EPA FEEDBACK IN RESPONSE TO INFRASTRUCTURE SA'S 20-YEAR STATE INFRASTRUCTURE STRATEGY DISCUSSION PAPER

The EPA welcomes the discussion paper's encouragement of fresh thinking and ideas and the opportunity it provides to communicate 'the paradigm through which it (ISA) will approach the complex nature of infrastructure' for the next 20 years.

It is in this spirit that the EPA encourages the inclusion and elevation of the climate change paradigm and the related opportunities for investment in low-carbon, climate smart, and resilient infrastructure. This should include natural infrastructure and green infrastructure such as urban canopy cover, wetlands, and coastal protection measures to reduce health, property, and other infrastructure risks. It should include expansion of public and non-motorised transport networks to overcome bottlenecks to economic growth and obstacles to a more liveable urban environment from congestion and air pollution.

The section on the current state of utilities (p34), and in particular the reference to current water sources, omits to reference the Adelaide Desalination Plant. The EPA recommends that this be corrected.

The following are offered in response to some of the specific questions pose in the discussion paper:

- *What infrastructure investment would make the biggest impact to unlocking economic growth in South Australia in the next 5, 10 and 20 years?*

In addition to what is already covered in the discussion paper, the EPA recommends inclusion of reference to resource-recovery related infrastructure, including with reference to the government's circular economy priority. This includes infrastructure to sort and process waste, and for its effective reuse e.g. recovery and composting of food waste – see https://fightfoodwastecrc.com.au/

South Australia's future over the next 20 years will increasingly being shaped by a hotter and drier climate, and increases in extreme events. Investment in infrastructure to reduce the major risks posed by this change, is most likely to make the biggest impact on the wellbeing of the SA community and economy.

- *What strategies should be adopted to ensure Adelaide maintains its liveability as it grows?*

Instead of a population growth target, a population wellbeing target is suggested. This could be promoted by an objective of infrastructure that supports a stable population to live well. This is consistent with the Australian Government's 2011 Population Strategy that promoted an approach aimed at maintaining and improving the wellbeing of the Australian population in which all members of the community share in the economic and quality of life benefits into the future. This also aligns with the CSIRO's Future Dilemmas report that describes the environmental effects of a growing population (increases in carbon dioxide emissions and land salinity, and declines in stocks of marine fish, air quality, water quality and biodiversity) and the need for multiple coordinated approaches that reflect the complex set of interactions between population, infrastructure, lifestyle and personal consumption, energy, international trade, inbound tourism and technological innovation.

- *How can technology and data be embraced to improve quality of life?*

Based on the objective of a city resilient to the changes of a hotter and drier climate, there are significant opportunities in a Climate Smart Internet of Things where public transport scheduling is more closely matched to user needs, vulnerable groups receive early warning about heatwaves and air pollution, congestion alerts are sent to commuters, electric vehicle

users can easily locate recharge points, and all members of the community can easily contribute and share information about risks and opportunities.

- *How should infrastructure be planned in increasingly urban environments with ageing populations?*

There is an inevitable trade-off between urban densification and quality of life in the absence of corresponding measures to reduce exposure to air pollution, noise and congestion. This includes reduction in motor vehicles in high-density areas (including through investment in public transport) and improved building design – both for noise and thermal comfort.

With the growing reliance of urban populations on technology to inform decisions and choices, an important challenge for an ageing population is how to improve and maintain the level of technological literacy required to effectively access and use urban infrastructure.

- *How can infrastructure provide resilience against bushfires, drought, flooding, sea level rises and the like?*

This is an area that relies heavily on fine-grained monitoring and modelling to effectively target investment to minimise risks. Sustainable investment options includes 'natural' infrastructure in the form of land use (e.g. coastal inundation zones), wetlands (to attenuate floods and reduce pollution from run-off), and vegetation management (to protect water quality, reduce erosion and mitigate the urban heat island effect). Natural, ecosystem-based infrastructure is increasingly recognised as an important complement to traditional '"hard"' infrastructure, for example by absorbing emissions though vegetation and soils, or by attenuating the impacts of floods on traditional infrastructure. It can even be a substitute for more traditional infrastructure, for example by providing water purification in many cases at lower cost.

The Adelaide Desalination Plant contributes to resilience against drought and the sustainability of this and any future plants will be strengthened by linking them to a renewable energy source.

- *What strategies should the Government adopt to ensure the necessary infrastructure is in place so our regions can thrive?*

Taking a long-term view that considers the predicted impacts of climate change and the comparatively high cost of infrastructure in sparsely populated and remote areas, a strategy of incremental depopulation of the most remote areas of the state may proof to be the most sustainable strategy.

- *What factors should be considered when making inevitable trade-offs about investment in public infrastructure in the context of funding constraints?*

Priority should be given to low-carbon, climate smart, and resilient infrastructure that supports a high density, low emissions society that is resilient to a changing climate, and with little exposure to pollution and congestion. The emphasis should be on transitioning to public and non-motorised transport in urban areas, and expanding the stock of sustainable green and natural infrastructure.

- *What services are we likely to use in the future that will require supporting digital infrastructure?*

Early warning systems for air quality, heat waves, fires, and storm events.

- *What complementary infrastructure can be built to support better health outcomes across the population?*

Both hard and green infrastructure that reduces the urban heat island effect, reduce air and noise pollution, increase access to green areas, and improves active transport. See above re early warning systems and related refuges. Also, monitoring and modelling of exposure of vulnerable groups to events such as heat waves and air pollution, and related response protocols.

- *How can South Australia take the lead on reducing emissions from transport?*

Significant expansion of public transport networks and/or frequency of service and demand management strategies that encourage increased use, supported by investment in state of the art trains, buses and trams, and by increasing active transport opportunities – safe and convenient walking and cycling paths.

- *What options are there to establish a reliable, decarbonised energy system that presents export opportunities?*

The current electricity network consists mainly of large-scale generation plants, supported by a network of individual rooftop solar installations. There appears to be opportunity to further improve reliability through a dispersed network of renewable energy infrastructure that falls in between these two in scale; e.g. solar roofs along rail lines, on bus stops, and along footpaths.