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Summary Case for Change Report (Final)– Glasgow’s Transport Strategy 2021-31

**First stage of Glasgow’s Transport Strategy development – the
evidence for the case for change in Glasgow’s transport systems**

Summary report, June 2021

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Introduction

Glasgow City Council is developing a new transport strategy for the City in 2020/21, the **Glasgow Transport Strategy** (hereafter GTS). This 10 year strategy will update the existing Local Transport Strategy (2007-09) and provide an overarching framework for transport decision-making and investment in the city.

Alongside the overarching transport strategy, three further transport plans are being developed in 2020/21 which tackle specific areas and topics in Glasgow:

- A Liveable Neighbourhoods Plan.
- A City Centre Transformation Plan.
- An Active Travel Plan, updating the existing Strategic Plan for Cycling.

The Case for Change stage

The development of the GTS is following a best practice, multi-criteria appraisal approach as informed by Transport Scotland's Scottish Transport Appraisal Guidance (STAG). The Case for Change stage is the first part of this process. A **Full Case for Change report** for Glasgow City Council's GTS has been produced as of May 2021. It focuses on:

- Gathering evidence of problems the GTS needs to tackle – from data, research and engagement with the public and stakeholders.
- Identifying what it is we want to achieve with the GTS – outcomes and objectives.
- Starting a discussion on uncertainties - issues we need to monitor which could influence how we travel in the future.
- Developing a long list of the types of solutions and policy focus areas to consider. These will be further developed and assessed against criteria in the next stage of the work.

An Equality Impact Assessment (EqIA) Screening Assessment, Strategic Environmental Assessment (SEA) Screening Assessment and Scoping Report have informed the Case for Change report.

A **Draft Case for Change report** was published in September 2020 to support the **Public Conversation on Glasgow's Transport Future**. This was a major public and stakeholder engagement on transport issues in Glasgow. The findings of the Public Conversation are available at www.glasgow.gov.uk/connectingcommunities. The Full Case for Change report has been updated with the findings from that engagement exercise, and the Public Conversation has influenced the development of a long list of possible solutions for further consideration.

This **Summary Case for Change report** aims to present key elements of the full technical background report in a more user-friendly format.

Policy context and key drivers of decision-making

Transport is mainly a means to an end and a demand derived from other activities; such as the need to get to work or education; to healthcare services; to purchase or transport goods; to visit friends and family. Transport can be an **enabler** – it helps activity to happen by providing access and connections –and it can be a **barrier**. Transport policy cannot be developed in isolation – it must connect to many other policy areas in society.

A review of national, regional and local policy drivers has been undertaken for the Case for Change stage. The outputs of this, the key policy drivers the GTS must respond to, are summarised below.

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- **Key policy driver:** Inclusive growth with all benefitting from economic success, and all gaining from benefits of a move to a net-zero economy.
 - **From:** Scotland's Economic Strategy; Core goal in Glasgow Community Plan and Council's Strategic Plan; Just Transition Commission on Climate Change.
- **Key policy driver:** Tackling poverty and improving access to opportunity and wellbeing by those on low incomes or in poverty in particular.
 - **From:** Fairer Scotland Duty; Glasgow City Council work programmes on tackling poverty and child poverty annual reporting; Equality Impact Assessment findings feeding into transport strategy.
- **Key policy driver:** Reducing discrimination or lack of access to opportunity.
 - **From:** Equality duty on all public bodies and Glasgow's Equality Outcomes; Accessible Transport Framework and Action Plan for Scotland; Equality Impact Assessment findings feeding into transport strategy.
- **Key policy driver:** Low carbon economy and society, clean energy for transport.
 - **From:** Climate Change Act duty on public authorities and updated emission targets by 2045; Scotland Energy Strategy, 50% of energy in Scotland from renewables by 2030; Targets from Scottish Government Climate Change Plan on private car kilometres, diesel & petrol cars; 2030 carbon neutral target for Glasgow and action on associated Climate & Ecological Emergencies.
- **Key policy driver:** Transport statutory duties and national investment hierarchy which focuses first on managing demand, maintaining and getting the most from what we have.
 - **From:** National Transport Strategy for Scotland, Roads and transport legislation in Scotland.
- **Key policy driver:** Liveable places for people, applying the sustainable travel hierarchy and having high quality, clean and health-promoting places with greening and biodiversity improvements
 - **From:** Glasgow City Council's City Development Plan and Placemaking Principle; National Transport Strategy and sustainable travel hierarchy; Infrastructure Commission focus on place; Glasgow Open Space Strategy; Air Quality statutory duties on local authorities.
- **Key policy driver:** A transport system that is fit for purpose for a world class city & region, and supports an agile, connected, liveable and inclusive city, and the principles of people and places.
 - **From:** Connectivity Commission; Glasgow's Economic Strategy; Glasgow City Region Economic Action Plan; Glasgow Commission for Economic Growth.
- **Informing and driving** Glasgow City Council transport policy set out in the new Glasgow Transport Strategy.

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Public and stakeholder engagement to date

The Case for Change stage has been directly informed by public and stakeholder engagement in 2019 and 2020. Some engagement was carried out early in 2020 to inform an initial scoping of problems and opportunities on transport issues in Glasgow. This early engagement comprised the following:

- An online survey of Council officers internally across various team, receiving over 50 responses
- An internal workshop with Council officers with nearly 40 attendees from multiple teams
- Two workshops with invited stakeholders in February 2020 in the Lighthouse, Glasgow
- One to one discussions with some stakeholders to explore issues in more detail across 2020

A set of problems was then devised to test in the Public Conversation on Glasgow's Transport Future, a major public engagement on transport in Glasgow in September-October 2020. A consultation report has been published at www.glasgow.gov.uk/connectingcommunities.

It should be noted this engagement work focused on transport issues in the City that need to be considered in all new transport plans – the Glasgow Transport Strategy; a City Centre Transformation Plan; a Liveable Neighbourhoods Plan and Active Travel Plan.

The findings from these engagement processes have informed the Case for Change for the GTS. In particular, the Public Conversation helped to finalise the problems to be tackled, confirmed the outcomes proposed for transport strategy work in the city and detailed objectives; and helped to inform the long list of possible solutions to consider.

Problems to be tackled in the GTS

The Case for Change stage for the GTS identified some key problems the new transport strategy needs to tackle. This was informed by analysis of data and previous research, as well as substantial public and stakeholder engagement. Here are some summary findings from this work.

Baseline evidence of problems from data analysis

Analysis of data, previous research and engagement was carried out in 2019 and 2020 to help build an evidence base for problems to be tackled. Some headline findings from this work are presented below by theme. Data has generally been presented for a baseline of c.2018 where available.

Key insights into people's travel choices

The main mode of travel for the journey to work in Glasgow is by car, in terms of the single highest proportion of people travelling in a specific way. In contrast to the Scottish average however, the overall majority of people in Glasgow who travel for work do not travel by car.

The 2011 Census showed that in general, there is a higher reliance on cars for journeys to work in areas further from the city centre, and that journeys to work are made within a city-region spatial context.

Glasgow also sees the second highest rail-based commuting figures in Scotland (after West Dunbartonshire), and the second highest bus-based commuting in Scotland (after Edinburgh).

Glasgow has a higher than average proportion of commuting trips made by bike (5% compared to the Scotland average of 2.8%, and 7% in Edinburgh).

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45% of SPT's Regional Transport Strategy (RTS) survey respondents in Glasgow in 2019 said they had encountered issues on their journey to work, with reliability and cost being the top issues for rail and bus users.

Walking is the single biggest mode of travel to school in Glasgow – however, in relation to Scotland averages, less children walk to school in Glasgow and more are driven, which presents a problem.

The overall proportion of children travelling actively to school in Glasgow (walking, cycling, scooting) has reduced over a ten year period based on Hands Up Survey Scotland data, and walking in particular has reduced whilst cycling and scooting has increased. This points to a need to ensure the overall active travel share of the journey to school is increasing, and car journeys are reducing.

Analysis by the Council shows the average distance from school by enrolled pupils to be 1.25km (0.8miles) for primary schools. For secondary schools in Glasgow, the average distance from school for pupils is 2.35km (1.5miles). This represents an opportunity to build on, particularly for active travel journeys to school.

The journey to access healthcare was an issue for many Glasgow residents in the SPT RTS survey (a third of the overall Glasgow sample), with the main issues being lack of direct public transport services, followed by frequency, reliability and cost of public transport. Paying for taxis or arranging for a lift was a common response, and a third of the question respondents said they had been late for appointments.

Google data suggests over 70% of trips are made within Glasgow's boundary. That still leaves just under a third of trips which involve movements across the city boundary, and this matters for what Glasgow City Council can do in relation to encouraging sustainable travel choices. Compared to Edinburgh, Glasgow has a lower proportion of Glasgow residents working within Glasgow (60% v. 72% for Edinburgh). This suggests there should be emphasis on trying to transfer larger proportions of these inbound and outbound journeys to public transport.

There is sizeable scope for modal shift for shorter journeys in Glasgow as almost 50% of journeys are under 3km in length, and 70% are less than 5km.

Almost one in ten (9%) Glasgow Household Survey respondents said they never travelled to the city centre during the day, rising to 39% during the evening. Those in social classes ABC1 were more likely than C2DEs to travel into the city at both times of day. This should be noted for an inclusive city centre in the future.

Commuting and shopping are the biggest reasons for travelling in Glasgow, with more travelling for shopping in Glasgow than other comparable urban areas.

Key insights from movements of vehicles

Whilst the majority of vehicle kilometres in the Glasgow City Council area are on local authority roads, the share of vehicle kilometres on local authority roads in the Council area has reduced from 66% of vehicle kms on all roads in 1995 to 58% in 2018. Vehicle kilometres (a key metric to demonstrate traffic volumes) continue to rise in the City Council area though the largest increase is on the trunk road network, whilst the local roads network has seen less change over 20 years, and indeed peaked in 2007. There is some evidence this has been rising again slowly since 2013. Vehicle kilometres on the trunk road network meanwhile has been steadily increasing over time and at a higher rate than on local roads.

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Data from the Council's Automatic Traffic Counter network for 2014-18 suggests around 25% of daily traffic flows are between 7am and 10am. There has been a growth in outbound flows generally over this period in contrast to a reduction in inbound flows. This might suggest there has been a growth in residents travelling across the city boundary for work (and other) purposes

Traffic congestion is a difficult concept to define and measure, and can also be a relative concept. The Scottish Household Survey includes a measure of congestion as perceived by residents. Figures for 2016-18 (and also for 2017-19) suggest 15% of Glasgow car driver respondents felt their journey had been delayed by congestion, higher than the Scottish average of 12.5%, though lower than the average for large urban areas in Scotland (16%). Some measures of congestion in Glasgow are not as pronounced as in e.g. Edinburgh or some other UK cities. The focus on congestion appears to be mainly on the motorway network, though traffic levels do impact on bus journey time reliability on a number of key corridors within Glasgow City Council area such as Great Western Road, Maryhill Road, King George Bridge and Glasgow Bridge. Pre-Covid19 modelling forecasts rising traffic levels in the future across the strategic and local road network, with the impacts of congestion particularly pronounced on the motorway network though not exclusively.

In general, further analysis is required to understand the potential impact of trends accelerated by Covid-19 on previous assumptions around future traffic growth. Covid-19 in 2020 also saw a change in distribution of traffic across the day, with a decline in AM peaks.

The number of vehicles licensed per 1000 population in Glasgow, at 385, is the lowest in Scotland of any local authority. 46% of households in Glasgow do not have access to a car. This rises to over 70% when considering households in social sector tenure only. Analysis suggests there is a clear correlation between 2020 Scottish Index of Multiple Deprivation (SIMD) income domain ranking and household access to a car in Glasgow (lower income, less likely to have access to a car).

From the SPT RTS survey of Glasgow residents, when asked what would encourage them to use their car or van less, the top responses referred to better public transport.

Key Insights: public transport in Glasgow

Passenger journeys on Glasgow's Subway have shown a mixed pattern in recent years, with peak usage in 2007/08, although SPT data on station gate entries suggests use of the Subway increased in 2018/19, recording the highest number of entries in 5 years (pre-Covid19). The busiest stations tend to be in the centre of the city and the north/west.

Rail patronage continues to grow overall in the region (pre-Covid). The fastest growing stations over the last 5 years includes Dalmarnock in the south-east of the city, linked to the Glasgow City Region City Deal programme and Clyde Gateway project. After Central and Queen Street, the top 4 busiest stations in the City are to the west – Partick, Charing Cross, Exhibition Centre and Hyndland. ScotRail have identified capacity constraints at Central as an issue in the Scotland Route Study, and forecast several connections to Glasgow Central seeing more demand than capacity by 2043. Higher growth scenarios assume road congestion to grow as a problem in Glasgow.

Rail users in Glasgow have a higher level of satisfaction with some aspects of the rail experience compared to the average for large urban areas in Scotland.

Public transport patronage generally has been significantly affected by Covid-19 in 2020, and the ongoing impacts of this on the demand for public transport must be monitored.

The key **problems** that need to be tackled in relation to buses in Glasgow are suggested to be:

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- Bus passenger numbers have been declining in the region, following a Scotland and UK wide trend.
- There are concerns from bus operators that bus journey times are variable. Specific road segments where bus journey time is particularly variable have been identified by one of Glasgow's bus operators. Bus speeds appear slow throughout the day in Glasgow though this needs to be compared with other urban areas to draw any conclusions.
- Satisfaction levels with bus travel are lower from bus users in Glasgow compared to other urban areas in Scotland, although higher than the Strathclyde region and Scotland as a whole. The cost of buses was the topic people were least satisfied with, from Scottish Household Survey data in 2019.
- Key reasons commonly cited in qualitative surveys on barriers to bus use are lack of available services going to where people need to go, and poor reliability.

The **key opportunities** in relation to public transport that can be built upon in Glasgow include:

- There is a relatively high use of buses in Glasgow generally, particularly for commuting. This coupled with a relatively high proportion of the population without access to a car, and a relatively dense population, suggests demand for non-car modes of travel. Similarly, there is a relatively high use of rail in Glasgow and an extensive rail network. The Subway is an important part of the public transport offer in Glasgow, and there is an ongoing modernisation programme by SPT.
- There is a bus partnership in place in Glasgow, and the Transport (Scotland) Act 2019 provides for Bus Service Improvement Partnerships (BSIP) as well as providing local authorities with enhanced powers in relation to bus services.
- Work on decarbonisation of the rail network in Scotland is ongoing with targets and a recently published plan. This will also support cleaner air in and around stations in Glasgow with the phasing out of diesel trains.
- The LEZ scheme in Glasgow City Centre has already led to cleaner buses, and there are ongoing funding opportunities from Transport Scotland for bus operators to invest in cleaner engines, which will support air quality objectives in Glasgow.

Key Insights: Walking and Cycling in Glasgow

Glasgow slightly lags behind other large urban areas in Scotland in terms of the proportion of people who walk for journeys (though it has comparatively more people using public transport than other large urban areas in Scotland). Walking still remains a very important mode overall however, particularly for the journey to school.

Walking for leisure in Glasgow is at a lower level than comparable urban areas. Conversely, cycling for physical activity in Glasgow is now slightly ahead of the Scottish average. Participation in walking varies by ranking of deprivation, with those in more deprived areas less likely to participate. This is a challenge for inclusion.

When asked what would encourage them to walk more for journeys, the most frequently selected responses in the SPT RTS survey of Glasgow residents related to the quality of walking infrastructure (surfacing, less obstructions), personal security and safety issues (walking routes that feel safe and secure, more pedestrian crossings on busy routes, more lighting), and directness of routes as well as better air quality.

In Glasgow in 2018, some 73% of households had no private access to a bike according to the Scottish Household Survey. This is substantially higher than the Scotland average and higher than the comparable figure for large urban areas in Scotland. The Glasgow Household Survey in 2017

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found a similar proportion without access to a bike, and highlighted that men, those aged between 35 and 54, ABC1 professional groupings (generally higher income) and households with children were more likely to have access to a bike. This is a challenge for uptake of cycling in the city, and there is other evidence to suggest those on lower incomes are least likely to have access to a bike. It should be noted there are a number of community-based projects in Glasgow that are tackling inclusive access to bikes.

The Glasgow Household Survey 2017 found that for journeys around Glasgow, only 8% of respondents said they regularly used a bicycle compared to 53% who said they regularly walked. The SPT RTS survey found a slightly higher proportion of Glasgow residents who said they cycled for journeys at least a few times a week.

The Glasgow Household Survey in 2017 showed that the proportion cycling for commuting had doubled since the last time this question was asked in 2011. Recreation was the main reason people cycled.

In terms of modal share, the Scottish Household Survey in 2018 suggested 5% cycle to work, which is higher than the average for Scotland though lower than Edinburgh. Cycling for the journey to school is less than 1% which is consistent with the picture nationwide.

When asked what would encourage them to make cycling journeys more often, the quality and availability of cycling routes / infrastructure was the main category of responses selected by Glasgow residents in the SPT RTS survey. This includes more cycle routes away from roads, more direct cycle routes, better quality surfaces. Better driver attitudes towards cyclists was also mentioned frequently.

Finally, cycling has been increasing in the city over the past decade, as measured by counts at particular locations in the city centre.

Key insights from housing and demographics for travel demand

Key messages from a review of housing and demographic data include:

Glasgow has:

- A relatively young population, and a high working age population. Younger age groups tend to live in or around the city centre.
- A growing population.
- A compact, dense population, with a significant proportion living in flats/tenements. Population density in Glasgow is generally higher north of the river in the City.

Problems:

- It is traditional to assume that a growing population generates new travel demand – however, this has to be monitored carefully in coming years as emerging evidence suggests travel demand is declining for a number of reasons. The legacy of Covid19 may also have an impact.

Opportunities:

- Glasgow's population is projected to grow by 2.9% from 2018 to 2028, with the largest component of this being net migration.

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- There is a market for sustainable, collective transport (buses, heavy rail, light rail) due to a high population density, and an opportunity to ensure planning policy supports a compact city in the future.
- A younger population may be more open to technology to support travel decisions, and there is evidence that younger people are less likely to want to use or own a car. This particularly applies to the city centre, where policy goals exist to double the residential population. Glasgow Household Survey data suggests younger people are more likely to consider living in the city centre, and least likely to want to have access to a car.

Key insights from equalities and inclusion for travel demand

There is a wealth of evidence that transport has differential impacts on different populations, and often negative impacts on specific population groups. This must be taken into account in relation to:

- engagement during the development of the new Glasgow Transport Strategy, to ensure all sections of the population have their say and contribute. The EqIA screening work directly informed the approach to the Public Conversation and community engagement in particular; and
- policies and projects and investment decision-making within and as a result of the new transport strategy, to ensure inequalities are not deepened – and moreover, to tackle and reduce inequalities.

Some of the biggest differential impacts from transport relate to:

- The type of mode people tend to use for journeys (this is not equal amongst all population groups, and therefore investments in each mode must take this into account).
- Access to the tools needed to make a journey is not equal amongst populations – be it a car, bike, public transport services.
- Those on lower incomes and in poverty generally are affected in multiple ways by transport barriers, and are also more likely to suffer from other differential impacts e.g. health inequalities.
- Initial public transport accessibility analysis by University of Glasgow's Urban Big Data Centre suggests that women generally have longer travel times to access key destinations in the city, as do people in the most deprived parts of the city as ranked by SIMD. Younger people tend to have better accessibility due to being more likely to live closer to the city centre. Some ethnicities are clustered in parts of the city, which matters for public transport provision as access to a car can vary substantially by ethnicity.

Key insights from employment and jobs

There is evidence that transport can be a significant barrier to taking up jobs and training, with one in ten respondents to the Glasgow Household Survey saying they had been unable to apply for, or accept, a job whilst living in Glasgow because it would have been difficult to get to or from the place the job was based. This was even more the case for those without access to a car, and was slightly more of an issue for people in the north of the city as opposed to the south.

The largest sectors of employment in Glasgow in 2019 were human health and social work activities, administrative and support services, and wholesale and retail trade, repair of motor vehicles and motorcycles. This has implications for travel demand, and how this travel demand may change in the future, and further work would be useful to describe the characteristics of travel demand associated with different employment sectors.

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Mapping of jobs in the City demonstrates a high proportion of jobs in the city centre area, as well as the west of the city around Braehead and Hillington, and a general westward corridor from the city centre. At 35.5%, Glasgow has a higher proportion of workers classed as 'low skilled' than the UK Core Cities average of 34.1%

Initial public transport accessibility analysis by University of Glasgow suggests those in the most deprived parts of the city have access to the lowest number of jobs within a 30 minute travel time.

Clearly the location of jobs now and potentially in the future should be one of the factors to help shape investment decisions in transport services and infrastructure.

Key insights from environment, energy and emissions from transport

The key problems that need to be tackled under this theme include:

- Transport sector accounts for around a third of greenhouse gas emissions and has not been declining as fast as other sectors. By mode, passenger cars are the largest source of greenhouse gas emissions in Scotland.
- Proportionally, transport consumes the lowest share of energy in terms of GWh in Glasgow compared to industry & commercial, and domestic, though this is largely aligned with the national picture. Glasgow consumes less energy for the transport sector compared to some larger and more rural authority areas such as Perth & Kinross and North & South Lanarkshire authorities. Over the last 10 years, energy consumption by personal transport in Glasgow has reduced although freight transport consumption has increased, particularly diesel LGVs.
- In terms of fuel consumption, diesel cars and diesel light goods vehicles have seen the largest growth in the last decade in Scotland.
- Road transport still relies almost completely on fossil fuels (over 95% of energy used).
- Despite improvements in local air pollutants, tyre and brake abrasion are still substantial sources of particulates and this remains a problem for low or zero carbon vehicles of any kind.
- CO2 emissions overall have reduced in Glasgow since 2005, as have CO2 emissions from transport. As a proportion of all CO2 emissions in the local authority area however, the share from transport has increased in recent years. CO2 emissions have increased since 2005 in Glasgow from the motorway network and partnership working is therefore required.

There are also many opportunities to build upon:

- Air pollutants NOX, PM10 and PM2.5 have steadily reduced in Scotland from a baseline of 1990, including from transport – though transport's share has increased as other sources have reduced. Glasgow's Low Emission Zone has helped to reduce harmful air pollutants from vehicles, at a rate that would otherwise not have been achieved. The Low Emission Zone in the city centre will help to improve the standard of all vehicle engines in terms of local emissions.
- Hydrogen is being explored for fleet transport in Glasgow City Council as articulated in the Council's Fleet Strategy and for rail in Scotland as per Transport Scotland's Rail Services Decarbonisation Action Plan.
- Transport Scotland have committed to decarbonising Scotland's railways by 2035 and this will benefit Glasgow in terms of carbon emissions and local air quality as stations in the city

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are still served by some diesel trains. In recent years, there has been significant investment by Transport Scotland in electrifying rail on major lines serving Glasgow.

Problems from public and stakeholder engagement

The Public Conversation document (and associated survey) listed a number of problems linked to transport, largely based on the Draft Case for Change report and data analysis above. The aim of this was to reassure the public and stakeholders that the Council was aware of transport-related problems from previous research and consultations, and to seek validation or challenge to this. The online survey asked respondents to select which problems were important to them, and the results are shown in the table below.

Table 1 Problems presented in the Public Conversation and % of survey respondents who selected them as important

Problem stated in survey	% of survey respondents who selected it	Number of respondents who selected it
Different ways to travel are not smart and integrated, including ticketing	74%	2136
High cost of transport particularly public transport	70%	2034
Safety concerns over cycling on road and lack of a complete cycling network	67%	1947
Rising traffic levels and congestion	65%	1875
Poor air quality and health problems from vehicle emissions	60%	1739
Poverty and unequal access to transport	59%	1702
Transport's role in climate change particularly cars	55%	1585
Less people walk for journeys than comparable areas and people want better quality and safer places to walk	51%	1477
Reliability issues with bus journey times	50%	1458
Complicated governance of transport in the City (lots of organisations involved)	50%	1451
Physical and mental barriers created by motorways and busy roads	44%	1273
Health inequalities and unequal participation in active ways to travel i.e. walking and cycling	43%	1233
Rising numbers of vans and light goods vehicles, with associated emissions	37%	1082
Bus use is declining	33%	952
Mobility difficulties and resulting unequal access to transport	32%	938
Transport as a barrier to economic success	26%	744

Transport issues that affect people the most in their own words

The survey also asked an open question around problems that mattered most to people, and which they wanted the Council to tackle in their new transport plans.

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The answers to this were qualitatively categorised, and each mention of a problem in a response was recorded in the analysis. The summary of this analysis is shown below, with the most frequently mentioned problems (over 100 mentions) highlighted in bold.

Table 2 Categorisation of transport problems from the online survey open question

Problem	No. of mentions
<i>Equality</i>	
Disability-related mobility and transport problems	87
<i>Built & natural environment</i>	
Not enough green spaces/ planting	18
Better use of the river as a transport corridor	4
Car-dominated spaces/design/ decisions; too easy to use car	138
<i>Social environment</i>	
Hostile road environment to cycle / driver behaviour [<i>not</i>	92
Lack of public/ stakeholder engagement	10
Cycling behaviour	64
Unsafe journey to school	35
Safety concerns using public transport or active travel	126
<i>Strategic approach</i>	
Strategy and governance	96
<i>Health and wellbeing</i>	
Covid-19 related problems	43
Air and noise pollution and climate change	212
<i>Transport-related</i>	
Lack of local bus connections / infrequent services	108
Issues for motorised vehicles	56
Barriers to mobility	31
Lack of public transport connections between different parts	292
Public transport long journey times generally	172
Lack of Park & Ride options	9
Bus / train reliability issues	307
Public transport quality issues (inadequate service, cost,	570
High cost of public transport	438
Lack of pedestrian priority & poor walking environment	261
Anti-car policy	63
Lack of multi-modal, smart/integrated ticketing	291
Lack of public transport integration	281
Lack of protected cycle lanes / cycling network fragmented and	667
Lack of tram/metro/more fixed line public transport/Subway	233
Fragmented public transport system / public transport	216
Covid-19 related problems	43

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Problem	No. of mentions
Parked vehicles causing problems	130
Lack of information on how to travel (including public transport	88
Road infrastructure problems e.g. maintenance, signage	134
Electric vehicle/low carbon vehicle problems - lack of charging,	17

Community discussions – main problems identified

Below is a short summary of the problems which were discussed in the community conversations, highlighting some of the impacts of transport.

- The high cost of public transport, especially relative to low incomes.
- Disability-related problems with transport including a lack of physical accessibility and many other barriers to travel caused by a complex and unreliable system, lack of assistance, poor information, lack of toilet facilities, and poor attitudes of staff and passengers.
- The lack of adequate transport options (including in evenings and a weekends) in some parts of the city, particularly between neighbouring communities and within local communities, and to key services and facilities such as healthcare, schools and food.
- Lack of integration in the public transport system and unequal access to public transport across the city. Different modes of transport not linked together physically, with timings, or with tickets.
- Problems with personal safety on public transport, including discrimination, overcrowding, hate crime and sexual assault.
- Reliability of public transport, particularly buses.
- Inadequate walking environments which limit mobility and access to local services and contributes to feelings of neglect and poor mental health.
- Vehicle-dominated design and spaces in the city, with people walking and cycling competing for the same restricted space, and mobility limited by parked vehicles.
- Cycling related problems, including lack of confidence, lack of access to bikes and storage, lack of safe places to cycle and uneven distribution of cycle infrastructure across the city.
- Road infrastructure issues including maintenance and poor surface water drainage further limiting active mobility.
- Absence of everyday services like fresh food and education in some neighbourhoods.

Stakeholder inputs on problems

Problems were also discussed at the two stakeholder workshops and raised in stakeholder organisation submissions to the Public Conversation. Problems raised by stakeholders *in addition* to the list presented in the Public Conversation above, or particularly reinforced by stakeholder organisations, included the following:

- Overall design of the city in recent history to focus on the car. This is particularly a problem now for climate change and emissions.
- Congestion in the city and number of motorised vehicles, impacting on people on bikes and also particularly on buses and leading to journey time delay and variability.
- Parking related issues around schools and from heavy vehicles, and lack of enforcement.
- Impacts of heavy goods vehicles on local communities and fabric of the road/footway network.
- Poor public transport access to hospitals.
- Complex bus operating system with a lack of publicly-owned buses, failure of bus privatisation and lack of public transport integration.

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- High cost of public transport and impact on low-income workers.
- Inequality of public transport connections for outlying areas particularly in areas of deprivation. Inadequate bus services within and to communities in some parts.
- Lack of Park and Ride and public transport interchange opportunities in some parts of the city.
- Train stations inaccessible to those with mobility difficulties. Still significant issues overall in the transport system for people with disabilities, including less visible conditions like epilepsy.
- Lack of support for public hire taxis in Glasgow, and the need to recognise them as part of an integrated public transport system.
- Still new build development with lack of facilities within walking distance, and issues with the quality of walking infrastructure and public realm in parts of the city.
- Lack of cycling network, including in green spaces.
- Lack of cycle storage particularly for tenements.
- Lack of cross-boundary active travel links. The need to tackle cross-boundary trips overall.
- Rise in serious injured cycling casualties in the last 10 years.
- Tension between users in shared space and some concerns over anti-social cycling behaviour.
- Lack of adequate surface public transport access to Glasgow Airport.
- Lack of access to data due to silos and restrictions, which is making it hard to develop solutions and be innovative.
- The need to support transport and access-related issues for businesses and the city centre, particularly in recovery from Covid-19.
- Lack of consultation on cycle lane implementation, anti-car policy in the city.

Issues raised by Community Councils are included in the list above. At a local level, Community Councils raised issues in particular around:

- The impacts of parking on their communities and perceived lack of enforcement, and sometimes lack of parking for local public transport interchanges. Conversely, some concerns parking is too restricted in some areas and impacting on families and local businesses.
- The lack of accessible local rail and Subway stations.
- Inadequate bus services and connections to nearby areas and crucial services such as health. High cost of buses, lack of integrated ticketing and failure of bus privatisation.
- Speeding concerns.
- Environmental pollution issues from high traffic levels on some routes.
- Concerns over conflict between pedestrians and cyclists in shared spaces.
- Lack of adequate walking and cycling infrastructure locally.
- Impacts of heavy vehicles on local roads and pavements, and historic buildings.

Future uncertainty

In this Case for Change work, scenario planning is being considered to recognise uncertainty in a time of significant change in society, and the world of transport. A light-touch approach has been applied to date, which has helped to identify a range of drivers of change which the transport strategy should acknowledge and take into consideration in policies and projects. This work will continue throughout the development of the Glasgow Transport Strategy.

The focal issue for the scenario planning process in this workstream is travel demand. That is, the demand to travel – to where, for what purpose, by what means and when.

Here are some of the big areas of change that may influence travel demand. We need to monitor these issues, and also ensure the GTS appraisal process takes these uncertainties into account as far as possible. This will be done in the next stages of the GTS development, by assessing alternative

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solutions against different scenarios of change to see how resilient the solutions are. These factors of change will also be developed further.

Table 3 Summary of factors that may influence travel demand in the future

Factors which may influence travel demand in the future
Covid-19 has changed when and for what purpose we travel - less commuting, more online service access, less peak-time journeys, shift in employment sectors
Population change - Glasgow has a relatively young population for now, the population is forecast to grow including in-migration, the city centre residential population will grow
The world of work - more flexible working, more automation, more job uncertainty and new models of employment
Consumer choices - more online shopping, moving towards an experience-based economy instead of consumption, changing environmental values & awareness, work/life balance
Technology - more automation and digital services including healthcare & education, 5g and faster networks, smart city technologies. AI, big data and the 'internet of things'
Governance - more localised decision-making and community empowerment, more funding streams linked to low carbon economy, regulatory framework & governance changes
Energy - targets for renewable energy, phasing out petrol & diesel cars, supply & price of electricity, role of hydrogen
New modes of mobility, disruption in the marketplace, connected and autonomous vehicles

Summary of problems to be tackled and opportunities to build upon

Drawing on all the evidence presented in the Case for Change stage, from policy reviews, data analysis, review of previous research and public and stakeholder engagement, a list of key problems to be tackled in Glasgow's new transport-related plans has been produced.

- Vehicle kilometres and traffic volumes continue to rise in Glasgow, particularly (though not exclusively) on the trunk road network. Vehicle dominated spaces were raised as a problem in the Public Conversation - from parking, to speeding to people on foot or on bikes feeling secondary to cars.
- Large proportion of population in Glasgow have no access to a car – a problem and an opportunity. There is a correlation with SIMD and no access to a car in Glasgow. There is also unequal access to a bike, and this varies by social-economic group. Unequal access to the transport system, particularly in certain parts of Glasgow, was commonly cited in the Public Conversation.
- The topic of better governance of transport has been raised in several reports - at the national level, and at a regional & city level by the Connectivity Commission. Also cited as a problem in relation to public transport from the Public Conversation, with a desire for a publicly run public transport system which is integrated and affordable.
- There are significant differential impacts from transport in Glasgow, as evidenced by the Equality Impact Assessment work and evidence in this report. Those on lower incomes and in poverty generally are affected in multiple ways by transport barriers, and are also more likely to suffer from other characteristics e.g. health inequalities.
- Lack of a connected cycling network for all journeys, and people still want safe places to cycle separate from traffic. Confirmed as a key problem in the Public Conversation.

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- Lack of access to bikes, and lack of safe cycle storage in some parts of the city raised as problems in the Public Conversation.
- As with Scotland as a whole, there is still much to be done in reducing the proportion of children being driven to school. Local impacts of too many vehicles around schools cited as a problem in the Public Conversation.
- Cross-boundary trips contribute particularly to carbon emissions in the region, and this requires a partnership, region-wide approach to this aspect of travel demand. Lack of cross-boundary active travel links cited in Public Conversation.
- Rail capacity constraints are forecast at Glasgow Central in coming years.
- Bus is a significant mode in Glasgow, but like elsewhere in the UK, passenger numbers have been declining.
- Public Conversation showed people are least satisfied with buses, and then Subway, rail to a lesser extent. Public transport quality problems featured highly in Public Conversation (reliability, cost, cleanliness, availability etc).
- Cost of transport and public transport (and buses) in particular, and impact of this on people on low incomes and young people. Satisfaction levels with the cost of bus fares is low. Problems confirmed in the Public Conversation.
- Operators report journey time reliability issues. Public Conversation highlighted poor journey time reliability as an issue for bus users.
- Lack of public transport connections cited as a key problem in the Public Conversation, particularly for some parts of the city. This includes bus links between some communities as opposed to the city centre, frequency and time of day. Specific locations included links to Glasgow Airport, links to healthcare and some large shopping centres.
- People would like to walk more for journeys, but cite quality of walking infrastructure, personal security and safety issues, and directness of routes and air quality concerns as barriers. Slightly less people walk for journeys compared to other large urban areas in Scotland.
- Transport sector accounts for around a third of CO2 emissions in Glasgow and has not been reducing as much as other sectors. Passenger cars are the largest source of CO2 emission in Scotland.
- Road transport still relies almost completely on fossil fuels. In terms of fuel consumption, diesel cars and diesel goods vehicles have seen the largest growth in the last decade in Scotland.
- Some previous consultations have raised the issue of major infrastructure acting as barriers in the city, such as motorways & Clydeside Expressway. Connectivity Commission raised the issue of road-dominated space.
- Connectivity Commission raised the issue of an economically-divided city, and public transport accessibility analysis to jobs suggests those in lower income areas have longer journey times.

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- Despite improvements in local air pollutants, tyre and brake abrasion are still substantial sources of particulates and this remains a problem for low or zero carbon vehicles of any kind. Air quality is improving but there is still work to be done.
- Covid-19 has introduced new uncertainties over the demand for public transport, and concerns that car use may increase. That said, it has also led to temporary improvements in walking and cycling infrastructure which could be built upon in the future. Public Conversation raised problems over supporting access to city centre post Covid19 in economic recovery.
- Relatively high levels of deprivation compared to rest of Scotland, and high levels of poverty and child poverty. Low life and healthy life expectancy.
- Lack of integration in the public transport network, including specifically a lack of integrated ticketing. Confusing and complicated public transport system for some, and cost impacts of having to buy multiple tickets across operators were cited. Also linked to transport governance issues above.
- Personal security concerns on public transport, particularly from young people, people from different ethnic groups and people from the LGBTQ+ communities. Public Conversation confirmed this as a problem, plus problems of perceived discrimination and hate crimes on public transport.
- Lack of accessible environments is still an issue for some in Glasgow, as evidenced by the Public Conversation. From inaccessible rail and Subway stations, to lack of disabled spaces on buses or in taxis, to specific needs not being catered for e.g. those with hidden disabilities.
- Impact of heavy goods vehicles on some communities cited as a problem by some stakeholders in the Public Conversation.
- Concerns over conflict between pedestrians and cyclists in shared spaces.
- Public Conversation showed some perceive an anti-car policy in Glasgow and many still rely on the car.
- Still a lack of joined up thinking/practice between land use planning and transport.
- Poor road and path maintenance in places cited in the Public Conversation, which causes issues for those on bikes and walking or wheeling.

A list of opportunities that transport policy and projects can build upon has also been developed:

- 2030 carbon neutral target and Glasgow climate and ecological emergency and associated actions.
- Existing targets for reductions of private vehicles in the city centre.
- National Transport Strategy for Scotland sustainable travel hierarchy, new outcomes, STPR2 is ongoing and RTS also in preparation.
- Transport Scotland rail decarbonisation action plan.
- Transport (Scotland) Act 2019 with new opportunities for changing bus operations, introducing Workplace Parking Levy (WPL), tackling pavement parking.

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- National targets on energy and climate change (carbon emissions) and air quality.
- Accessible travel framework in place in Scotland.
- Potential new funding streams including WPL, Infrastructure Levy and others.
- More community empowerment.
- Existing projects underway in the city and wider city region which will work towards outcomes.
- Less people travel to work by car in Glasgow than other areas, and more travel by public transport. In general, Glasgow's extensive public transport network is a strength to build on.
- High density city which makes provision of collective transport more efficient.
- There has been growth in cycling in recent years, and substantial investment in cycling infrastructure projects.
- Glasgow's Low Emission Zone has helped to reduce harmful air pollutants from vehicles, at a rate that would otherwise not have been achieved.
- CO2 emissions are reducing per capita in Glasgow, aligned with the reduction at a national level, though as a proportion of all emissions, emissions from transport has increased.
- Hydrogen and battery technology are an opportunity being explored in Scotland and in the region.
- Half of journeys in Glasgow are less than 3km, suggesting potential for modal shift to active travel for those who are able.
- From the SPT RTS survey of Glasgow residents in 2018, when asked what would encourage them to use their car or van less, the top responses referred to better public transport.
- Evidence suggests people have been travelling less in recent years, and Covid-19 may accelerate this trend. This could reduce the overall carbon impact of travel, though it could also have unintended consequences e.g. on the nature of city centres and demand for office space.
- Technological improvements are a significant opportunity to transform the travel experience and support more informed sustainable travel choices.
- Significant volume of projects by the Council, Glasgow City Region City Deal, Transport Scotland, Sustrans and many partners across the City – the city is improving each year and there is much progress to build upon.

Outcomes and objectives

Four outcomes have been developed for the GTS. These are what the GTS hopes to achieve over its 10 year lifespan. These were developed for and tested in the Public Conversation in September/October 2020. They were informed by policy review work, the analysis of evidence for problems and opportunities in the Draft Case for Change work, and some initial engagement with stakeholders during workshops in early 2020. During the Public Conversation, they received broad support.

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In addition to these outcomes, some more detailed transport planning objectives have been developed. These relate more directly to what the GTS hopes to achieve in transport terms, and they contribute to the outcomes. These were presented in draft form during the Public Conversation in the Draft Case for Change report and at stakeholder workshops. They have since been refined drawing on the Public Conversation inputs. Finally, a new transport vision has been developed for the GTS, articulating the type of transport system we are aiming for in Glasgow – again drawing strongly on input from the Public Conversation. These three elements – the transport vision, outcomes and objectives for the GTS - are presented below. The objectives will be used to assess potential solutions in the next stages of the work.

- **A vision for transport in Glasgow:** Vision for transport: A sustainable transport system for people and for goods, which is affordable and inclusive, accessible and easy to use, clean and safe, integrated and reliable.
- **Four outcomes for transport policy in Glasgow:**
 - Transport contributes to a successful and just transition to a carbon neutral, clean and sustainable city.
 - Transport has a positive role in tackling poverty, improving health and reducing inequalities.
 - Transport contributes to continued and inclusive economic success and a dynamic, world class city.
 - Places are created where we can all thrive, regardless of mobility or income, through liveable neighbourhoods and an inclusive City Centre.
- **Detailed transport planning objectives to guide decision-making in transport policy in Glasgow:**
 - To promote low carbon movement of people and goods in a resilient transport system that can adapt sustainably in the future.
 - To achieve clean air through sustainable transport investment and decision-making.
 - To encourage and enable physical activity and improved health & wellbeing through active travel.
 - To promote an affordable, inclusive, equitable and sustainable travel system.
 - To improve reliability, integration and convenience of sustainable travel modes for people and goods.
 - To ensure the transport system is accessible by all.
 - To improve the safety and personal security of all transport users and the public spaces that they use.
 - To deliver spaces for people first and foremost, with high quality public spaces which respect and respond to the natural environment, with an effective sustainable travel hierarchy.

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A long list of potential solutions and initial policy focus areas

To support public engagement on the topic of transport in Glasgow, and to start to consider what delivering the proposed four outcomes would involve, a series of initial policy focus areas were developed for feedback and discussion during the Public Conversation in 2020. These were tested in the Public Conversation, and the results from the online survey are shown below, together with some commentary received in individual stakeholder submissions.

Table 4 Online survey responses to policy focus statements

Policy focus statement – online survey responses	Support this policy focus	Neutral	Do not support this policy focus
Investment in cycling infrastructure to produce a city-wide network that people feel safe to cycle on (presented in our updated “Active Travel Plan” which will replace our existing Strategic Plan for Cycling).	75%	14%	9%
Continued working towards zero serious and fatal injuries on our road network (our updated Road Safety Plan to 2030).	85%	11%	1%
Efficient management of our road networks through design and technology to make better use of the space we have, ensuring the sustainable travel hierarchy informs our decisions and priorities	77%	17%	3%
Reallocation of and better management of access to road space to give priority to people walking, wheeling, cycling and on public transport, and ensure goods get to where they need to go in the city	81%	11%	6%
Continued maintenance of what we already have to ensure our pavements, cycleways and roads enable sustainable travel.	87%	9%	2%
Embedding the Fairer Scotland Duty into our transport decision making alongside our Equality and Climate Duties, and applying a ‘wellbeing test’ to our transport investment decision-making.	71%	23%	3%
Investment in a modern public transport system that supports our economy, and serves the thousands of households which don’t have access to a car, providing a real alternative for those who do. In particular, supporting buses, exploring a Metro, working with SPT to support the modernisation and promotion of the Subway, and exploring innovative models of public transport provision in a changing market.	90%	6.5%	1%
A smart, technologically savvy city where we use technology in transport for public benefit, we are open and transparent and encourage innovation through open data. We upskill Glasgow residents in carbon, energy and technological advances related to transport so that everyone benefits.	78%	17%	3%
We work with partners to reduce the cost of public transport in Glasgow, particularly for young people and for people on low incomes or in poverty.	87%	8%	2%

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Policy focus statement – online survey responses	Support this policy focus	Neutral	Do not support this policy focus
We work towards a goal of a single, integrated, smart ticket for public transport in the city (with the potential to include other forms of mobility like cycle hire and car clubs).	89%	7%	1.5%
We collectively agree an approach to transport governance in Glasgow that is in the best interests of the users of our transport systems.	83%	13%	1%
We create financially sustainable models of transport provision in the City and proactively identify sources of income to sustain investment in sustainable transport.	78%	16%	2%
We work collaboratively with Glasgow’s taxis, which often plugs a gap in transport, to improve provision, particularly with the growth of app-based ride and hail services.	52%	33%	12%
People and place are prioritised in our City Centre - making it easier and quicker for people to walk and cycle and make onward journeys by public transport. A new City Centre Transformation Plan will support existing goals to reduce car journeys in the city centre by 30%, whilst enabling the residential population to double.	77%	13%	7%
Parking supply and cost are balanced to ensure that using public transport is cheaper than driving into the city centre. An evidence-led and policy-driven car parking strategy is developed for the city.	71.5%	16%	10%
Working collaboratively with planners and regeneration teams, ‘Liveable Neighbourhoods’ are created which maximise the availability of services within 20 minutes walking distance.	83%	10%	3%
A focus on the journey to school – further investment in walking and cycling infrastructure, working towards a default speed limit of 20mph, and a wide rollout of school road closures.	72%	17%	8%
A focus on making sure the city centre and neighbourhood environments are accessible for all.	88%	8%	1%
Local communities are supported and enabled to take forward ideas which benefit their neighbourhood, in line with the community empowerment agenda and recent changes to planning legislation.	78%	15%	2%
Ensuring a just transition to a low carbon transport future by: first, reducing the need to travel; then, supporting trips by foot, wheeling, bike, public transport and shared transport; finally, moving to low carbon and low emission vehicles.	78%	13%	5%
Less vehicles of all kinds on our roads, and a reallocation of road space to sustainable ways to travel.	73%	15%	9%
Monitoring consumer trends and doing what we can to manage the rising number of light goods vehicles on our roads.	67%	24%	5%

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Policy focus statement – online survey responses	Support this policy focus	Neutral	Do not support this policy focus
Considering and using the tools at our disposal to support cleaner vehicles in the city.	81%	13%	2%
Considering greenspace, open space and biodiversity when we plan transport and placemaking projects, to maximise the benefits of our investment.	86%	9%	1%

In terms of organisational responses, the pattern above was largely also reflected in the feedback. The policy focus statements that some organisations questioned tended to be:

- **Working collaboratively with taxis in Glasgow** – concerns on this statement ranged from stating the focus should be on a good public transport network first and foremost, to some concerns over the pollution caused by taxis and driving behaviour. It was also highlighted however that public hire taxis often provide a service where public transport is not an option and there is a lack of sufficient taxi ranks in the right locations. One organisation also challenged the unhelpful lack of distinction between private and public hire in the Public Conversation policy focus statement.
- **Less vehicles of all kinds on our roads**, and statement on **balancing supply of parking cost and supply** – some expressed concern in relation to how some rely on a car.
- **Reducing the rising number of light goods vehicles** – they were several neutral positions on this statement.

Some queried the meaning of partnership and collaboration in some statements, in the context of not continuing to work with private bus operators but bringing buses into public control.

These policy foci will be further developed where appropriate into individual policy areas within Glasgow’s Transport Strategy, City Centre Transformation Plan, Liveable Neighbourhoods Plan and Active Travel Plan, and added to.

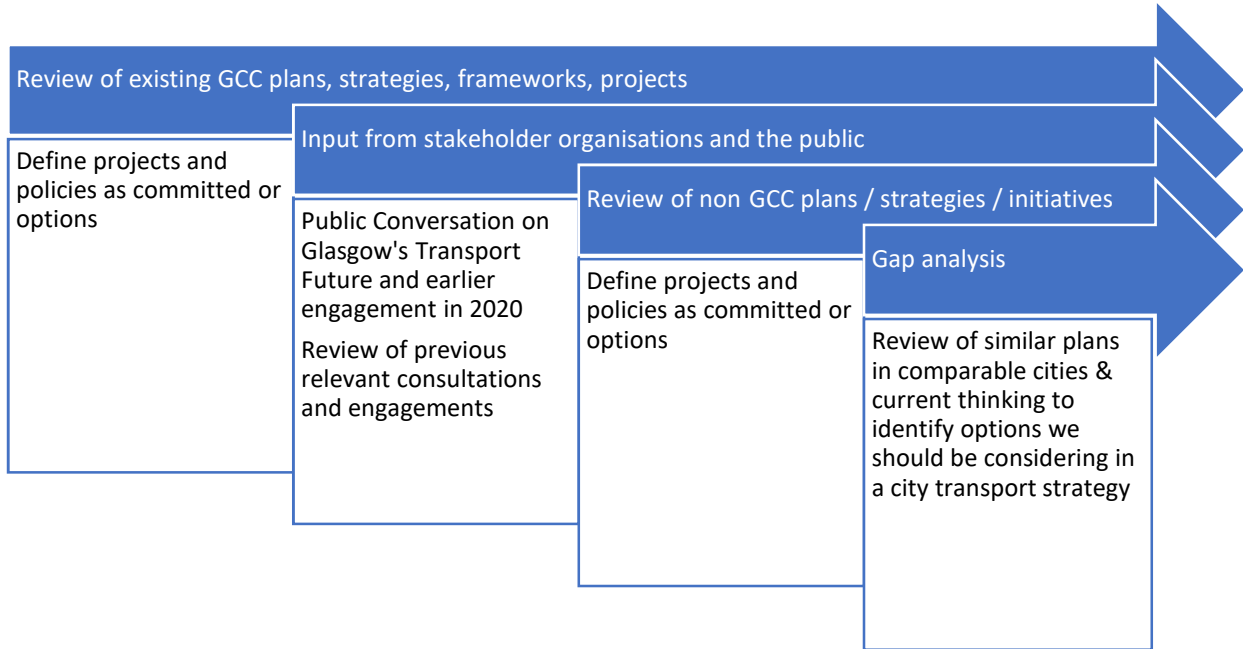
Long list of solutions

We are applying a multi-criteria appraisal approach to the development of the Glasgow Transport Strategy, based on STAG. This, alongside our application of the SEA approach, requires us to consider all possible types of solutions or “options” to achieve our goals and objectives; to assess these against our objectives; and to ensure we consider alternatives so that we are confident our decisions are the right ones. These are then assessed against a range of criteria to see how they perform, and check they contribute to the goals we have set. The criteria include the transport planning objectives above, and the STAG criteria of economy, safety, accessibility & social inclusion, environment and integration. The ability to deliver (feasibility, affordability, public acceptability) is also considered for each.

The following figure sets out the approach to developing a long list of options for the GTS to further consider.

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Figure 1 Approach to developing a long list of options in the GTS



After reviewing and collating all the information as per the figure above, some of these are then identified as **committed projects and policies** – that is, projects and policies (and even targets) that have a degree of certainty and commitment to deliver. For example, they have already been through appraisal or significant consultation and approved by Elected Members in a strategy or plan; or they have been granted funding, or they have relevant statutory consents in place. These will form part of the 'do minimum' and/or reference case for the transport appraisal work – that is, what the city might look like should there be no additional interventions as a result of the GTS. Some of these will also be taken on board in the GTS as policy, building on the effort already put in to developing various plans and strategies.

This leaves a list of other projects and ideas which still need to be assessed as to whether they should be part of the GTS. Some of these may have particularly important impacts on travel demand and need to be quantified as to how they support the GTS objectives; some may also not be the only solution to a particular problem and be part of a series of alternatives, which also require appraisal to ensure we are making the best decisions.

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Figure 2 Committed projects & policies v. options for the GTS to consider



The following presents a summary of the long list of options now being considered in the GTS process:

- **Public transport**
 - Bus service & bus infrastructure improvement options
 - Demand responsive / flexible public transport
 - Public transport fare improvements & smart integrated ticketing
 - Subway & rail improvements
 - Metro scheme
 - Park & Ride
- **Community & social transport**
 - Enhanced role of community transport
 - More sustainable transport access to food, healthcare, education/ training, employment
- **Shared mobility**

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- Mobility hubs
- E-scooters & micro-mobility
- Car journey & journey sharing
- Improving existing bike hire & car club offer
- Public taxi & private hire, ride-hailing
- **Accessible transport system**
 - Accessible information & journey planning
 - Improvements to the journey experience & raising awareness of issues
 - Accessible walking environment
 - Inclusive cycling interventions
 - Scottish Accessible Travel Framework
- **Cycling**
 - More affordable access to cycling & further bike hire
 - Improved cycling infrastructure
 - Improved integration with other modes
 - Active travel hubs & training & information
 - Improved & consistent information & signage
 - Improved & more cycle parking & storage
- **Walking**
 - Improved walking infrastructure
 - Improved & consistent information & signage
 - Personal security enhancements
 - Reducing barrier impacts of major infrastructure
- **Clean air**
 - Further development of LEZ & air quality measures
 - Further support electric bikes
 - Enhancing electric vehicle charging
- **Movement of goods**
 - Tackling last-mile delivery
 - Consider freight distribution consolidation
 - Low carbon freight movement

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- Expanding Eco-Stars
- Improve journey time reliability of goods movement
- **Travel information & behaviour change and information provision**
 - As above - improved information provision on sustainable transport
 - Improved integrated branding of sustainable transport in Glasgow
 - Behaviour change campaigns
 - Mobility as a Service
- **Transport governance & decision making**
 - Consider options under the Transport (Scotland) Act 2019
 - Consider overall governance of transport in Glasgow
 - Improve transparency of Council decision-making on transport
- **Water-based transport**
 - River-based movement of people and goods
 - Canal-based movement of people and goods
 - Improved connectivity to and across the river
- **Transport and technology**
 - Further development of existing urban traffic control system e.g. greater priority for sustainable transport
 - Consider role of connected autonomous vehicles
 - Consider skills & jobs opportunities from new transport technologies
 - Open data standards
- **Transport and climate and biodiversity**
 - Improving biodiversity through transport decision-making
 - Climate adaptation measures in transport projects
 - Low / zero carbon energy & propulsion for transport
 - Consider skills & jobs opportunities from new transport & carbon & energy initiatives
 - Improved climate change resilience of transport
- **Demand management, vehicle restraint and road safety**
 - Strategic approach to parking in the city
 - Consider workplace parking levy & other charging mechanisms to manage demand
 - Further road safety improvements

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- Pavement parking prohibitions implementation
- **Road infrastructure**
 - New road capacity schemes with sustainable transport allocations
 - Managing capacity
 - Improved maintenance
 - Roadspace reallocation to sustainable modes (as per categories above)
 - Reducing the barrier impact of major roads infrastructure
- **Development and plan related**
 - Place-making in transport schemes
 - Development plan policies to reduce the need to travel e.g. 20 minute neighbourhoods and discourage car ownership
 - Transport proposals from Strategic Development Frameworks which form part of the City Development Plan
 - City Centre Transformation Plan measures
 - Liveable Neighbourhood Plan measures
 - Travel planning for new development
- **Process related**
 - Improved monitoring of transport trends
 - GCC staff travel plan update
 - Innovative & resilient sources of funding
 - Low carbon Council fleet
 - Improved enforcement to support sustainable transport
 - Further mainstreaming equalities in decision-making

Next steps

The Final Case for Change report represents a milestone output in the development of the GTS. In presenting the Case for Change, the first stage of the STAG-based approach (Initial Appraisal: Case for Change) is complete. The next stage is preliminary appraisal of options, and development of policies in the GTS is ongoing. Alongside the appraisal process, the SEA and EqIA processes will both continue and proactively inform the development of the GTS.