



Methodology Paper

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# **Inquiry into Local Government Costs and Efficiency**

31 May 2019



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# 1. Information Requests

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## **Approach to comparative analysis**

- 3.1 Is the Australian Classification of Local Governments an appropriate way to group similar councils for comparison? Is there a better approach?
- 3.2 Is the proposed ten-year timeframe to analyse costs and efficiency appropriate?
- 3.3 Are there any other sources of data that would help the Commission?

## **Analysing council costs**

- 4.1 What are the key determinants or drivers of council costs and how have councils' costs changed over time?
- 4.2 What is the best approach to defining and measuring costs for comparisons across councils or through time?
- 4.3 What is the most appropriate measure of capital expenditure?
- 4.4 What measures of council service quality are available?

## **How to estimate local government efficiency**

- 5.1 What is the experience of South Australian councils in measuring and monitoring efficiency?
- 5.2 Are there any examples of efficiency monitoring programs in other jurisdictions?
- 5.3 Have these efficiency monitoring programs resulted in improved council efficiency?
- 5.4 Is there value in estimating service-specific efficiency of councils?
- 5.5 What services are most appropriate to estimate council efficiency?
- 5.6 How do councils monitor their efficiency over time?
- 5.7 Are there any examples or case studies of councils benchmarking their costs and efficiency against other councils?

## **Understanding factors that influence efficiency of councils**

- 6.1 Are the factors used in previous studies likely to influence local government efficiency in South Australia?
- 6.2 Are there any additional factors that could affect the costs and efficiency of South Australian councils?
- 6.3 What are the key internal and external factors that have impacted councils estimated efficiency over the last ten years?
- 6.4 What are the key internal and external factors which councils expect to impact their efficiency going forward?
- 6.5 What decision-making processes do councils use to determine the scope of services they provide and how these services are provided?

## **Options for improved council performance**

- 7.1 What are councils' experiences with recent reforms in policy, governance and management?
- 7.2 What actions/reforms have councils initiated to improve efficiency or reduce costs?
- 7.3 What reforms in other jurisdictions successfully resulted in improved council efficiency?
- 7.4 How can financial accountability in the local government sector be enhanced?
- 7.5 Are there examples of actions initiated by councils to increase efficiency? What has worked and what has not worked?

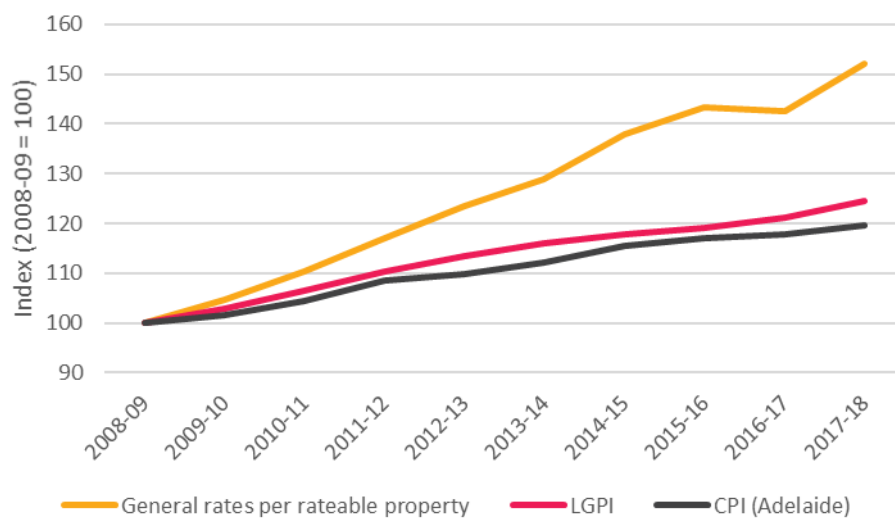
## 2. Introduction

### 2.1 Purpose and objectives of inquiry

The South Australian Productivity Commission (the Commission) has been asked to examine the trends in local government costs and efficiency and the drivers behind these trends. The terms of reference can be found on the Commission’s website at [www.sapc.sa.gov.au](http://www.sapc.sa.gov.au).

At face value, local government rates make up less than four per cent of the total taxes paid by Australians<sup>1</sup>. However, in South Australia over the past 10 years local government costs, and as a result, rates, have been increasing faster than inflation (as measured by either the Consumer Price Index or the South Australian Centre for Economic Studies’ (SACES) Local Government Price Index)<sup>2</sup>.

Figure 1 General rates per rateable property



Source: SALGGC (2017b), ABS (2019), SACES (2019).

Improving council efficiency will be beneficial to all relevant stakeholders including residents, businesses, the tax paying public as well as the councils in ensuring their financial sustainability.

The Commission will identify the drivers of the increase in council costs. This may include changes to the scope of services provided by councils, changes in the environment within which councils operate, or ratepayer preferences for greater levels of service.

To do so, the Commission will analyse the components of the cost base and how they vary across councils and over time. In doing so, the Commission will seek views on how the available data should be structured and analysed. This will include issues such as:

<sup>1</sup> ABS 5506.0 Taxation Revenue, Australia, 2017-18

<sup>2</sup> South Australian Centre for Economic Studies (2018)

- how to define and measure costs and outputs;
- grouping councils together so that like-for-like comparisons and meaningful conclusions can be made; and
- how the data can be standardised and used to represent either an individual council or a group of councils.

The costs of any two councils may vary due to a variety of internal and external factors including geographic size, remoteness, service mix and population density.

Measures of efficiency and productivity provide an estimate of the effectiveness of local government expenditure and assist councils to reduce their costs of providing services. Efficiency commonly refers to the relationship between the quantity of inputs used and outputs produced. An organisation is efficient if it produces the largest possible output from a given set of inputs or if it uses the least possible quantity of inputs to produce a given level of outputs. Estimating the theoretical maximum level of output for a given level of inputs is difficult, especially in the case of local governments. Therefore, the Commission proposes to use measures of relative efficiency (a council's efficiency relative to similar councils).

There are generally two approaches to efficiency measurement: single-input, single-output measures commonly referred to as partial productivity measures, and multiple-input, multiple-output measures of efficiency (global efficiency measures) which can be computationally more challenging. The Commission notes there are limitations in the available methodologies for measuring local government efficiency. Despite these limitations a combination of measures can be used to portray an effective overall picture of local government efficiency and to assist councils identify ways of improving their efficiency. The Commission will engage with local governments and experts in efficiency measurement to develop the most appropriate methodology.

Analysis of an objective evidence base, expert advice and opinion from key stakeholders will be used by the Commission to develop advice on options to reduce growth in costs and improve council efficiency and financial accountability.

## **2.2 Why this paper?**

This methodology paper sets out the Commission's initial research into the estimation and analysis of local government costs and efficiency and proposes a way forward with the technical and analytical facets of the inquiry. The Commission is seeking advice on all aspects of the paper and terms of reference for the inquiry. In addition, the Commission is seeking your views about opportunities to improve local government operations to reduce costs and improve efficiency.

The quality of the analysis and conclusions will be greatly assisted by stakeholders sharing their views and assisting the Commission in establishing an evidence base. The Commission encourages all stakeholders to engage and participate at all components of the inquiry.

Chapter three of this methodology paper lists possible sources of data and sets out the Commission's proposed way of grouping councils to enable meaningful comparisons. Chapter four provides an overview of how the available data can be used to estimate trends in local government costs. Chapter five provides an overview of the approaches to

estimating local government efficiency. Chapter six outlines previous studies that have investigated the factors that influence the efficiency of local governments. It also provides a discussion of the need for qualitative information to establish a context to support interpretation of council cost and efficiency estimates. Chapter seven discusses the history of reforms and considers options for improved council performance. The final chapter provides a summary of the Commission’s approach to the inquiry.

## **2.3 Consultation**

As part of the inquiry, the Commission will identify and consult with stakeholders to seek their advice, views and additional information. The consultation process will include public submissions, ongoing engagement with interested stakeholders and the establishment of a reference group. The reference group will assist the Commission by providing:

- relevant data and information;
- expert advice, insights and understanding about productivity and efficiency trends in the South Australian local government sector;
- feedback on the Commission’s analysis and conclusions; and
- advice on how to best communicate with the stakeholders.

Representatives will be selected by the Commission and the group will have an advisory status only.

The Commission will seek written submissions on this methodology paper and the draft report to be released in August. Timely feedback on this methodology paper will be important to allow sufficient time for the Commission to address all concerns and comments in the draft report. The Commission will also proactively engage with stakeholders through face-to-face meetings and other means throughout the inquiry.

## **2.4 Inquiry process**

The Commission will consult local government and other key stakeholders on the methodology to be used for its analysis.

The Commission is to publish a draft report and seek submissions before presenting a final report to the Government.

The Commission will second and/or engage people with required analytical expertise and knowledge of the local government sector for the period of the inquiry.

The inquiry will involve state-wide consultation with Councils, community groups and relevant professionals in the public, private and professional bodies as part of the public engagement process.

Key dates:

Submissions on methodology paper

- regarding cost and efficiency measurement 28 June 2019
- other issues 12 July 2019

Draft report

August 2019

Submissions on draft report

September 2019

Final report

22 November 2019



## 2.5 Make a submission

An electronic submission in Word or PDF format is preferred, along with any supporting documentation containing facts, figures, data or examples:

- through our website facility [www.sapc.sa.gov.au](http://www.sapc.sa.gov.au);  
or
- via email at [sapc@sa.gov.au](mailto:sapc@sa.gov.au); or
- via post at:

**South Australian Productivity Commission**  
GPO Box 2343,  
ADELAIDE SA 5001

If you would like to discuss how best to communicate with the Commission, the Office of the South Australian Productivity Commission can be contacted at 08 8226 7828.

It is important to emphasise that the Commission has no predetermined views on the matters covered by the inquiry. This methodology paper sets out the Commission’s understanding of the matters relevant to the inquiry. This starting point is based on its review of selected reports and papers on the topic. Some relevant issues may have been missed or imperfectly understood. Feedback from stakeholders including evidence, examples, information and opinion, will assist further analysis and review that will contribute to the development of a draft report

The release of this methodology paper supports interested parties and stakeholders to participate in the inquiry into local government costs and efficiency, by highlighting the key issues as understood by the Commission, and by raising questions to generate feedback.

The Commission invites submissions on the methodology paper by 12 July 2019. The Commission would appreciate submissions regarding the technical aspects of cost and efficiency measurement to be submitted by 28 June 2019. Submissions may address any of the issues covered by the paper and the terms of reference. The Commission seeks evidence and experience, as well as views, on the matters highlighted in the methodology paper. It is also interested to learn of other matters relevant to the terms of reference.

### Key dates

**13 May 2019**  
Notice of inquiry

**31 May 2019**  
Methodology paper

**June 2019**  
Initial public consultation

**12 July 2019**  
Submissions to methodology paper due

**August 2019**  
Draft report

**August/September 2019**  
Draft report public consultation

**27 September 2019**  
Submissions to draft report due

**22 November 2019**  
Final report delivered to the Premier

**20 February 2020**  
Due date for the report being available to the public

### About us

The South Australian Productivity Commission has been established to examine and make recommendations on matters referred to it by government that facilitate productivity growth, unlock new economic opportunities, support job creation and remove existing regulatory barriers.

Our findings and recommendations to government are the primary outcomes of the inquiry process.

A draft report will be published in August 2019. It will start a further round of consultation with stakeholders, following which the Commission will consider all feedback; finalise its views; and submit its final report and recommendations to the Premier by 22 November 2019. The Commission is required to publish the final report within 90 days.

## 2.6 Confidentiality

Transparency is an important part of the Commission's independent process for gathering evidence and other elements of the inquiry process. It provides confidence to stakeholders that their views have been heard and accurately shows to the wider public the breadth of views and information that have been put to the Commission in reaching its independent conclusions and recommendations. To that end the Commission will publish the submissions that it receives on its website unless you clearly indicate that your submission is confidential, or the Commission considers the material to be offensive, potentially defamatory, beyond the scope of the inquiry's terms of reference, or an abuse of process.

If you wish to submit material in confidence, please advise us why your submission should remain confidential. We will contact you to discuss what aspects are confidential and what information you are willing to have posted on the inquiry website. We reserve the right to decline your submission if we do not agree with the rationale provided for it to be confidential. Material accepted as confidential will be read only by our Commissioners and staff and will not be referred to in our reports. Later, if we consider the confidential information to be important for conclusions drawn by the Commission, we will seek your permission to refer to it in a form that is acceptable to you. This approach supports the Commission's commitment to transparency, and enables other parties interested in the inquiry to consider contributors' views unless there is a significant reason why those views should not be shared beyond the Commission.

Documents developed and received by the Commission, including confidential submissions, are subject to the *Freedom of Information Act 1991*. That Act gives individuals the legally enforceable right to access documents created and held by the government, subject to some restrictions.

Personal or identifying information should not be included in submissions, e.g. contact details or names of people referred to in submissions. The Commission will try to ensure that all personal contact details are removed from submissions before they are published on our website.

Submissions will remain available on the Commission's website after the conclusion of an inquiry, for an extended period, under Past Inquiries.

### 3. Approach to comparative analysis

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The terms of reference for the inquiry require the Commission to analyse information on local government costs and the key drivers of these costs, as well as to develop and analyse measures of local government efficiency and productivity.

Local governments act on authority delegated to them by the state government on the basis of the *Local Government Act 1999* (the Act) and other acts, and they take responsibility for functions that are best defined and delivered at the local level. The Act specifies some specific services that must be provided by local government authorities, and also outlines a broad set of functional roles and responsibilities<sup>3</sup>.

There are 68 councils across South Australia with diverse characteristics providing a range of service delivery and regulatory functions. Typical regulatory functions include planning and development (for example, building inspections; licensing; and development approvals). Activities related to service provision may include waste management; road and infrastructure maintenance as well as community and recreational services<sup>4</sup>.

The types and levels of services provided, and the associated costs, depend on a number of aspects including those that relate to environmental, socio-economic and demographic factors. They also depend on council decisions on the use of technology, management practices, and business processes. Some services are mandated by the South Australian Government, while others are discretionary.

Comparing differences in council costs across councils and over time will enable the Commission to better understand what the key costs for councils are as well as the drivers behind changes in these costs. Grouping the councils based on similarities will enable the Commission to make meaningful comparisons across different councils.

#### 3.1 Sources of data

The Commission will use data held by the South Australian Local Government Grants Commission (SALGGC) to construct customised datasets that will facilitate relevant and meaningful comparisons to be made between local government areas.

The SALGGC has made available to the Commission, a range of data for the ten financial years from 2008-09 to 2017-18 on general council information, revenues, expenses and activities. While the SALGGC holds data prior to this period, amendments to the *Local Government Act 1999* were brought into effect in 2007 which aimed at improving the accountability of councils, as well as strengthening their financial governance, asset management, rating practices and auditing arrangements. As a result, the quality of data is better in more recent years. Therefore, the Commission proposes that a timeframe of the past ten years is appropriate.

Along with data held by the SALGGC, the Commission will use relevant ABS data on key demographic and economic variables by local government area in South Australia.

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<sup>3</sup> See, in particular, sections 6 & 7 of the *Local Government Act 1999*.

<sup>4</sup> See Productivity Commission (2017) for a detailed discussion of the diversity of local government activities.

### 3.2 Grouping similar councils

The diverse characteristics of local government – such as geographical size and population density – means that the Commission’s methodology will need to take into account differences that exist between local government areas, which may influence the cost of service delivery.

In general, local councils in South Australia provide their communities with a variety of services, including road maintenance, waste collection, public health services and community services. The nature and scale of service provision can vary between councils.

To accommodate this, the Commission will group similar local councils together for comparison. This will allow the differences between local government areas to be accounted for in the Commission’s analysis of efficiency and cost.

The Commission will group councils on the basis of the Commonwealth Government’s ‘Australian Classification of Local Governments’ (ACLG) scheme.<sup>5</sup> The scheme has been in use since 1994 and includes all local governing bodies that receive funding under the Australian Government’s Financial Assistance Grants programme, as defined by the *Local Government (Financial Assistance) Act 1995* (Cth). The scheme’s full classification structure is presented in Figure 2.

The 22 categories included in the ACLG contain too few councils in each for meaningful comparisons and some level of aggregation is required. The Commission’s proposed groupings using the ACLG are:

- urban (including capital, development and fringe);
- rural agricultural (small and medium);
- rural agricultural (large and very large); and
- urban regional.

A list of South Australian councils by their ACLG classification is available in SALGGC (2017b).

When compared with other possible classification models – such as the ‘Australian Statistical Geography Standard produced by the ABS’ – the ACLG has the advantage of providing a clear and consistent system of classification, updated annually, that allows local government areas to be grouped into similar categories for more accurate comparison.

Grouping councils on the basis of the ACLG will help the Commission to take into account the differing scale and scope of services provided by local councils, which are often related to a council’s size and the nature of the area in which it is located (including, for example, whether it is part of a developing urban fringe or is situated within a large rural and agricultural area).

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<sup>5</sup> The ACLG system is based on a three-step hierarchy. Each step allocates a prefix made up of three letters to produce a unique identifier for each type of local government area. The system’s full classification structure contains 22 categories. A medium-sized council in a rural agricultural area, for example, would be classified as RAM – Rural, Agricultural, Medium.

Figure 2 Australian Classification of Local Governments Scheme

Step 1	Step 2	Step 3	Identifiers	Category
<b>URBAN (U)</b>				
Population more than 20 000	CAPITAL CITY (CC)	Not applicable		UCC
OR	METROPOLITAN DEVELOPED (D)	SMALL	up to 30 000	UDS
If population less than 20 000, EITHER	Part of an urban centre of more than 1 000 000 or population density more than 600 per square kilometre	MEDIUM	30 001–70 000	UDM
		LARGE (L)	70 001–120 000	UDL
		VERY LARGE (V)	more than 120 000	UDV
Population density more than 30 persons per square kilometre OR 90 per cent or more of the local governing body population is urban	REGIONAL TOWNS/CITY (R)	SMALL	up to 30 000	URS
		MEDIUM	30 001–70 000	URM
		LARGE (L)	70 001–120 000	URL
		VERY LARGE (V)	more than 120 000	URV
	FRINGE (F)	SMALL	up to 30 000	UFS
		MEDIUM	30 001–70 000	UFM
		LARGE (L)	70 001–120 000	UFL
		VERY LARGE (V)	more than 120 000	UFV
<b>RURAL (R)</b>				
A local governing body with population less than 20,000 AND Population density less than 30 persons per square kilometre AND Less than 90 per cent of local governing body population is urban	SIGNIFICANT GROWTH (SG)	Not applicable		RSG
	Average annual population growth more than three per cent, population more than 5000 and not remote			
	AGRICULTURAL (A)	SMALL	up to 2000	RAS
		MEDIUM	2001–5000	RAM
		LARGE (L)	5001–10 000	RAL
		VERY LARGE (V)	10 001–20 000	RAV
	REMOTE	EXTRA SMALL (X)	up to 400	RTX
		SMALL	401–1000	RTS
		MEDIUM	1001–3000	RTM
		LARGE (L)	3001–20 000	RTL

Source: Department of Infrastructure and Regional Development (2013)

**The Commission is seeking information and views on:**

- 3.1 Is the Australian Classification of Local Governments an appropriate way to group similar councils for comparison? Is there a better approach?
- 3.2 Is the proposed ten-year timeframe to analyse costs and efficiency appropriate?
- 3.3 Are there any other sources of data that would help the Commission?

## 4. Analysing council costs

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The Commission has been asked to conduct an analysis of local government costs and the key drivers of these costs.

To enable comparisons between councils and over time, some consideration will need to be given to the most appropriate way to treat the data. Some options for presenting and analysing cost data include:

- analysing costs as total costs, unit costs or proportions of total costs;
- deflating time-series data by an appropriate deflator to enable comparisons across time; and
- comparing costs across all councils or only similar councils.

The total costs as reported in the SALGGC include employee costs; materials, contracts and other expenses; depreciation/amortisation; and finance costs (including interest payments). Unless a strong argument can be found for using a different definition, the Commission will analyse the determinants of costs using the reported expenditures from the SALGGC as total expenditure and expenditure by function<sup>6</sup>.

Various proxy measures of outputs can be used depending on the context and the available data. Some examples include council population, number of residential, rural and commercial properties, number of health inspections conducted and kilometres of road resurfaced.<sup>7</sup>

Examples of unit costs include presenting total costs per rateable property, per capita or per amount of activity such as the number of development assessments or library loans. Some further examples of possible methods of calculating unit costs, as well as examples of the data that has been made available to the Commission from the SALGGC are presented in Figure 3 below.

The most common choice of deflator to enable comparison across time is the Consumer Price Index (CPI). Other possible options include the Wage Price Index (WPI) and the Local Government Price Index (LGPI).

Other issues on which the Commission has not yet formed a view include:

- the best treatment of capital (total expenditure, average across several years or using depreciation);
- whether FTEs or total wages is the better measure of staff numbers; and
- how to account for differences in quality of outputs.

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<sup>6</sup> Total expenditure and expenditure by function as reported by councils in the supplementary returns of the SALGGC (SALGGC, 2017a)

<sup>7</sup> For a further discussion see Drew and Dollery (2014).



Figure 3 SALGGC approach to expenditure functions

<b>Expenditure Function</b>	<b>Standard Cost</b>	<b>Units of Measure</b>
Waste Management	Reported expenditures <sup>1</sup>	Number of Residential, Rural and Commercial (Shop) Properties
Aged Care Services	Reported expenditures <sup>1</sup>	Population aged 65+ from the ABS Census and estimated resident population
Services to Families and Children	Reported expenditures <sup>1</sup>	Population aged 0-14 years from the ABS Census and estimated resident population
Health Inspection	Reported expenditures <sup>1</sup>	Establishments to inspect
Libraries	Reported expenditures <sup>1</sup>	Estimated Resident Population
Sport, Recreation & Culture	Reported expenditures <sup>1</sup>	Population aged 5-64 years from the ABS Census and Estimated Resident Population
Sealed Roads – Built-Up <sup>5</sup>	Reported expenditures <sup>1</sup>	Kilometres of built-up sealed road as reported in GIR
Sealed Roads - Non-built-up <sup>5</sup>	Reported expenditures <sup>1</sup>	Kilometres of non-built-up sealed road as reported in GIR
Sealed Roads - Footpaths etc	Reported expenditures <sup>1</sup>	Kilometres of built-up sealed road as reported in GIR
Unsealed Roads – Built-up <sup>5</sup>	Reported expenditures <sup>1</sup>	Kilometres of built-up unsealed road as reported in GIR
Unsealed Roads - Non-built-up <sup>5</sup>	Reported expenditures <sup>1</sup>	Kilometres of non-built-up unsealed road as reported in GIR
Unformed Roads <sup>5</sup>	Reported expenditures <sup>1</sup>	Kilometres of unformed road as reported in GIR Roads
Stormwater Drainage Maintenance 2,3	Reported expenditures <sup>1</sup>	Number of urban properties <sup>4</sup>
Community Support	Reported expenditures <sup>1</sup>	3yr average population * SEIFA Advantage Disadvantage CRI
Jetties and Wharves	Reported expenditures <sup>1</sup>	Number of jetties and wharves
Public Order and Safety	Reported expenditures <sup>1</sup>	Total number of properties
Planning and Building Control	Reported expenditures <sup>1</sup>	Number of new developments and additions
Bridges	Reported expenditures <sup>1</sup>	Number of bridges as reported in GIR
Environment and Coastal Protection	Reported Expenditures <sup>1</sup>	Estimated Resident Population
Other Needs Assessments	Set at 1.00.	Based on Commission determined relative expenditure needs in a number of areas <sup>6</sup>

Source: South Australian Local Government Grants Commission (2017)

There are differing views on the most appropriate measure of capital. Some have argued that reported expenditure is not an appropriate measure as it can be highly variable between years, which could affect efficiency estimates. These studies often argue that

depreciation is a more appropriate measure as it is closer to a measure of capital use rather than expenditure. However, this too has its limitations as differences in accounting treatment of capital may result in differences in depreciation.<sup>8</sup>

Drew, Kortt and Dollery (2015) argue against the inclusion of interest costs in the calculation of total costs for efficiency estimation as they relate to past council decisions, not current performance. They argue that borrowing costs are more associated with inherited debt and that these long-term costs are more closely associated with the concept of financial sustainability than efficiency. The Commission will seek views on these definitions during consultation on this methodology paper.

Compiling this information will allow the Commission to consider the relationships between costs and their drivers, including council outputs produced in the context of their local conditions.

**The Commission is seeking information and views on:**

- 4.1 What are the key determinants or drivers of council costs and how have councils' costs changed over time?
- 4.2 What is the best approach to defining and measuring costs for comparisons across councils or through time?
- 4.3 What is the most appropriate measure of capital expenditure?
- 4.4 What measures of council service quality are available?

## **5. How to estimate local government efficiency**

The Commission is required to develop and analyse measures of local government efficiency and productivity. Improving council efficiency has positive implications for all relevant stakeholders including residents, businesses, the tax paying public as well as the councils in ensuring their financial sustainability.

While the terms productivity and efficiency are related concepts and have sometimes been used interchangeably, they are not precisely the same concept. Productivity is simply defined as the ratio of the outputs that an organisation produces to the inputs that it uses.<sup>9</sup> Commonly, productivity can refer to either partial productivity, which is a single-input, single-output measure, or total factor productivity (sometimes called multifactor productivity), which is a productivity measure involving all inputs and outputs.

Efficiency refers to the relationship between the quantity of inputs used and outputs produced. An organisation is efficient if it produces the largest possible output from a given

<sup>8</sup> The Australian Accounting Standards allow for a potentially infinite number of methods to estimate depreciation – including straight line, diminishing balance, units of production and fair value. Drew and Dollery (2015) demonstrate that local governments inconsistently apply depreciation.

<sup>9</sup> For a more detailed discussion of the concepts of productivity and efficiency see Coelli et al (2005).



set of inputs or if it uses the least possible quantity of inputs to produce a given level of output.

Within the local government sector, it is difficult to determine efficiency in absolute terms. Therefore, the efficiency measures proposed are relative to an established benchmark.

There are several possible methodologies to setting benchmarks and then assessing council efficiency, including partial measures and global (multiple-input, multiple-output) methods. The Commission proposes complementing partial productivity measures with global measures to provide a more complete picture of local government efficiency.

The four criteria the Commission proposes to use when selecting appropriate input and output measures are set out below. These criteria are based on those used by the Victorian Essential Services Commission.<sup>10</sup>

Objective	Minimal reliance on subjective inputs or arbitrary values
Accurate	Inputs and outputs are measurable and verifiable
Applicable	Aggregate measures are: <ul style="list-style-type: none"> <li>• Meaningful - they are related to the goals and provide information that is valuable to policy/decision makers</li> <li>• Comprehensive – they capture the most important aspects of a council’s performance</li> </ul>
Defensible	Consistent with economic theory Calculated in a transparent and understandable manner. Measures are relatively simple to calculate and easy to explain to a broad audience.

**The Commission is seeking information and views on:**

- 5.1 What is the experience of South Australian councils in measuring and monitoring efficiency?
- 5.2 Are there any examples of efficiency monitoring programs in other jurisdictions?
- 5.3 Have these efficiency monitoring programs resulted in improved council efficiency?

**5.1 Partial productivity measures**

The most widely used measures of local government productivity are partial productivity measures, which are single-input, single-output measures of productivity. They have commonly been used for benchmarking and provide a useful way of comparing a council’s performance against similar councils.

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<sup>10</sup> Essential Services Commission (2017)

These partial productivity measures are computationally simple and easy to understand. They also provide valuable insight into where councils costs are higher or lower than comparable councils in certain areas.

An example of the use of such measures in Australia is Victoria’s Local Government Performance Reporting Framework, which is used as part of the ‘Know Your Council’ Compare Councils tool.<sup>11</sup> It publishes a range of measures of councils’ performance across 12 service areas and allows for direct comparison of up to four ‘similar’ councils. Similar frameworks exist in other states.

The Commission understands that currently 16 South Australian councils participate in the Local Government Professionals ‘Australasian LG Performance Excellence Program’<sup>12</sup> which provides comparative information, including a range of partial productivity measures, on participating councils. The program currently has 146 participating councils across New South Wales, Western Australia, South Australia and New Zealand.

However, owing to their simplicity, partial productivity measures do not account for differences in council size, scale, and underlying cost structures. Therefore, direct comparisons between councils can be misleading.

## **5.2 Global efficiency measures**

In addition to the partial productivity measures described above, the Commission will undertake a global analysis that enables the estimation of multiple-input, multiple-output estimates of local government efficiency. This also enables local conditions that affect performance to be taken into account.

The two prominent approaches to local government efficiency analysis in the literature are Data Envelopment Analysis (DEA) and Stochastic Frontier Analysis (SFA). The Commission proposes DEA as the preferred methodology, as it has several advantages as discussed below. Moreover, there is limited use of SFA in local government efficiency analysis stemming from assumptions related to functional form as well availability of complete price data and a single overall output measure<sup>13</sup>.

### **5.2.1 Data Envelopment Analysis (DEA)**

DEA is the most commonly used methodology in measuring the relative efficiency of local councils in Australia. This approach does not require assumptions regarding the relationship between inputs and outputs. It uses a technique known as linear programming to construct an ‘efficiency frontier’ (comprising of councils that convert inputs into outputs most efficiently), and then estimates the relative efficiency of councils based on the distance from the frontier.

The results from the DEA estimation can be further analysed to examine the effect of external factors and council characteristics on estimated council efficiency as discussed in section six.

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<sup>11</sup> Know Your Council (2019)

<sup>12</sup> LG Professionals Australia SA (2018)

<sup>13</sup> See Worthington (2000) for a comparison of DEA and SFA methodologies in the local government sector.

Questions that can be answered using DEA<sup>14</sup>:

- How to select an appropriate role model to serve as a benchmark for performance improvement?
- What are the most efficient councils within a local government area?
- What are the characteristics of efficient councils?

Advantages of using DEA in analysing local government performance are that it:

- provides the observed efficiencies of individual councils, which helps in benchmarking against performance targets;
- identifies possible peers or role models, which also helps in benchmarking;
- can readily incorporate multiple inputs and outputs using information on output and input quantities.
- it does not require price data. This makes it particularly useful in analysing efficiency in government service providers (such as councils), where it may be difficult to assign prices to inputs and outputs;
- provides a way of identifying possible sources of inefficiency as well as levels of efficiency;
- provides simple efficiency scores that are easy to interpret and understand;
- does not require an assumption regarding the relationship between inputs and outputs (as is required in the use of the SFA approach); and
- allows for different assumptions regarding economies of scale (see Box 1).

The literature discusses several limitations of DEA including the following:

- DEA measures efficiency relative to best practice with the given sample. Therefore, it is not meaningful to compare across groups outside the sample;
- efficiency scores are sensitive to input and output specification and the size of the sample.

The Commission acknowledges the limitations of DEA, particularly within the context of a policy framework. However, it is useful in providing a broad understanding of the relative efficiency of councils and is the most widely used methodology in local government efficiency analysis, including by the Essential Services Commission of Victoria (ESC 2017).

*Box 1 Returns to scale*

**Constant Returns to Scale (CRS) and Variable Returns to Scale (VRS) frontiers**

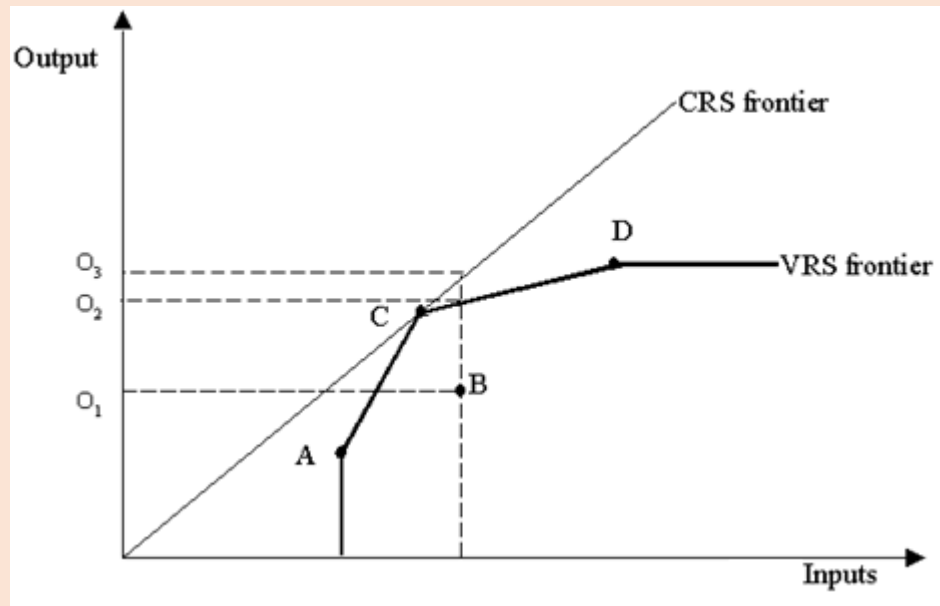
The production frontier depends on the scale assumptions that underpin the model. There are two scale assumptions generally used: constant returns to scale (CRS), and variable returns to scale (VRS).

CRS assumes that output will change in the same proportion as the proportionate change in inputs (e.g. a doubling of all inputs will double output). It evaluates inefficient councils against any peer on the frontier (regardless of size).

<sup>14</sup> Steering Committee for the Review of Commonwealth/State Service Provision (1997)

VRS takes into account the fact that production technology may exhibit increasing, constant and decreasing returns to scale. The effect of the scale assumption on the efficiency measure is illustrated in Figure 4.

Figure 4 Simplified single-input -output production frontiers



Source: Pascoe et al (2003)

Points A, B, C, and D (which refer to input and output pairs for different councils) in Figure 4 are used to estimate the efficient frontier under both scale assumptions. Points along the frontier are defined as efficient. With constant returns to scale, the frontier is defined by point C, with all other points falling below the frontier (hence indicating relative inefficiency).

Under variable returns to scale, the frontier is defined by points A, C and D. In this scenario, only point B lies below the frontier indicating relative inefficiency. Under both estimates, efficient councils are given a score of 1 and (relatively) inefficient councils are assigned a score between 0 and 1, with a lower score indicating lower relative efficiency.

DEA can be applied across the group in the sample to obtain overall efficiency scores, and to different sub-groups within the sample. Therefore it is possible to estimate relative efficiency scores for all the councils as a single group as well as for councils grouped by common characteristics, which will enable more meaningful comparisons.

### 5.2.2 Estimating local government efficiency using DEA

The economic literature on applying DEA to estimate efficiency of local governments, can be divided into two approaches. First, to estimate the efficiency of the entire council, covering

all or at least several of the services that local governments provide. Other studies however seek only to evaluate the efficiency of a particular service.

These efficiency scores can then be further analysed to explain differences in estimated council efficiency. This process is described in section six.

**5.2.2.1 Whole of council efficiency**

While there have been many studies estimating local government efficiency, both in Australia and overseas, there have been few previous attempts at estimating the efficiency of South Australian local governments.<sup>15</sup> As the responsibilities and functions of local governments differ across jurisdictions, comparable studies in Australia are likely to offer the best reference for estimating efficiency of South Australian local governments, although even within Australia these roles differ (for example in some states local governments provide water services whereas South Australian councils do not).

The Victorian Essential Services Commission (ESC, 2017) used a whole of council DEA model to estimate total factor productivity change for Victorian councils. While their focus was on measuring movement of the frontier itself rather than distance from the frontier, it provides an example where this methodology has been applied to inform policy.

Other attempts to estimate efficiency of local governments in Australia include Fogarty and Mugera (2013), Worthington (2000) and Drew, Kortt and Dollery (2015). A summary of the inputs and outputs used in each model is presented in Table 1.

*Table 1 Summary of Methodologies for Australian Local Government Efficiency Measurement*

Author	Inputs	Outputs	Data
<b>Victorian Essential Services Commission (2017)</b>	Council Staff (\$), Capital (\$)	Households, businesses, length of roads	79 Victorian councils
<b>Victorian Essential Services Commission (2017)</b>	Council Staff (FTE), capital (\$)	Households, businesses, length of roads	79 Victorian councils
<b>Victorian Essential Services Commission (2017)</b>	Council Staff (\$) Capital (\$)	Households, businesses, length of roads, waste collected	79 Victorian councils
<b>Victorian Essential Services Commission (2017)</b>	capital (\$) operating expenses (excl. depreciation) (\$)	Households, businesses, length of roads	79 Victorian councils
<b>Victorian Essential Services Commission (2017)</b>	operating expenses (excl. depreciation) (\$) + depreciation (\$)	Households, businesses, length of roads	79 Victorian councils

<sup>15</sup> Drew (2018) is one of few estimates of relative technical efficiency of South Australian local governments that the Commission has identified.

Author	Inputs	Outputs	Data
<b>Fogarty and Mugera (2013)</b>	employee costs, physical expenses and financial expenses	Population, number of properties, length of sealed and unsealed roads	98 Western Australian councils (2009,2010)
<b>Worthington (2000)</b>	Number of workers, financial expenditures (except depreciation), other expenditures	Total population, number of properties acquired to provide the following services: potable water, domestic waste collection, surface of rural and urban roads (km).	177 New South Wales councils (1993)
<b>Drew, Kortt and Dollery (2015)</b>	Staff (\$), Capital (\$)	Businesses, Households, Roads	152 New South Wales councils

Drew, Kortt and Dollery (2015) provide an analysis of previous attempts at estimating local government efficiency and estimate four different models. They argue for a comprehensive and succinct specification of inputs and outputs as described in the last row of Table 1. This is also the same specification of inputs and outputs used by the Victorian Essential Services Commission described in the first row of Table 1.

However, an underlying assumption of this methodology is that all local governments in the sample perform the same services and that the most efficient local government is the one that has the lowest staff or capital expenditure per number of businesses, households or length of roads. While this is in many cases a reasonable assumption, it is possible in some circumstances that a legitimate policy decision supported by ratepayers to provide an additional service not offered by other councils could result in a council being deemed inefficient in this model.

The Commission will estimate whole of council relative efficiency for South Australian councils using DEA methodology similar to that used in Drew, Kortt and Dollery (2015) and by the Victorian Essential Services Commission. The Commission will apply the same methodology for subgroups of councils, such as those mentioned in section 3.2, to enable comparison across similar councils.

### **5.2.2.2 Service specific efficiency**

Estimating the efficiency of local governments in providing a single service avoids, to an extent, the criticism of whole of council estimation in defining a comprehensive set of reasonable input and output indicators fully describing local government’s activities. Estimating service-specific efficiency also largely addresses the criticism that councils providing additional services may be deemed inefficient as it is more likely that local governments face similar costs in providing the same service. However, as it looks at service delivery in greater detail, it requires more detailed data. While it is unable to provide an estimate of overall council efficiency, it may explain a significant proportion of a council’s efficiency.

There have been numerous attempts at estimating local government efficiency in providing individual services in Australia. These mostly relate to planning and regulatory services, domestic waste services, library services, and water services. Table 1 provides a summary of the inputs and outputs used in each model.

*Table 2 Summary of Past Methodologies for Service Specific Efficiency Measurement*

<b>Author</b>	<b>Service</b>	<b>Inputs</b>	<b>Outputs</b>	<b>Data</b>
<b>Worthington (1999)</b>	Library Services	Gross library expenditure, population, area, NESB, socio-economic index	Number of library issues	168 NSW Councils
<b>Worthington and Dollery (2000)</b>	Planning and regulatory services	Planning expenditure, legal expenditure, no. full-time planning staff, population growth, development activity index, heritage and environment index, proportion of non-residential properties, population distribution, NESB	No. building applications, no. development applications determined	173 NSW Councils
<b>Worthington and Dollery (2001)</b>	Domestic waste services	Waste collection expenditure, no. properties served, average occupancy rate, population density, population distribution, waste disposal cost index	Total garbage and recyclables collected, implied recycling rate	103 NSW Councils
<b>Worthington and Dollery (2002)</b>	Planning and regulatory services	Planning expenditure, legal expenditure, no. full-time planning staff, population growth, development activity index, heritage and environment index, proportion of non-residential properties, population distribution, NESB	No. building applications and development applications determined and approved	173 NSW Councils
<b>Worthington and Dollery (2002)</b>	Water Services	Cost for management, maintenance and operations, energy and chemicals and capital replacement	No. assessments, water consumption, water quality index, service index	Note: South Australian councils do not provide water services

In 2016-17, the four largest expense categories for South Australian councils were transport<sup>16</sup>, recreation, waste management and other environment, accounting for over 60 per cent of council expenditure. Therefore, these four areas are likely to have the largest impact on overall council efficiency.

While transport is the single largest expense category for South Australian councils, the economic literature offers little guidance in reliably measuring its efficiency.

**The Commission is seeking information and views on:**

- 5.4 Is there value in estimating service-specific efficiency of councils?
- 5.5 What services are most appropriate to estimate council efficiency?

**5.3 Monitoring efficiency changes over time**

As discussed above, DEA efficiency measures are defined relative to the efficiency frontier of the sample under consideration. It is therefore not meaningful to compare efficiency scores across different samples as all calculations are based on different efficiency frontiers. It also means that it is not possible to directly compare efficiency scores over different time periods, even for the same underlying sample.

Window-DEA is a variation of DEA, where efficiency scores are estimated for successively overlapping time periods (called a 'window') which provide a means of comparing efficiency change over time (Flokou *et al.*, 2017).

The Commission will further explore and seek expert advice on the suitability of this and other relevant approaches.

**The Commission is seeking information and views on:**

- 5.6 How do councils monitor their efficiency over time?
- 5.7 Are there any examples or case studies of councils benchmarking their costs and efficiency against other councils?

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<sup>16</sup> As per the SALGGC definition transport includes: aerodromes; bridges and culverts; footpaths and kerbing; roads; traffic management; and water transport services (SALGGC 2017b).



## 6. Understanding factors that influence efficiency of councils

The Terms of Reference for the inquiry require the Commission to identify and analyse key local government costs and cost drivers. Council performance may be influenced by factors outside their control, including socio-economic and demographic characteristics of council areas, their geographic location, and operating and policy environments.

Some of the limitations of the DEA efficiency estimation described in section five can be addressed by analysing the effect of external factors on council efficiency scores. This will also assist in establishing a context with which the estimated efficiency scores from the DEA analysis can be meaningfully interpreted.

The most commonly used methodology to identify these factors is an extension to the DEA approach described above called Two-Stage DEA. The second stage involves using the DEA efficiency scores in a regression model to further explain differences in estimated efficiency scores of councils.

The type of factors analysed would depend on the specific research or policy questions addressed. Existing studies have used a range of variables summarised in Table 3.

Table 3 Factors that influence efficiency of councils

Study	Factors used in the study
Comparing cost efficiency of NSW councils. Worthington (2000)	Grant dependence; debt service; current assets; number of staff; average residential property rate
Local government efficiency in WA. Fogarty and Mugerá (2013)	Population density; rate share of total expenses; ABS disadvantage index; employee cost per resident
Local government efficiency in NSW. Drew et al (2015)	Population; population density; percentage of population over/under 65; percentage of ATSI <sup>17</sup> population; percentage of NESB <sup>18</sup> population; annual unemployment rate; average annual wage; total liabilities; total infrastructure value; grant funding; depreciation; sealed and unsealed roads (km)
Planning and regulatory efficiency in NSW. Worthington and Dollery (2000)	Geographic and demographic conditions classified into five categories (urban developed; urban fringe; urban regional; rural significant growth; rural agricultural)
Waste management in NSW. Worthington and Dollery (2001)	
Efficiency measurement in municipal water services in NSW. Woodbury and Dollery (2004)	Population, properties per km of main location; rainfall; proportion of residential properties; unfiltered water; groundwater.

<sup>17</sup> Aboriginal and Torres Strait Islander

<sup>18</sup> Non-English-speaking background

Study	Factors used in the study
Measuring productivity in the local government sector in VIC. Applied Econometrics (2017)	Population, population density, proportion of population under 15; proportion of population over 65, percentage of ATSI population, percentage of NESB population; unemployment rate; median annual wage rate; total liabilities; total infrastructure value; total grants, annual depreciation; length of roads

For the purposes of analysing factors that affect costs and efficiency in the South Australian local government sector, the Commission proposes the following:

- population/population density;
- socio-economic and demographic characteristics (such as proportion of NESB population, proportion of ATSI population; proportion of population over 65);
- labour market characteristics (such as unemployment rates; median wage);
- geographic/location characteristics;
- council characteristics (such as size; output mix).

The availability and quality of data will be an important consideration in the selection of appropriate variables for this purpose.

The Commission acknowledges that such an analysis will be limited by the data available and may not capture the context in which councils operate in its entirety.

**The Commission is seeking information and views on:**

- 6.1 Are the factors used in previous studies likely to influence local government efficiency in South Australia?
- 6.2 Are there any additional factors that could affect the costs and efficiency of South Australian councils?

**6.1 The need for additional qualitative information**

The Commission acknowledges that there are limitations in each of the methods of efficiency measurement outlined above. While all are useful and provide valuable insight, none provides a comprehensive picture of council efficiency and its determinants. It will therefore be important to establish a context around which these efficiency estimates can be meaningfully interpreted.

There may be both internal and external factors that result in a council being identified as 'inefficient' under any one methodology where there is a reasonable explanation that a council is actually efficient. External factors may include matters outside a council's control that result in higher costs, such as extreme weather events, unfavourable geography or large numbers of tourists or non-residents using council services. Internal factors might

include where a council's ratepayers expect a higher level or range of services and are willing to pay for them to be provided.

Council decisions on the scope and quality of services provided, and how they are delivered have implications for costs and efficiency.

Throughout the consultation process, the Commission will be seeking additional information from councils about how they monitor efficiency, circumstances in which they have identified inefficiency, their experience with past reforms and how and why their operations and costs differ from other councils.

**The Commission is seeking information and views on:**

- 6.3 What are the key internal and external factors that have impacted councils estimated efficiency over the last ten years?
- 6.4 What are the key internal and external factors which councils expect to impact their efficiency going forward?
- 6.5 What decision-making processes do councils use to determine the scope of services they provide and how these services are provided?

## **7. Options for improved council performance**

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The Commission will consider recent changes to policy, governance, management practices and business processes in the local government sector in South Australia and other jurisdictions and their potential to improve council performance. The Commission has also been asked to provide advice and recommendations on options for both councils and the South Australian Government to improve efficiency, lower costs and enhance local government financial accountability.

Strengthened financial accountability, through, for example increased transparency or enhanced governance arrangements, could be expected to contribute to improvements in efficiency. The Commission is interested in hearing stakeholder views on what enhancements in financial accountability could assist councils to realise efficiency gains.

Within this context, the influence of policy and governance on council performance is an important consideration. The Commission will consider recent reforms in South Australia and other jurisdictions to policy, governance and management practices in the local government sector and their potential to improve council performance.

Councils have also initiated strategies to improve their efficiency and other aspects of performance. There have also been examples of initiatives across groups of councils, as well as the entire council sector, in areas such as insurance, finance and procurement to improve council efficiency and reduce costs.

The Commission is interested to hear from councils which have introduced improvement initiatives, and the impact of these initiatives on council performance.

This will include seeking feedback from stakeholders on what reforms have been successful, whether any have had unintended consequences and what other jurisdictions can provide relevant examples for South Australia in terms of previous reform efforts.

**The Commission is seeking information and views on:**

- 7.1 What are councils’ experiences with recent reforms in policy, governance and management?
- 7.2 What actions/reforms have council initiated to improve efficiency or reduce costs?
- 7.3 What reforms in other jurisdictions successfully resulted in improved council efficiency?
- 7.4 How can financial accountability in the local government sector be enhanced?
- 7.5 Are there examples of actions initiated by councils to increase efficiency? What has worked and what has not worked?

## 8. In Conclusion

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The Commission will analyse council expenditure and service provision data over the past ten financial years to identify trends in expenditures and the drivers behind these trends.

The Commission will estimate a range of efficiency estimates, including partial productivity measures, whole of council DEA estimates and, if appropriate, service specific DEA estimates. The Commission will pursue additional analysis on potential factors that may influence council efficiency. The quantitative analysis will be complemented with qualitative and contextual information and advice from councils to obtain a fuller understanding of councils’ costs and efficiency. The Commission will also investigate how these methods can be employed to assist councils improve their understanding of overall performance relative to other councils and to improve their efficiency.

Council efficiency scores will be presented in the Commission’s reports in such a way as to preserve anonymity of individual councils. Councils are welcome to contact the Commission if they wish to receive their efficiency scores on a confidential basis.

Finally, the Commission intends to review the experiences of councils in South Australia and other jurisdictions in passing through to ratepayers the benefits from efficiency and productivity gains. These benefits may include:

- reduced rates (or a reduction the rate of increase);
- wider scope of services provided by councils; and
- higher quality of council-provided services.

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## Appendix 1. Terms of Reference

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### Background

The South Australian Government is concerned that the rising cost of living has put undue pressure on South Australian households and businesses. Every level of government has a duty to ensure service delivery is as efficient and effective as possible to contain costs to taxpayers and ratepayers and ease cost of living pressures.

South Australian councils collectively manage a budget of \$2 billion and maintain infrastructure and other physical assets worth almost \$23 billion. Effective local government can be the mainstay of a strong community. It is responsible for aspects of everyday life from roads and infrastructure, to well-maintained libraries and community services.

Consequently, sustaining good financial and performance management practices and seeking to continually enhance productivity and efficiency are critical factors for councils as they aim to continue to improve the services they provide to their local community.

Improved performance monitoring by councils, combined with meaningful data analysis and reporting, will improve public accountability as well as provide evidence and opportunities for councils and the South Australian Government to drive and support continuous improvement. Further, effective performance reporting by councils is essential for ensuring accountability to residents and ratepayers as to how public money is being spent and the quality of services delivered.

An SAPC public inquiry process would enable full engagement with local councils and other stakeholders, as well as providing to both local and state governments some independent and objective analysis and advice on the issue of local government costs.

### Terms of Reference

The Minister for Local Government has developed a 12-month plan for local government reform to improve council efficiency and effectiveness and restore confidence in council decision making. The reform elements address:

- Stronger council member capacity and better conduct
- Efficient and transparent local government representation
- Lowering costs and enhanced financial accountability in the local government sector
- Simpler regulation.

The South Australian Government is seeking independent advice on the third element regarding cost and financial accountability. This requires consideration of the key determinants of costs, or “cost drivers” of local council budgets; options to lower council costs; and how to ensure lower costs flow through to ratepayers.

Any interpretation of changes in local government costs, or comparisons between councils, would need to be able to take account of the impacts of factors likely to affect costs such as council size/scale, quality standard and mix of services provided, size of population and geographical area served and urban versus outer metro versus rural and remote locations.



## Scope

The Commission is asked to consider and report on the following matters regarding local government costs and efficiency:

1. Analysis of the information on local government costs and the key drivers of costs including:
  - Identify trends in local government activities and costs of local government operations
  - Identify the drivers of local government costs and assess their impacts.
2. Develop and analyse measures of local government efficiency and productivity.
3. Identify mechanisms and indicators that could be used by the local government sector to measure and improve performance over time.
4. Consider recent reforms in South Australia and other jurisdictions to policy, governance and management practices in the local government sector and their potential to improve council performance.
5. Provide advice on possible options to guide and assist councils to improve efficiency and create capacity to pass on cost reductions to rate payers.
6. Provide recommendations on actions the South Australian Government could take to lower local government costs and enhance local government financial accountability.

In its consideration of the above matters, the Commission is expected to have regard to the changing service expectations of communities and the long-term financial sustainability of councils.

## Inquiry Process

The Commission will consult local government and other key stakeholders on the methodology to be used for its analysis.

The Commission is to publish a draft report and seek submissions before presenting a final report to the Government.

The Commission will second and/or engage staff with required analytical expertise and knowledge of the local government sector for the period of the inquiry.

The inquiry will involve state-wide consultation with Councils, community groups and relevant professionals in the public, private and professional bodies as part of the public engagement process.

Key dates:

Draft report	August 2019
Submissions on draft report	September 2019
Final report	22 November 2019