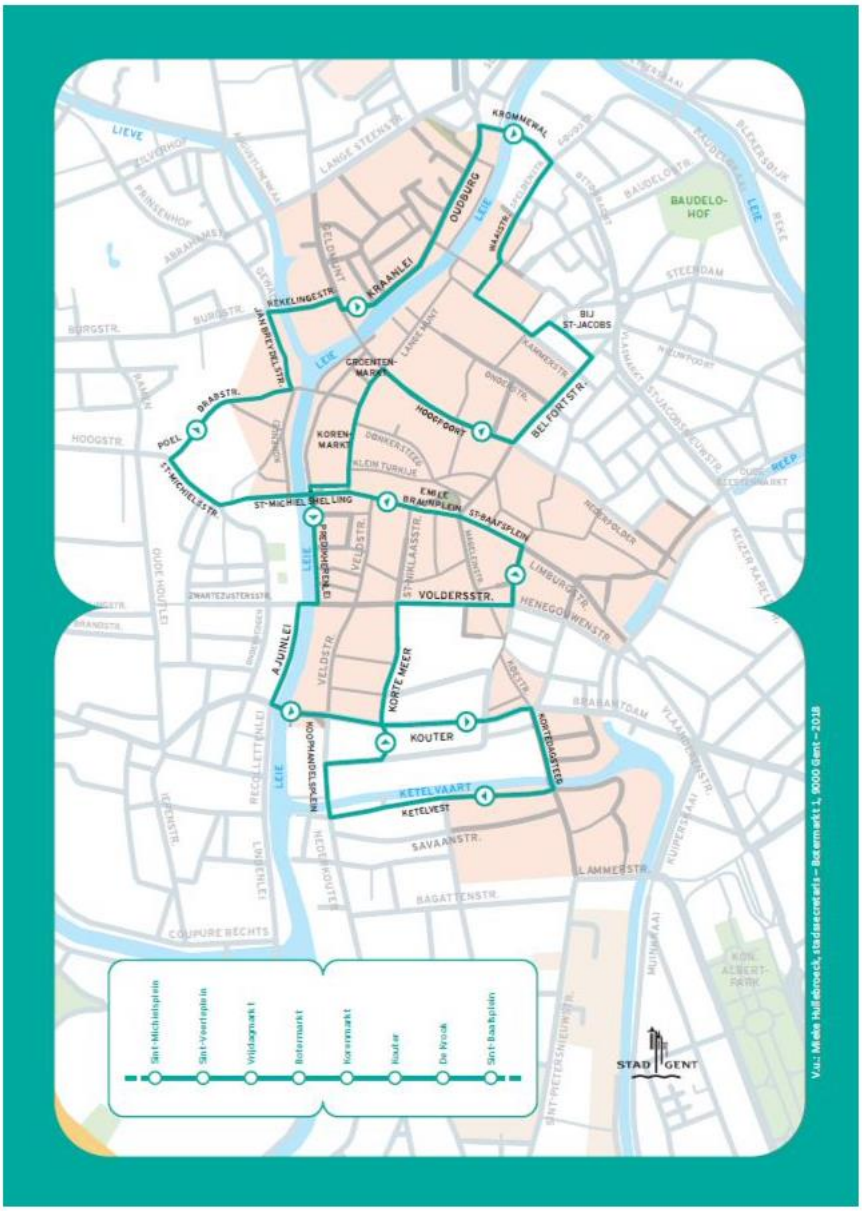
Tabel 6-10 Intensiteiten R40 in tegenwijzerzin tijdens de avondspits (Bron: kruispunttellingen Stad Gent, verwerking TML)

The above two tables show the anticlockwise traffic flows at various points on the R40 in the morning and evening rush hours and, in the final row, the average flow, before and after implementation of the Circulation Plan.

CATEGORIE (aantal onderzochte locaties)	STIKSTOFDIOXIDE (NO_2)	
	Evolutie jaargemiddelde [$\mu g/m^3$]	Evolutie jaargemiddelde [%]
R40 (5)	-3,7	-8%
Ontsluitingswegen (9)	-7,6	-18%
Woonstraten (6)	-10,2	-25%
Alle onderzochte straten	-7,4	-18%

Tabel 5-3 Evolutie van de gemiddelde NO_2-concentratie voor en na de invoering van het Circulatieplan op de R40, op ontsluitingswegen en in de woonstraten (Bron: Vlaamse Milieumaatschappij)

The table above shows NOx concentrations since implementation of the Circulation Plan on the R40, access routes and residential streets. Data is collected at 20 sites.



Figuur 6-18 Route wandelbus (Bron: Stad Gent)

The above map shows the route of the ‘walking bus’ which carries less mobile people through the central area. In 2018 it carried around 80,000 passengers.