



Resilient Glasgow Indicators: Final selection

February 2017

Background and Purpose

This short paper outlines a set of indicators to monitor Glasgow's progress against its resilience strategy developed as a member of Rockefeller 100 Resilient Cities network. The indicators have been informed through collaboration with Glasgow's 100 Resilient Cities' steering group, reviewing existing indicators including ARUP's City Resilience Index and a workshop with key partners in delivering the city resilience strategy.

To enable Glasgow citizens to engage with the resilience strategy and assess the city's progress towards embedding the principles of resilience, the indicators will be accessible on the *Understanding Glasgow* website. More information about the city's resilience strategy, including the community engagement which went into shaping it, can be found here:

http://publications.arup.com/publications/o/our_resilient_glasgow

Developing our framework

A number of existing scales for measuring city resilience are available and two were identified in the early stages of our indicator selection: The WARM (Wellbeing and Resilience Measure) and the United Nations International Strategy for Disaster Reduction (UN ISDR) Local Government Tool for Disaster Resilience.

The Wellbeing and Resilience Measure was developed and described Mguni and Bacon (2010) bring together routinely collected data to help communities make better, more resilience enhancing choices. Learning we took from the WARM tool and wished to incorporate into our selection of measures included;

- Its use of routinely collected data avoiding a need to create and collect new measures and data
- Its dual focus on both area assets and vulnerabilities
- That it understands resilience as a multi-faceted set of social processes and outcomes : it avoided over simplifying resilience to a single measure or limited range of outcomes.

The criteria on which we propose Glasgow's resilience indicators are:

- They are relevant to the city's resilience challenges and the 'diagnostic questions' outlined in Preliminary Resilience Assessment and that they cover the Four Pillars of the city's resilience strategy
- The indicators recognise resilience is multi-faceted and include data reporting resilience enhancing features at levels of individual, community and social structures
- The indicators are not fixed but potentially responsive to change and emerging conditions
- They include a combination of reliable, routinely collected data around societal processes outcomes and also stakeholder assessed questions around how the city acts and manages risk and mitigation at an organisational level
- Includes a balance of assets and vulnerabilities.

These criteria were approved by Glasgow's 100 RC steering group.

What should we be keeping an eye on? Combining a focus on vulnerabilities and process

The City Profile section of the Preliminary Resilience Assessment document (PRA) identified a number of challenges and vulnerabilities in Glasgow against which we might assume the success of the resilience strategy to be measured. These included (selectively)

- Rising fuel prices a challenge with 24% experiencing fuel poverty
- The employment rate is 8% lower than the national average
- 4.2% of households have no employment compared to a national average of 2.9%.
- Glasgow has one of the poorest health profiles of any other Scottish city. The mortality rate is 15% higher than other UK cities
- 26% of adult Glaswegians have no formal qualifications
- 60% of residents living within 500m of derelict land
- Air quality standards exceed targets set by Scottish Government
- Small and Medium –sized Enterprises (SMEs) make up 97% of all businesses in the city yet the death rate of SMEs is 47%

Whereas a reduction in these vulnerabilities will indicate the city is thriving and a place which offer a better life for its citizens, not all of the indicators represent the development of resilience per se. Resilience is operationalised in the PRA as

The capacity of individuals, communities, institutions, businesses and systems within a city to survive, adapt and grow no matter what kinds of chronic stresses and acute shocks they experience.

Consequently, whereas improved air quality standards will reduce a key vulnerability it will not necessarily put in train a set of processes supporting adaptability. Increasing the percentage of adult Glaswegians with formal qualifications however will support the adaptability and growth of the city in the face of predicted and unpredicted stressors and challenges.

Glasgow's Strategy

Glasgow's Resilience Strategy has four central pillars which represent focus areas that we must address to ensure a more resilient city now and in the future.

These four pillars are:

- Empowering Glaswegians
- Unlocking Place based solutions
- Innovating for fair economic growth
- Fostering Civic Participation

Key to measuring our success will be the ability to define a suitable set of indicators that accurately reflect resilience for each pillar, but even more importantly, those indicators that accurately measure collective city resilience in a cross cutting manner.

Workshop session

A workshop was held to support a conversation around measuring Glasgow's resilience. This conversation was considered essential to define and validate those indicators that measure resilience of the city in relation to each pillar but also in a collective city sense. We also wanted to bring a dimension of terms of present day and future risk and resilience factors. A multidisciplinary group of stakeholders participated in the workshop session, with numbers of participants closely capped at twenty-five to ensure a manageable number of participants – five per group.

The workshop session included a “physical” journey around all four pillars of resilience. At each individual pillar, participants were provided with a reminder of current city challenges as well as the objectives and aspirations of the resilience strategy. Each pillar was equipped with a “basket of indicators” which represented indicators that currently exist and/ or are regularly measured and reported. These could also be chosen where the participants felt they were of value. Learning from this workshop has been fed into the final selection of the indicators listed in this report/

Making the data available to the public and across the 100 RC network

The Understanding Glasgow website developed by the Glasgow Centre for Population Health will make an accessible place for the set of indicators to be displayed. A “City Resilience Infographic” could also be developed to potentially expand the audience.

The proposed indicators

Pillar	Proposed Indicators	Comment/ Relation to CRI	Availability of Data
Pillar 1: Empowering Glaswegians	Income inequality	Reduction of inequalities a key indicator of fair growth and reduces vulnerabilities and stressors caused by inequality	Scottish Household Survey
	Loneliness and isolation	Indicator 4.2 Cohesive communities. Key vulnerability and stress multiplier and indicates how well Glasgow is connected and cohesive city	Health and Wellbeing Survey Percentage feel isolated from family and friends
	Fuel poverty	Indicator 1.2 Adequate Energy Supply	http://www.understandingglasgow.com/indicators/environment/fuel_poverty/scottish_cities (Scottish House Condition Survey). **ThermCert project also has data on thermal efficiency of buildings and correlates with fuel poverty for Glasgow neighbourhoods.Scottish House Condition Survey (already on UG). **ThermCert project also has data on thermal efficiency of buildings and correlates with fuel poverty for Glasgow neighbourhoods.
	Access to services (bank, digital access)		Access to bank on Understanding Glasgow (source Scottish Household Survey), but measure of access to other services? http://www.understandingglasgow.com/indicators/poverty/access_to_bank_or_building_society_account/scottish_cities (Scottish Household Survey)
	Male and female healthy life expectancy	Cross cutting indicator of inequality. One of Glasgow's key vulnerabilities	Census Understanding Glasgow
	Social capital		http://www.understandingglasgow.com/indicators/social_capital/overview Also, NHS Health and Wellbeing Survey. Individual level measures aggregating six measures: feels in control of decisions; does not feel isolated; valued as community member; influence on decisions; feels people look out for each other; volunteering.

Pillar 2: Unlock Place Based Solutions	Proximity to vacant and derelict land	Indicates 'tackling poverty and deprivation' and 'ensure best quality of housing' dimensions of Pillar, From workshop suggestions	Scottish Vacant and Derelict land Survey
	Child proximity to greenspace / Quality of greenspace		Urban Audit
	Active travel: % walking/cycling to work/school (from deprived areas)		On Understanding Glasgow (Sustrans, Hands Up Survey)
	Childhood obesity	Reflects how well physical and food environment promotes activity and healthy lifestyles	http://www.understandingglasgow.com/indicators/children/health/childhood_obesity/selected_scottish_cities (National child health school system) Scottish Health Survey: National Indicator on Healthy Weight Children
	Flood vulnerability		Scottish Government Flood Disadvantage Data
	Composite climate indicators (various - e.g. energy consumption, air quality)		Understanding Glasgow reports on air quality, CO2 emissions and energy consumption. (Sense in the City project also collecting data on air pollution)
	Percentage of community owned land/assets		Source?
	Tenure type of housing	Bridging capital, diverse n'hood, access to quality housing	On Understanding Glasgow (GCC/ Scottish Housing Condition Survey)
	Case Study: White Cart Flood Prevention Scheme	To illustrate a physical infrastructure project with community dimensions	Requires a paragraph or two outlining how the flood prevention scheme relates to principles of the resilience strategy. (who can do this?)
Pillar 3: Innovate to Support Fair Economic Growth	Business survival rates	Indicator 2.3 A greater challenge for Glasgow than business start-ups. Demonstrates the degree to which the city supports innovation and creativity and new ideas amongst citizens. Economic diversity and adaptability.	http://www.understandingglasgow.com/indicators/economic_participation/business_start-ups/business_survival_rates/scottish_cities (ONS)

	Employment by demographic groups	By ethnicity, gender and disability. Indication of fairness of growth and diversity of employment access.	Annual Population Survey/ NOMIS – on Understanding Glasgow. Percentage of population aged 16-64 employed by city
	Educational attainment (by neighbourhood/deprivation)	Indicator 11.1 Adequate education for all Access to opportunity	Understanding Glasgow – Census Will be available from the Children and young People’s Neighbourhood profiles. Possibility of choosing a number of key indicator neighbourhoods
	Diversity of the economy	Indicator 6.3	Employment by industry and employment by sector
	Secure and Meaningful Work	Evidence of the economy serving population need for meaningful life	Oxfam Humankind Index identifies it as an indicator but would need to source evidence locally. (Aspiration)
Pillar 4: Foster Civic Participation	Percentage allocated to participatory budgeting	Indicator 10. 3	
	Ability to influence decisions	Actively engaged citizens; 10.3 Proactive multi-stakeholder collaboration	http://www.understandingglasgow.com/indicators/social_capital/influencing_decisions/scottish_cities This could also include participation requests and participatory budgeting indicators included under pillar 4)
	Active community councils	Indicator 4.4	
	Volunteering rate (by deprivation)		Scottish Household Survey on Understanding Glasgow (but not by neighbourhood)
	Voter turnout in local elections	Benchmark of political participation but would look for evidence of a deeper and more engaged civic participation	Understanding Glasgow

Emergency response

Our steering group has indicated that the ‘public health informed’ approach taken in the resilience strategy means some key dimensions of resilience, such as emergency planning and responsiveness are not captured. The team do not currently have access to routinely collected information on this dimension of resilience. To gain a sense of how the city rates its resilience in terms of emergency planning and preparedness it is suggested qualitative assessments made through conversations with key stakeholders could be used. These could be conducted with 8-12 stakeholders over the phone and repeated every 2 years. The topic guide could focus on:

- Degree of perceived preparedness for key events across emergency services
- Perception of fit between emergency response resources available and the types of events which face the city
- New, emerging or perceived future threats and stressors
- Whether they feel effective plans are in place to handle events
- Degree of co-ordination between public bodies and emergency response

The UN ISDR Local Government Self- Assessment tool could inform this approach. Rather than seeking to objectively measure resilience from existing measures, it assesses the performance and collaboration of agencies and services in a particular place to assess the degree to which Local Authorities are acting in a way likely to produce resilient responses.

The UN ISDR scale is designed for disaster planning and for use in developing nations. An initial scanning suggests Glasgow would score highly on it. However, the approach of having indicators that assess organisational as well as societal trends and processes could be considered. It can help the city identify gaps in existing plans and can support continuous development is made towards Glasgow’s particular resilience challenges.

The tool outlines 10 ‘essentials’ for resilience to be scored with a 5 point Likert scale on the degree to which the Local Authority considers and implements them. This would involve stakeholders assessing the Authority’s performance rather than relying on existing measures. Examples of the ‘essentials’ include (adapted)

Essential 1: Organisation and co-ordination to clarify everyone’s roles and responsibilities (in relation to disaster planning) are in place

Essential 2: A budget is assigned and incentive provided for homeowners, low income families and the private sector to invest in risk reduction

Essential 8: Protection of ecosystems and natural buffers to mitigate hazards and adapt to climate change

Essential 10: Ensures that needs and participation of (potentially) affected population are at the centre of planning /reconstruction.

The scale used to rate preparedness is as follows.

5	Comprehensively prepared, with commitment and investment to maintain preparation across all challenges	
4	Substantially prepared with some recognised deficiencies	
3	Some communities or aspects are better prepared than others, preparation is not comprehensive or substantial	
2	Some achievements made but progress could be improved and there is appropriate commitment	
1	Achievements are minor and there are few signs of planning or forward action to improve the situation	
Please state the reasons for your answer and if appropriate, indicate the aspects of Glasgow’s emergency preparedness to which they relate.		

