PERTH AS A SMART CITY OF THE FUTURE

Workshop Outcomes
9 November 2018
In October 2018, the Committee for Perth released *Bigger & Better Beyond the Boom: Perth's Pathway to Prosperity* to shape Greater Perth's economic future.

The report identified 11 high-level opportunities that are supported by seven recommendations through which they can be realised. Ultimately, the ambition is for Perth to be a region that is more economically prosperous, vibrant and diverse and, importantly, one that plays to its strengths in order to become highly liveable and globally competitive.

A key recommendation of the report is to ‘implement “smart city” initiatives for infrastructure efficiency, improved liveability and urban competitiveness’. Central to taking action is to investigate smart city implementations from elsewhere, along with engaging with innovative industries and research institutions locally to prepare a ‘smart city’ plan for Greater Perth.

As the leading think-tank on Perth's growth and development, the Committee for Perth has a multi-disciplinary and multi-sectoral membership base and engages with a broad range of stakeholders, including government. Building on significant reach and a reputation for being an evidenced based and solutions focused organisation, the Committee invited the leaders and practitioners from a cross-sector of organisations to attend a workshop, co-hosted with long-term member Shell Australia, to bring action to the recommendation. On 9 November 2018, representatives from state and local government, academia, business and the not-for-profit sector met to deliberate on solutions for Perth's future.

In order to inform discussion the following presentations were made:

- Shell Scenarios by Catherine Ellis, Country Transition Manager, Energy Transitions Programme, Shell
- *Bigger & Better Beyond the Boom Scenarios* by Marion Fulker, CEO, Committee for Perth
- Smart City Strategies Presentation by Daniel High, Manager Economic Development, City of Perth

Afterwards, attendees were split into groups and asked to workshop what needed to be done to shape the future of Perth with respect to specific sectors including Energy; Mobility; Environment and Water; and Urban Planning.

Participants were asked:

- What should the future look like for Perth in 2030/2040 as a city of 3.5 million people?
- What steps need to be taken now to get to that future?
- What are the barriers to achieving a sustainable and prosperous future for Perth?

This report contains the collective output of critical deliberations in order for Perth to be a smart city, organised by topic of discussion.
The Committee and Shell would like to thank all those who attended the half day workshop and gave up their time and intellect.

- Sobhan Abolghasemi, Energy Analyst, Shell
- Helen Asquith, Associate Director, PwC
- Tammy Atlee, Senior Brand Advisor, Shell
- Daniel Ballard, Senior Manager - Capital Planning & Major Projects, Department of Communities
- Greg Bland, Strategic Account Manager | Commercial, CSIRO
- Steven Bond-Smith, BCEC Research Fellow, Curtin University
- Michael Brooks, General Manager, Source Energy, ATCO Australia
- Joanne Burges, Executive Manager People & Place, Western Australian Local Government Association
- Gordon Cole, Chair, Noongar Chamber of Commerce and Industry
- Sophie Cunneen, Commercial Manager, Shell
- Sebastian Davies-Slate, PhD Candidate | Curtin University Sustainability Policy Institute, Curtin University
- Kate Debenham, State Manager, Uber
- Lipakshi Dhar, Economist, CCIWA
- David Di Lollo, Manager, Data and Information, City of Perth Ryan Falconer, Cities Leader Western Australia, Arup
- James Eggleston, Senior Analyst, Power Ledger
- Catherine Ellis, Country Transition Manager, Energy Transitions Programme, Shell
- Alex Forrest, Manager Vehicles and Fuels, The Royal Automobile Club of WA (Inc)
- Marion Fulker, Chief Executive Officer, Committee for Perth
- James Giblin, Manager Energy Solutions, Synergy
- Caleb Goods, The University of Western Australia, Lecturer | Faculty of Arts, Business, Law and Education, UWA Business School
- Chris Green, Director Policy & Research, UDIA
- Georgia Harford-Mills, Research Officer, Committee for Perth
- Marc Hettler, Senior Trader/Analyst, Perth Energy
- Warrick Height, Senior Concept Engineer - New Business Development, New Energies & GHG, Shell
- Daniel High, Manager Economic Development, City of Perth
- Brett Hughes, Executive Director Transport Strategy and Reform, Department of Transport
- Garry Hunt, CEO, City of Joondalup
- Rosh Ireland, Director Energy Industry and Development, Department of Treasury
- Sussan Johnson, Commercialisation Manager, Woodside
- Luc Kent, Principal - Emissions Technology, BHP
- Luc Kox, Business Development Manager, Hazer Group
- Tao-Liang Lee, GM, West, Shell Energy
- Chelsea McManus, Political Analyst, Shell
- Angela Manchester, Internal Sales Executive, Hexagon Geospatial
- Peter Marklew, Consulting Services & National Business Development Manager, IT Vision
- Oral McGuire, Director, Noongar Chamber of Commerce and Industry
- Tim Milsom, Executive Officer, Noongar Chamber of Commerce and Industry
- Tony Monaghan, Manager - Corporate Communications, The Brand Agency
- Rick Newnham, Chief Economist, CCIWA
- Natasha Ogonowski, Principal - Corporate Strategy, Water Corporation
- Dan Pearce, Partner, RobertsDay
- Xavier Quek, Commercial Lead, City Solutions, New Energies, Shell
- Shirley Qiu, Domestic Gas Marketing Manager, Shell
- Patrick Ragan, Principal BD Analyst - Growth, Western Power
- Matt Read, Manager Metro South, Landcorp
- Gus Riggs, Strategy Manager, Western Power
- Bill Scanlan, Director, Smart Cities Strategy Port Hedland, EY
- Troy Scuuds, Manager - Business Development, Wesfarmers Ltd
- Clay South, Acting Group General Manager, Veolia
- Heidi Taylor, Senior Policy Officer | Integrated Transport Planning, Department of Transport
- Owen Thomas, Executive Director | Infrastructure Planning and Land Services, Public Transport Authority
- Anthony Willinge, Honorary Counsil, Kingdom of The Netherlands
WHERE DOES PERTH NEED TO GET TO?

- Overall reduction in carbon intensity and whole of system costs across power generation, transport sector and commercial & industrial (C&I) sectors.
- Increased penetration of renewable energy and storage and orderly retirement of fossil fuel generators. "Soft landing" for coal retirement to include alternate job opportunities for people in Collie.
- Cost-effective and reliable electricity grid that is capable of managing increasing rooftop solar panel systems and eventual uptake in battery electric vehicles (EVs).
- Diverse electricity storage solutions to accommodate greater penetration of intermittent renewable power and reduced thermal baseload power generation.
- Constrained Modular Electricity Network would reduce costs and improve grid reliability.
- More microgrids and stand-alone power systems (SPS).
- Greater energy efficiency and lower emissions for C&I sectors through more behind-the-meter solutions and alternative fuel solutions.
- Reduced reliance on imported transport fuels through uptake of EVs and/or hydrogen fuel cell vehicles would lead to greater energy security and independence.

ENERGY

STEPS TO BE TAKEN?

- Accelerated regulatory and market reform to enable competition in the electricity retail sector and recognise the value of flexibility in the electric system, e.g. frequency control ancillary services from storage.
- Reform that encourages investment in new technologies, services and modifications to enable Perth’s energy system to cope with the dramatic shift in how we generate and use electricity.
- Multi-pronged investigation of energy storage solutions “fit” within the South West Interconnected System (SWIS) operating profile, particularly given regulatory challenges – not just Lithium-ion batteries, but large-scale compressed air, pumped hydro, flow batteries, hydrogen.
- Recognition of the SWIS as a potential “sandbox”/vanguard for new technologies and renewable energy and storage uptake.
- Incentives for demand-side response management such as cost-reflective ‘time of day’ power pricing as a default tariff for all businesses and households to smooth peak demand. Also cost-reflective feed-in tariffs.
- Mandatory phasing-in of Advanced Meter Reading (AMR) functionality for all customers to improve system efficiencies and reduce cost to serve.
- Quantification of health-related costs from particulate emissions to outline economic incentives to encourage switch to EV/fuel cell vehicles. Government incentives for greater uptake of EVs – free parking?
- Introduction of energy efficiency standards across all sectors.

ROADBLOCKS OR BARRIERS?

- Lack of energy policy and strategy for WA/the SWIS, e.g. no State emissions target; no incentives for EV uptake; no (direct) carbon pricing. Fuel excise is a Federal government issue.
- Lack of urban density in Perth increases electricity infrastructure costs which drives up fixed prices.
- Excess generation capacity on grid means there is little incentive for new renewable generation.
- Lack of political will to make regulatory changes prevents innovation and implementation of new technologies, e.g. uncertain regulatory treatment of battery energy storage systems.
- Difficulty in translating cost reduction in transmission infrastructure (and power prices) to financial incentives for network modularisation initiatives by third parties.
- Government’s ability to fund roads from fuel excise taxes if there is a significant switch to EVs.
- Support mechanisms for low income/vulnerable members of the community.
- No government incentives to switch to EVs/fuel cell vehicles.
- Public procurement requirements can inhibit local government from investing in the optimal solution for their community.
- Understanding and comfort with public private infrastructure funding models.
WHERE DOES PERTH NEED TO GET TO?

- Lower transport demand per capita needs to be driven by:
  - Regulation and fiscal incentives; and
  - Better mixed-use planning of urban areas and urban sprawl to be limited to Metropolitan Region Scheme.
- Distributed employment centres to enable more remote working/teleworking.
- Higher (mobility) asset utilisation enabled by technology.
  - Last mile public transport to be convenient, safe and cost effective and may include shared shuttle services, bicycles, autonomous vehicles, buses and trams.
- Mass transport (2nd tier) needs high utilisation, low emissions, higher efficiency and to be multimodal, multi-dimensional and with good links to urban planning.
- Commuters have wide range of choice and ability to arrange and pay for multimodal transport easily via Mobility as a Service (MaaS).
- Low emissions public transport options that are safe, convenient, affordable, sustainable with high utilisation and provide information in real-time.
- More telecommuting hubs relieve congestion around Perth CBD. People travel only when needed.

MOBILITY STEPS TO BE TAKEN?

- Engage community early to develop a Regional Plan with Strategic Vision. Mobility strategy is integral to urban planning and should be integrated with the developer from the start. This will ensure that transport strategy reflects the needs of the commuters.
- Data is key: both government and private. Need open-access data platforms to encourage innovation in mobility.
- Real-time data made available will enable traffic to be diverted to other routes, and not cause further congestion.
- To address congestion: (i) prioritise lanes for freight and commercial vehicles with associated pricing incentives, (ii) demand management (including time of day shifting through staggered school/work times and shifting non-essential freight and commercial transport to off-peak timing), (iii) technology (e.g. smart traffic lights).
- Fit-for-purpose solutions that optimise supply and demand for public transport. Integrate alternative smaller, cheaper and more convenient choices for consumers. Need to convince beyond early adopters to affect behavioural change.
- Fiscal incentives to use public transport such as free rides included in event tickets or free trial period for people who are willing to use alternative/multimodal transport instead of their car for their daily commute.
- Greater education of the community as to Perth’s projected road congestion issues if no changes are made and empowerment of communities and government to make long-term plans for Perth’s future.
- Need more research and investment in technology, including connected AVs.
- Develop shared funding streams for roads in case of EV future where fuel excise tax is no longer collected.
- Optimise existing infrastructure.

MOBILITY ROADBLOCKS OR BARRIERS?

- Behavioural preference for travel by private vehicles. Need trials and fiscal incentives for people to experiment with alternative transport. Alternative will need to be attractive to get people out of cars. Public transport today is not convenient or cost-effective for many Perth commuters.
- Multiple regional councils inhibits long-term strategy and co-ordinated action.
- No long-term multi-modal mobility plan.
- Policies and regulation that addresses available technology such as AVs.
- Consumer choice needs greater priority. Convenience and cost will drive consumer behaviour so traditional ways of serving the community won’t work in the future. Help people make choices which suit them.
- System is already available but needs policy for wide implementation.
- Need to plan for same outcome by different stakeholders.
- Slow and piecemeal market regulation.
- Different stakeholders plan transport for different outcome. There is a need for more integrated planning.
WHERE DOES PERTH NEED TO GET TO?

- Perth expects and requires optimal environmental solutions and outcomes, including clean water and clean air.
- Swan River of the future needs to be healthy, vibrant and alive to support essential ecosystems.
- Responsible use of water for domestic gardens.
- Green space in urban centres needs to be valued and protected.
- Shared vision and understanding that Perth’s urban sprawl is unsustainable.
- Greater energy sustainability driven with community photovoltaic hubs and increased renewables as key power supply.
- Integrated mobility and transport systems that utilise walking, cycling and low or zero emissions public transport and private vehicles.
- Good and accessible local amenities for all Perth citizens to minimise need for driving.
- More sustainable building practices including alternative building materials.

STEPS TO BE TAKEN?

- Develop shared vision for a sustainable future for Perth’s natural and urban environment.
- Need a community call to action – need for bottom-up drivers of change in sustainability and environmental management.
- Increased awareness and education of the value of water for liveability and amenity, being aware of personal use and its effect on the environment.
- Wide-spread recognition that all water is a shared resource including underground aquifers. Perth needs greater analysis of localised water balance and trading opportunities. More long-term thinking.
- Steps to refresh and replenish groundwater system. Use of recycled water is essential.
- Accelerated action against urban heat effect through integrated environmental and urban design and planning.
- Built-in opportunities for community real-time feedback. Wide acceptance and use of data analytics.
- EV charging network to encourage uptake in zero emission vehicles.
- Greater public educational emphasis on sustainability to change mind-sets.
- Need fiscal incentives to change unsustainable lifestyles re water and waste management.

ROADBLOCKS OR BARRIERS?

- Good weather makes for complacent attitudes in Perth. The lack of a climate crisis or water crisis such as Cape Town’s means long-term water management is not front of mind for the community or Government.
- There is an incredible lack of community knowledge about Perth’s limited water reserves. Therefore, there is no debate or understanding of the trade-offs if Perth does not change its water usage patterns and behaviours.
- Lack of political leadership, boldness, and vision and no collective view in the Perth community as to what success looks like.
- Government fiscal limitations for funding new investment in long-term solutions to Perth’s environmental sustainability issues.
- Limited long-term integrated urban planning.
- Lack of collaboration between industry, community and Government which is essential for developing innovative solutions.
- Limited EV charging network and no incentives for low emissions vehicles.
- Legislative change driven by community (e.g. more green spaces in zoning laws mean less need for private gardens, incentives for higher density living).
- No fiscal incentives to change lifestyles.
WHERE DOES PERTH NEED TO GET TO?

- Diversity of housing for all ages and stages including high and medium urban density options.
- Coordinated vision for the built and natural environment and to bring common elements together.
- Leverage Perth's existing natural assets - coastal, river, natural reserves.
- Sustainable, liveable built environment with easy access to amenities.
- Increased walkability to improve health outcomes and enhance community engagement levels.
- Strong sense of "neighbourhood" rather than anonymous, soulless "housing estates" with no mature trees.
- Recognition of silent majority that supports reform but is shouted down by vocal minority.
- Reduced daily commute times and increased optionality for commuting via bikes, walking, car, and public transport.
- Reduced cost to environment e.g. water and energy infrastructure.

STEPS TO BE TAKEN?

- Measure, record and document demographic opportunities and challenges. Ensure that different needs in the community are known, documented and understood by all stakeholders.
- Create a narrative for Perth's future that demonstrates and celebrates the quality of different urban planning outcomes.
- Protect, preserve and increase diversity of recreational spaces, both local and regional, as common amenities for the community.
- Invest in cycling infrastructure and interconnected cycling network to make it safer for all ages and abilities.
- Invest in well-lit pedestrian paths and walkable places.
- Incentivise cycling/walking as alternative transport means, not just recreational activities.
- Recognise there is no silver bullet – there will be trade-offs but they can be managed.
- Deeper and broader community engagement around increasing urban density so that solutions follow and community comes along. Resist only hearing a vocal minority.

ROADBLOCKS OR BARRIERS?

- Bipartisanship prevents the long-term reform required and creates incentives for short-term political point scoring.
- Perth lacks a narrative, vision and leadership for its urban future.
- Perth is a sprawling metropolis with urban hubs which leads to isolated, restrictive pockets of reform while the city as a whole remains unresponsive.
- Lack of local government reform makes co-ordinated action that would benefit communities impossible to implement.
- Lack of regulation to limit urban sprawl.
- Lack of agreed values and characteristics. The outcomes are not discussed, agreed, or shared both in the community and politically.
- Negative media narrative around local government reform, urban density etc.
- Perverse outcomes because problem identification is not detailed, so not delivering the right solutions (i.e., density vs intensity).
The Committee for Perth is the leading think-tank focused on the liveability and competitiveness of the Perth and Peel region. Our vision is for Perth to be a region with world-class amenity that is culturally diverse, sustainable and economically prosperous as it grows to accommodate 3.5 million people.

The Committee for Perth undertakes research into the competitiveness of Perth as a place to live and do business and examines the unique demographic, cultural, urban and economic characteristics of metropolitan Perth.

Through our landmark reports, prepared ‘by Perth, for Perth’, the Committee has examined culture and the arts; Perth as a region of 3.5 million people; gender equality; transport and mobility; and the region’s economic competitiveness.

This work has established the Committee as a strong, independent and unbiased fact-based research and advocacy organisation which delivers practical and positive recommendations for a bright future for Perth.

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