



# Water and Sewerage Capital Contributions



# Water and sewerage capital contributions

Draft Water and Sewerage Capital  
Contributions Code (Attachment A)

Version 1.0, 30 March 2017

## 1. INDUSTRY CODE

The Water and Sewerage Capital Contribution Code (Code) is an **Industry Code** determined by the **ICRC** under Part 4 of the **Act**.

## 2. APPLICATION AND PURPOSE OF THIS CODE

### 2.1 Application

- (a) This Code applies to a **Water Utility** in relation to its **Water Network** and to a **Sewerage Utility** in relation to its **Sewerage Network**.
- (b) It is a requirement under section 25(2) of the **Act** and the **Utility's** licence that a **Utility** comply with an **Industry Code** relevant to the licensed service.

### 2.2 Purpose

The purpose of this Code is to outline the principles and procedures by which a **Water Utility** and a **Sewerage Utility** may require a **Customer** to contribute towards the development or augmentation of the **Water Network** or **Sewerage Network**, in connection with a **Development**.

### 2.3 Transition

- (a) Subject to clause 2.3(b), no **Class 2 Infrastructure Charge** is payable for a **Development** inside a **Precinct** that is undertaken by a **Customer** (or a **Developer** on behalf of a **Customer**) under a **Development Approval** the application for which is lodged before [1 July 2019 – two years after go live date] unless the **Customer** agrees that the **Class 2 Infrastructure Charge** will be payable for that **Development**.
- (b) The **Class 2 Infrastructure Charge** is payable for a **Development** inside a **Precinct** that is undertaken by a **Customer** (or a **Developer** on behalf of a **Customer**) if the date of the contract for the acquisition by the **Customer** of the land on which the **Development** is being undertaken is on or after [1 July 2017 – go live date].

## 3. DICTIONARY

The dictionary at the end of this Code is part of this Code.

## 4. PAYMENT OF CAPITAL CONTRIBUTION CHARGE

Where a **Capital Contribution Charge** is payable, it will become payable by the **Customer** at the earlier of:

- (a) the date on which the **Utility's** connection fee for the **Connection** associated with the **Development** is payable; and
- (b) the date on which a **Certificate of Occupancy** is issued in relation to the **Development**.

## 5. CLASS 1 INFRASTRUCTURE

A **Utility** will construct any **Class 1 Infrastructure** required at its own expense and without requiring payment of a Capital Contribution Charge under this Code,

subject to any amount payable by a **Customer** as a **Capital Contribution Charge** under clause 8 of this Code.

This clause 5 applies regardless of whether the **Class 1 Infrastructure** is inside a **Precinct** or outside a **Precinct**.

## 6. CLASS 2 INFRASTRUCTURE

Where a **Customer** undertakes or causes a **Developer** to undertake a **Development** the **Customer** must pay a **Capital Contribution Charge** to the relevant **Utility**, calculated in accordance with clause 9.1 or clause 9.2 (as applicable).

## 7. CLASS 3 INFRASTRUCTURE

In connection with a **Development**, a **Customer** will (or will cause a **Developer** to) design and construct at the **Customer's** own cost any required **Class 3 Infrastructure**.

No **Capital Contribution Charge** is payable under this Code by a **Customer** in connection with the design or construction of **Class 3 Infrastructure**.

This clause 7 applies regardless of whether the **Class 3 Infrastructure** is inside a **Precinct** or outside a **Precinct**.

## 8. OTHER CHARGES

### 8.1 Removals, relocations and specific requirements

If, in connection with a **Development**, a **Customer** requests a **Utility** to, or a **Utility** determines that it is necessary to, remove, relocate, provide protection or make changes to any part of a **Utility's** existing **Sewerage Network** or **Water Network** to:

- (a) permit construction, operation, use or enjoyment of the proposed **Development** or to enable continued provision of **Water Services** or **Sewerage Services**; or
- (b) reduce the risk that the **Sewerage Network** or **Water Network** may constitute an **Environmental Nuisance** to any person where such risk is increased due to the construction, operation, use or enjoyment of the proposed **Development**,

the **Utility** may charge, and the **Customer** must pay, the full **Costs** incurred in carrying out such works.

### 8.2 Application of clause 8.1

Clause 8.1 applies regardless of:

- (a) whether the works include **Class 1 Infrastructure**, **Class 2 Infrastructure** or **Class 3 Infrastructure**;
  - (b) whether the **Infrastructure** is inside a **Precinct** or outside a **Precinct**;
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- (c) the age or utilisation of the asset; and
- (d) any previous contribution towards the cost of installing those assets.

### 8.3 No credit or allowance

The **Utility** will not provide any payment, credit or other allowance for assets removed, relocated or changed.

## 9. CALCULATION OF INFRASTRUCTURE CHARGES AND PRECINCTS

### 9.1 Calculation of Class 2 Infrastructure Charge – inside a Precinct (brownfield)

- (a) The **Class 2 Infrastructure Charge** payable for a **Development** inside a **Precinct** is calculated in accordance with the formula:

$$C2IC = (\text{net increase in EP}) \times C$$

Where:

'C2IC' is the **Class 2 Infrastructure Charge** for a **Development** inside a **Precinct**

'net increase in **EP**' is determined by the **Utility** in accordance with the principles in clause 9.1(b)

'C' is the **Precinct Charge**

- (b) The **Class 2 Infrastructure Charge** payable under this Code for a **Development** inside a **Precinct** will be based on a determination by the **Utility** of the net increase in **EP** in accordance with the following principles:
  - i. where the **Development** involves the disconnection of a **Connection (Existing Connection)** and the re-connection of either the same or a new **Connection (New Connection)**, the net increase in **EP** will be calculated by taking the **EP** of the **New Connection** and deducting the **EP** of the **Existing Connection**;
  - ii. if the **EP** of the **New Connection** is equal to or less than the **EP** of the **Existing Connection**, then the net increase in **EP** is taken to be zero; and
  - iii. the **EP** will be determined taking into account the size, scale and nature of development permitted under the **Development Approval** for the **Development** rather than the size, scale or nature of development permitted under the crown lease, Territory Plan or National Capital Plan.
- (c) When calculating the **Class 2 Infrastructure Charge**:
  - i. the **Precinct Charge Schedule** that applies will be the version in force as at the date on which the application for the **Development Approval** was lodged; and
  - ii. if it is more than 12 months after the date the application for the **Development Approval** was lodged, the **Precinct Charge** will be increased by an amount of 2.5% per annum, with an increase for any part year calculated on a pro-rata basis.

## 9.2 Calculation of Class 2 Infrastructure Charge – outside a Precinct (greenfield)

The **Class 2 Infrastructure Charge** payable under this Code for a **Development** located outside a **Precinct**, is an amount determined by the **Utility** to cover the **Costs** of the **Class 2 Infrastructure** for the **Development**.

Where the land on which **Development** may occur is not wholly within a **Precinct**, the **Class 2 Infrastructure Charge** will be determined on the basis that the entire **Development** is outside the **Precinct**.

## 9.3 Updating the Precinct Charge Schedule

A **Utility** will review, and may, subject to approval by the ICRC, update its **Precinct Charge Schedule** annually.

The new **Precinct Charge Schedule** will apply to the calculation of the **Capital Contribution Charge** for any **Development** inside a **Precinct** for which the application for the **Development Approval** was lodged on or after the date specified in the new **Precinct Charge Schedule**.

## 9.4 Updating the Precincts Map

A **Utility** will review, and may, update its **Map** annually.

The new **Map** will apply to the calculation of the **Capital Contribution Charge** for any **Development** for which the application for the **Development Approval** was lodged on or after the date specified in the new **Map**.

# 10. DETERMINATION OF REQUIRED INFRASTRUCTURE

## 10.1 Required Infrastructure

Whether **Infrastructure** is required is a matter within the discretion of the relevant **Utility** unless the **Utility** is specifically required by law to construct **Infrastructure** assets of a particular type or capacity. **Infrastructure** will be of a standard consistent with the **Utility's** standards and applicable laws.

## 10.2 Assessment of capacity and reliability

The assessment of the reasonable capacity and reliability of **Infrastructure** is a matter within the discretion of the **Utility** unless the **Utility** is specifically required by law to construct **Infrastructure** assets of a particular type or capacity.

## 10.3 Ownership of assets and Infrastructure

The payment of any **Capital Contribution Charge** does not confer on the person paying that charge any ownership in, or other legal or equitable right in respect of, any asset or **Infrastructure** to which that charge may relate.

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# DICTIONARY

## Definitions

- (1) “**Act**” means the *Utilities Act 2000*;
- (2) “**Capital Contribution Charge**” means:
  - a. a **Class 2 Infrastructure Charge**; and
  - b. any amount payable by a **Developer** under clause 8 of this Code;
- (3) “**Certificate of Occupancy**” means a certificate of occupancy issued under the *Building Act 2004* (ACT);
- (4) “**Class 1 Infrastructure**” has the meaning set out in Schedule 1;
- (5) “**Class 2 Infrastructure**” has the meaning set out in Schedule 1;
- (6) “**Class 2 Infrastructure Charge**” is determined in accordance with clause 9.1 or clause 9.2 as applicable;
- (7) “**Class 3 Infrastructure**” has the meaning set out in Schedule 1;
- (8) “**Connection**” means a connection or re-connection to a **Sewerage Network** or **Water Network** or replacement of a water meter (where the water meter replacement is as a consequence of the **Development**) and “**Connected**” has the corresponding meaning;
- (9) “**Costs**” means the amount incurred by a relevant Utility in:
  - a. making **Sewerage Services** or **Water Services** available to parcels of land not already connected to a **Sewerage Network** or **Water Network**;
  - b. varying the capacity of a connection to a **Sewerage Network** or **Water Network**;
  - c. removing, relocating, providing protection to or making changes to a **Sewerage Network** or **Water Network**; and
  - d. all necessary ancillary work,  
including design, labour, materials, plant, transport, overhead and administration costs, plus a reasonable profit margin;
- (10) “**Customer**” has the same meaning as in the **Act**;
- (11) “**Developer**” means a person undertaking a **Development**;
- (12) “**Development**” means subdivision, consolidation, use, building, altering or demolishing a building or structure and **Developed** has a corresponding meaning;
- (13) “**Development Approval**” means, in relation to a **Development**, a development approval under the *Planning and Development Act 2007* (ACT) or a works approval under the *Australian Capital Territory (Planning and Land Management) Act 1988* (Cth) as applicable;
- (14) “**Environmental Nuisance**” means an unreasonable interference with the enjoyment by the public, a section of the public or a person of a place or area, if the interference is caused or likely to be caused by:
  - a. dust, fumes, noise, odour or smoke; or
  - b. an unhealthy, unsightly or otherwise offensive condition because of pollution;
- (15) “**EP**” means ‘equivalent persons’ which is determined by the **Utility** based on the information available at [\[insert web address\]](#) and forms part of the calculation of a **Class 2 Infrastructure Charge**;

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## Water and Sewerage Capital Contribution Code

- (16) “**ICRC**” means the Independent Competition and Regulatory Commission established under section 5 of the *Independent Competition and Regulatory Commission Act 1997* (ACT);
- (17) “**Industry Code**” means a code determined by the **ICRC** under the **Act**;
- (18) “**Infrastructure**” means any or all of Class 1 Infrastructure, Class 2 Infrastructure and Class 3 Infrastructure, as the context permits;
- (19) “**Map**” means the map, as updated from time to time, available at **[insert]**;
- (20) “**person**” includes a natural person, a firm, an unincorporated association or body corporate;
- (21) “**Precinct**” means the area identified as a precinct on the **Map**;
- (22) “**Precinct Charge**” means the charge payable per **EP** for a **Development** in a **Precinct**;
- (23) “**Precinct Charge Schedule**” means the schedule which sets out the **Precinct Charge**, as updated from time to time, available at **[insert]**;
- (24) “**Sewerage Network**” has the same meaning and functions as defined under the **Act**;
- (25) “**Sewerage Utility**” is a person licensed under the **Act** to provide **Sewerage Services**;
- (26) “**Sewerage Services**” means those services as defined in the **Act**;
- (27) “**Territory**” means the Australian Capital Territory;
- (28) “**Utility**” means:
- a. the relevant **Water Utility**, in respect of its **Water Network**, **Water Services** and the **Water Utility’s** associated functions under the **Act**; or
  - b. the relevant **Sewerage Utility**, in respect of its **Sewerage Network**, **Sewerage Services** and the **Sewerage Utility’s** associated functions under the **Act**;
- (29) “**Utility Service**” has the same meaning as defined under the **Act**;
- (30) “**Water Network**” has the same meaning and functions as defined under the **Act**;
- (31) “**Water Services**” means those services as defined in the **Act**; and
- (32) “**Water Utility**” is a person licensed under the **Act** to provide **Water Services**.

### Interpretation

In this Code, except where the contrary intention is expressed:

- (a) the singular includes the plural and vice versa;
  - (b) another grammatical form of a defined word or expression has a corresponding meaning;
  - (c) a reference to a document or instrument includes the document or instrument as novated, altered, supplemented or replaced from time to time;
  - (d) a reference to a person includes a natural person, partnership, body corporate, association, governmental or local authority or agency or other entity;
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- (e) a reference to a statute, ordinance, code or other law includes regulations and other instruments under it and consolidations, amendments, re-enactments or replacements of any of them;
- (f) the meaning of general words is not limited by specific examples introduced by **including, for example** or similar expressions; and
- (g) headings are for ease of reference only and do not affect interpretation.

## **SCHEDULE – CLASS 1, 2 AND 3 INFRASTRUCTURE**

- (1) “**Class 1 Infrastructure**” means large scale headwork assets required by a **Utility** in order to provide services to **Customers** including:
- a. for a **Water Utility**, works relating to provision of the following infrastructure:
    - i. dams, weirs and associated assets;
    - ii. raw water pumping stations, pipelines and associated assets (upstream of a treatment plant);
    - iii. water treatment plants;
    - iv. bulk supply mains that feed the first reservoir or pressure management infrastructure from the treatment plant (pump station or valve farm);
    - v. any other infrastructure the **Water Utility** deems to be headwork assets;
  - b. for a **Sewerage Utility**, works relating to provision of the following infrastructure:
    - i. gravity sewers that are 750mm diameter or greater and associated assets (including ventilation systems, etc);
    - ii. sewerage treatment plants and associated assets;
    - iii. treated effluent outfalls and associated assets; or
    - iv. any other infrastructure the **Sewerage Utility** deems to be headwork assets.
- (2) “**Class 2 Infrastructure**” means the shared assets that are not Class 1 Infrastructure or Class 3 Infrastructure and which are required by a **Utility** to provide services to one or more **Customers** in connection with one or more Developments, including:
- a. for a **Water Utility**, works relating to provision of the following infrastructure:
    - i. water mains downstream of Class 2 Infrastructure and greater than 200mm diameter and associated assets
    - ii. water reservoirs and pressure management systems;
    - iii. water pumping stations and associated assets that are deployed on Class 1 Infrastructure and Class 2 Infrastructure pipe assets or feeding from Class 3 Infrastructure to a water reservoir in another pressure zone;
    - iv. any other infrastructure the **Water Utility** deems to be shared assets;
  - b. for a **Sewerage Utility**, works relating to provision of the following infrastructure:
    - i. sewers that are between 300mm diameter and 750mm diameter and associated assets (including ventilation systems, etc);
    - ii. sewage pumping stations and associated assets;
    - iii. emergency storage and flow attenuation tanks and associated
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assets;

- iv. any other infrastructure the **Sewerage Utility** deems to be shared assets.

(3) "**Class 3 Infrastructure**" means the reticulation assets required by a **Water Utility** or a **Sewerage Utility** to connect a **Customer** to water and sewerage services including:

- a. for a **Water Utility**, works relating to provision of the following infrastructure:
  - i. water mains that are 200mm or less in diameter;
  - ii. water pumping stations and associated assets that do not meet the Class 2 Infrastructure definition;
  - iii. pressure reducing assets on the Water Utility's Class 3 Infrastructure;
  - iv. onsite assets including water tanks and associated assets; or
  - v. any other infrastructure the **Water Utility** deems to be reticulation assets; or
- b. for a **Sewerage Utility**, works relating to provision of the following infrastructure:
  - i. sewers that are less than 300mm in diameter;
  - ii. onsite assets including sewage storage capacity and internal sewage pumping stations; or
  - iii. any other infrastructure the **Sewerage Utility** deems to be reticulation assets.



# Water and sewerage capital contributions

Information paper (Attachment B)

Version 1.0, 30 March 2017

## Document management

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### Document summary

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## **About Icon Water**

Icon Water Limited (Icon Water) is an unlisted public company owned by the ACT Government. The company has two voting shareholders: the Chief Minister and Minister for the Environment and Heritage of the ACT.

Icon Water undertakes two primary activities: delivery of water, sewerage and associated services; and managing an investment in the energy business, ActewAGL.

- Icon Water delivers safe drinking water and reliable sewerage services to the ACT community and is a supplier of bulk water to Queanbeyan. Icon Water owns and operates the ACT's network of dams, water treatment plants, sewage treatment plants, reservoirs, water and sewage pumping stations, mains and other related infrastructure.
- Icon Water is a 50% owner of ActewAGL, a provider of electricity and gas services to the ACT and surrounding regional New South Wales centres.

Icon Water has two subsidiary companies: Icon Distribution Investments Limited (IDIL) and Icon Retail Investments Limited (IRIL).

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## Preface

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Icon Water protects and supports the community by providing high quality drinking water and sewerage services to the ACT and surrounding regions. We have been proudly performing this service for over 100 years.

Icon Water's network extends throughout Canberra; as our city grows our water and sewerage networks do the same. This urban intensification has traditionally been through the building of new 'greenfield' suburbs on our urban fringes.

Housing development in the ACT's new suburbs is being complemented by urban infill in already developed suburbs ('brownfields'). This expected increase in density will create pressure on existing water and sewerage infrastructure across the capital. In some areas this infrastructure is close to capacity.

The current infrastructure funding arrangements were intended for development consisting primarily of greenfield suburbs. These arrangements are no longer suitable with the shift in focus to urban renewal and brownfield developments.

It is vital that we establish long term servicing strategies and arrangements for the future to address the funding of water and sewerage infrastructure associated with the growth of Canberra. The proposed Water and Sewerage Capital Contributions Code outlined in this submission sets out to achieve this.

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## Executive summary

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### Overview

Icon Water proposes that a Water and Sewerage Capital Contribution scheme ('WSCC scheme') is introduced as an industry code under Part 4 of the *Utilities Act 2000* from 1 July 2017.

WSCC schemes are common across utility services in Australia and are also known as a 'developer contribution', or 'developer charge'. Most other water utilities, as well as electricity and gas utilities, have some form of scheme to help fund infrastructure upgrades, and introducing a scheme in the ACT would bring it into alignment with other jurisdictions.

The current ACT arrangements were established at the time of the introduction of self-government and were written with a focus on greenfield development. These arrangements see developers pay 100% of the cost of any augmentation required to service their development, regardless of the size of augmentation required.

While this is an accepted and appropriate approach for greenfield development areas, it is less suitable and can lead to problems when applied to brownfield development areas, including:

- sub-optimally sized assets
- 'last person standing' issues where a single developer incurs the full cost of augmentation with preceding developers incurring no cost, and subsequent developments benefiting at no cost
- uncertainty over the process causing development delays and protracted negotiations with Icon Water.

Icon Water considers that introducing a capital contributions scheme is the most effective way of:

- addressing the known issues in brownfield areas
- codifying practice for both greenfield and brownfield areas – even after considering the incremental burden of administering a scheme.

### Brownfield scheme

In creating a proposed scheme we have developed a set of principles which align with the objectives of the *Independent Competition and Regulatory Commission Act 1997* and the objects of the *Utilities Act 2000*. Icon Water's principles include sending a price signal, promoting equity, avoiding cross-subsidy, ensuring efficient infrastructure investment, ensuring timely development, simplicity and flexibility.

Based on these principles Icon Water proposes a brownfield scheme with the following characteristics:

- Icon Water continues to pay for and recover (through tariffs) costs associated with Class 1 headwork assets (refer to Ch. 8); Icon Water and developers make a 50:50 contribution to Class 2 shared assets (as an estimate of the uneconomic component, refer to Ch. 8); and developers continue to pay 100% of Class 3 reticulation assets.
- Charges are applied on a net Equivalent Population (EP) basis (refer Ch. 9) – which is an industry standard for determining water and sewer network capacity and the load impacts of new connections.
- Charges are categorised as miscellaneous charges under a price direction, and may be updated annually. They are based on forward looking 20 year capital expenditure, (reviewed by the ICRC for prudency and efficiency) population and employment projections.
- A single charge will be applied across all infill (or brownfield) areas of Canberra (refer Ch. 9), as shown in Figure ES1.

## **Greenfield scheme**

We are also seeking to codify existing arrangements for greenfield areas, however recognise that this submission provides a unique opportunity for a re-assessment of charging practices and principles in greenfield areas (refer to Ch. 11).

We have performed a detailed assessment of the most appropriate scheme to apply in our current environment, and based on our principles and a qualitative assessment of a number of options we propose a continuation of its existing practice:

- greenfield developers build and gift 100% of Class 2 and 3 assets to Icon Water
- an adjustment is made; that the definitions of Class 2 and 3 be aligned with the proposed brownfield code for operational simplicity.

## **Implementation**

We have carefully considered the approach to implementation and developed a comprehensive solution which builds on existing processes (refer to Ch. 10 and 13).

Icon Water proposes that income from developer charges be offset against gross capital expenditure in the regulatory pricing model. Income from developer charges would effectively be treated as negative values of capital expenditure for the purpose of calculating the opening value of the regulatory asset base (RAB) and the forecast values of the RAB over the regulatory period for which prices are being set.

In the current regulatory period, for which a price path has already been set, Icon Water proposes that no adjustment be made on account of the introduction of this capital contributions code. The effect of the code will be to increase Icon Water's net capital expenditure, since Icon Water will need to fund 50 per cent of Class 2 augmentation capital projects that had previously been excluded from net capital expenditure forecasts on the basis that the triggering developer would fund the works.

Icon Water will not seek any adjustment to account for this additional expenditure, since current forecasts indicate that total capital expenditure over the regulatory period will be below the level forecast in the Industry Panel's final decision.

A transition period is proposed for this brownfield charge – namely:

- developments that have exchanged contracts on properties prior to the 'go live' date will have a two-year 'opt-in' period to the scheme, based on the date of ACT Development Application lodgement.
- developments that have exchanged contracts on properties on or after the 'go live' date will fall under the new scheme.

Our proposed code is attached to this submission; we are seeking your approval of this proposal ahead of our proposed go-live date of 1 July 2017.

## **Stakeholder consultation**

Icon Water has performed stakeholder consultation on all aspects of the scheme. Our proposal has been adjusted to take feedback received into account, including transition and precinct design.

A copy of our stakeholder consultation report has been included with this submission. We have contacted parties that provided feedback and requested permission to share their submissions with you. Where permission has been obtained we have done so.

Figure ES1: Proposed brownfield charges

The total charge will be equal to the **Net increase in EP** multiplied by the **Precinct charge**.

### Net increase in EP

The net increase in EP can be calculated by multiplying (A) and (B) below for the units present for both the original and new developed form, and taking the difference.

Land use	Form	Units (A)	Multiplier (B)
<b>Residential</b>	Free standing houses	Dwellings	3.6
	Semi-detached row and terrace houses	Dwellings	2.5
	Apartments, units, and flats	Dwellings	2.0
<b>Commercial</b>	Shops and offices	Max. # of employees	0.3
	Public visitor or sporting buildings	Max. # of short-stay visitors	0.1
	Restaurants and clubs	Max. # of seats	0.1
	Tourist areas or hospitals	Max. # of beds	0.5
<b>Industrial</b>	Dry trades	Max. # of employees	0.3
	Wet trades	Assessed on a case by case basis	
<b>Institutional</b>	Schools and education	Max. students and staff	0.2

For example:

- An old free-standing house would be 1 (unit) x 3.6 (multiplier), creating 3.6 EP.
- Option 1: Replacing this house with a two-townhouse development would be 2 (units) x 2.5 (multiplier), creating 5 EP. Subtracting the original property leaves us with 1.4 net EP.
- Option 2: Replacing this house with a five shop development with 25 employees would be 25 (employees) x 0.3 (multiplier), creating 7.5 EP. Subtracting the original leaves us with 3.9 net EP.

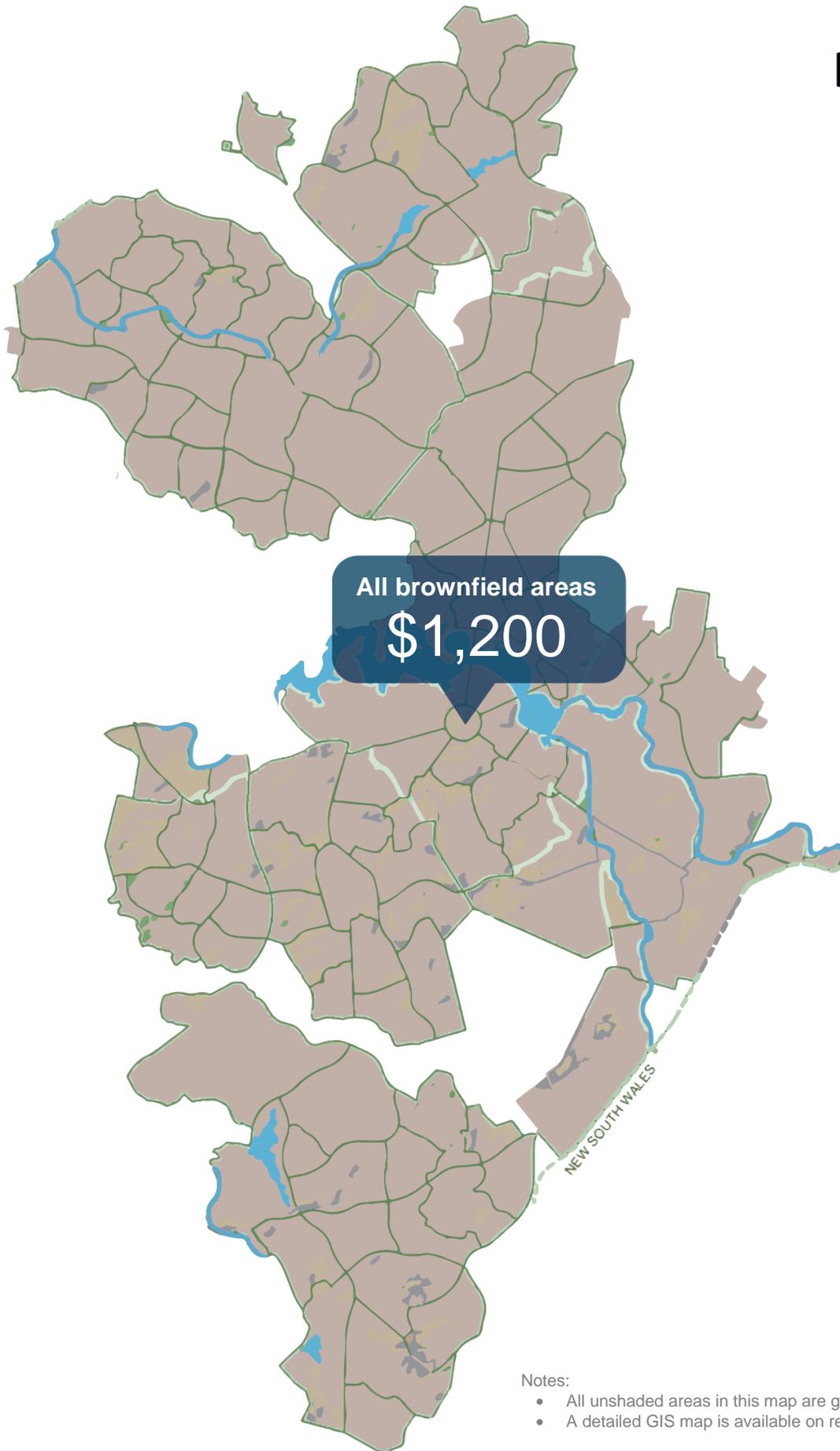
### Precinct charge

Once the net increase in EP is determined it is multiplied by the precinct \$ to determine a charge.

Precinct	Charge
 All brownfield areas	\$1,200

For example:

- A 4 net EP development would cost 4 (EP) x \$1,200 (precinct charge), costing \$4,800 in total. This charge would be levied ahead of connection.



Notes:

- All unshaded areas in this map are greenfield.
- A detailed GIS map is available on request.

# 1. Introduction

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This information paper provides a justification of Icon Water's proposal to introduce a Water and Sewerage Capital Contributions scheme ('WSCC scheme') in the ACT as an Industry Code ('code') under the *Utilities Act 2000*.

WSCC codes are common across utility services in Australia and are also known as a 'developer contribution', or 'developer charge' codes. Most other water utilities as well as electricity and gas utilities have some form of code.

This paper is to be read in conjunction with the draft code and provides the Independent Competition and Regulatory Commission ('ICRC') with an explanation of the key elements of the proposal.

## Document structure

This information paper is structured to methodically work through the process of examining and determining the most appropriate scheme to apply in our current operational environment. It draws this analysis together into a proposed code, and then documents implementation and administration considerations.

### Part 1: Overview of capital contribution charges

Chapter 2	What are capital contribution charges?
Chapter 3	Relevant guidance on capital contribution charges
Chapter 4	Current ACT funding arrangements
Chapter 5	Assessment framework
Chapter 6	How charge codes are applied in other jurisdictions
Chapter 7	Methodology for determining alternative options

### Part 2: Brownfield code analysis

Chapter 8	Brownfield: The costs to be recovered from developers
Chapter 9	Brownfield: How the costs are recovered from developers
Chapter 10	Brownfield: How the charges are introduced and administered

### Part 3: Greenfield analysis

Chapter 11	Greenfield: The costs to be recovered from developers
Chapter 12	Greenfield: How the costs are recovered from developers
Chapter 13	Greenfield: How the charges are introduced and administered

### Part 4: Proposed capital contributions code

Chapter 14	Proposed code
Chapter 15	Indicative charges
Chapter 16	Analysis of code costs
Chapter 17	Stakeholder consultation

## Applicability

The *Utilities Act 2000*<sup>1</sup> includes provision for a charge under Section 101 as follows:

### **Capital contribution charges—network development**

- (1) A utility may impose a charge (a capital contribution charge) payable by customers for the development or augmentation of its network for the following purposes:
  - (a) making utility services available to parcels of land not already connected to a network;
  - (b) varying the capacity of connections to its network.
- (2) A capital contribution charge must be in accordance with the relevant industry code.

Such a code may be proposed by Icon Water, and with the approval of the ICRC introduced into operations.

Icon Water proposes that a WSCC scheme be introduced as an industry code under Part 4 of the *Utilities Act 2000* from 1 July 2017, with the proposed transition arrangements documented in this paper.

# Part 1: Overview of capital contribution charges

## 2. What are capital contribution charges?

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### What are infrastructure charges?

The Productivity Commission defines infrastructure charges as follows:

#### **Report into Australia's urban water sector**

[Developer charges are]

*up-front charges that water utilities levy on developers for the infrastructure costs of providing or upgrading water supply, sewerage and drainage facilities for new developments<sup>2</sup>*

Infrastructure charges allow utilities to recoup a proportion of the cost of investment in water and sewerage networks while sending an immediate price signal to developers (with respect to their impact on those costs). It is anticipated that these charges are then passed onto the beneficiaries of development performed.

Capital contribution schemes are generally based on a pro-rata or 'per connection' charge to cover the cost of required augmentation work to service a development. The charge is normally calculated by considering expected future infrastructure requirements driven by expected demand growth and calculating a net present value per standard connection.

These schemes are normally implemented by the jurisdictional regulator through a regulatory code and/or approval of a utility's charge schedule. The general arguments in support of such schemes include the provision of price signals to developers – and ultimately land users – about the true economic cost of servicing land in different areas, leading to an economically optimal balance between capital expenditure (capex) and development.

### 3. Relevant guidance on capital contribution charges

A substantial body of literature and analysis exists on developer charges in Australia, whether from Commonwealth agencies or State-based regulatory bodies across multiple market sectors. A summary of key guidance is as follows.

#### National Water Commission

##### National Water Initiative ('NWI') pricing principles (2010)

Before the National Water Commission's abolition the NWI was agreed by the Council of Australian Governments as the national blueprint for water reform. Under this State Governments made commitments to best practice water pricing to achieve economically optimal outcomes.

The NWI Pricing Principles include a specific allowance for capital contributions schemes (or 'developer charges' where it states with reference to the principles for urban water tariffs that<sup>3</sup>:

*Water charges may also include up-front developer charges – to signal the infrastructure cost of servicing new developments or additions/changes to existing developments.*

Principles 7, 8, 9 and 10 of the NWI Pricing Principles also specifically mention capital contribution codes as follows<sup>4</sup>:

 <p><b>NWI Pricing Principles</b></p> <p><b>P7: Differential water charges</b></p> <p>Water charges should be differentiated by the cost of servicing different customers (for example, on the basis of location and service standards) where there are benefits in doing so and where it can be shown that these benefits outweigh the costs of identifying differences and the equity advantages of alternatives<sup>5</sup>.</p>	<p><b>P8: Setting developer charges</b></p> <p>Developer charges should reflect the investment in both new and existing assets required to serve a new development<sup>6</sup> and have regard to the manner in which ongoing water usage and service availability charges are set</p> <p><b>P9: Capping developer charges</b></p> <p>Developer charges should not exceed the costs of serving new developments which includes investment in both new and existing assets required to serve a new development.</p> <p><b>P10: Revenue from developer charges</b></p> <p>To avoid over-recovery, revenue from developer charges should be offset against the total revenue requirement either by excluding or deducting the contributed assets from the RAB or by offsetting the revenue recovered using other mechanisms.</p>
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## Productivity Commission

### Inquiry Report into Australia's Urban Water Sector (2011) and First Home Ownership (2004)

The Productivity Commission's report provided some high-level guidance on the design and implementation of developer charging regimes in urban water environments, and stated that:

*“Developer charges can enhance efficiency by conveying location-based, differential price signals for infrastructure...encouraging efficient decisions on the location, nature and timing of development...”.*

It also provided several recommendations regarding the use and application of developer charges:

#### *Australia's Urban Water Sector, Recommendation 6.1*

*Upfront developer charges should be used where the incremental costs of development are well established and benefits accrue mainly to those in the development.*

*Where, as in the case of urban infill, the benefits also accrue to incumbents, costs should be spread across all users through rates, taxes or the fixed part of a two-part tariff for water and wastewater [sewerage] services.*

*Developers should be given the option of building the required infrastructure themselves where appropriate, subject to predetermined standards.*

In addition to the key recommendations in #6.1 (above) Icon Water has produced a summary of the reports' findings:

- Investments in terms of social or economic infrastructure that provide benefits in common across the wider community should desirably be funded out of borrowings and serviced through rates, taxes, or usage charges.



**Inquiry into first home ownership**

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**Up-front charges**

Upfront charges should be used to finance major shared infrastructure, such as trunk infrastructure, for new developments where the incremental costs associated with each development can be well established and where such increments are likely to vary across developments.

**Funding sources**

Infill development where system-wide components need upgrading or augmentation that provide comparable benefits to incumbents should be funded out of borrowings and recovered through rates or taxes (or the fixed element in periodic utility charges).



**Australia's Urban Water Sector**

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**As discussed in PC 2011**

The latter point provides an alternative to imposing developer charges. Developers could build the required infrastructure according to standards set by the utility.

The developer could then retain ownership of the infrastructure and operate it, or transfer it to the utility once the development has been completed.

Giving developers the option to build the infrastructure themselves might have advantages associated with encouraging innovation and improving dynamic efficiency, as developers seek ways of minimising the cost of production and paying

- Developer charges should be efficient and justified on a whole-of-life cost basis and consistent with maintaining financial disciplines on service providers by precluding over-recovery of costs.
- Developer charges should be equitable, with a clear nexus between benefits and costs, and only implemented after industry and public input.
- Developer charges should relate specifically to the directly attributable costs being incurred at that location, and not the sunk costs of common shared infrastructure.
- Developer charges should be itemised by service type (such as water, sewerage, or drainage) and infrastructure type (such as transmission or distribution system).

## **Essential Services Commission**

The Essential Services Commission ('ESC') undertook a 'new customer contributions' review in 2012, and in its guidance paper documented the following principles:

- Contributions must have regard to the incremental infrastructure and associated costs in one or more of the statutory cost categories attributable to a given connection.
- Contributions must have regard to the incremental future revenues that will be earned from customers at that connection.
- Contributions must be greater than the avoidable cost of that connection and greater than the standalone cost of that connection.

## **Australian Energy Regulator / National Gas Rules**

The Australian Energy Regulator has also issued guidance on how to determine developer charges; however most relates to the specific calculation of charges payable on individual connections. This literature is cited later in this paper when providing an overview of the cost-revenue test (see Ch. 9 and Appendix H).

## **Implications of existing guidance**

Broadly, the literature present suggests that developer charges should:

- Send an economic price signal to developers about the true cost of their development
- Ensure that beneficiaries of infrastructure contribute appropriately, and that cross-subsidisation between user classes is minimised
- Promote efficient investment behaviours, minimising total costs for all customers; and
- Ensure that the total economic benefits delivered by the charge are not outweighed by the economic costs of its implementation and operation.

Additionally any proposed scheme should satisfy a basic economic cost-benefit test from the perspective of the ACT community.

Icon Water considers that these broad implications should form the basis of internal considerations on appropriate schemes. Following internal stakeholder consultation we have developed a set of seven 'principles' (refer Ch. 5) that draw on these, and which provide a framework for assessment of scheme options going forward.

## 4. Current ACT funding arrangements

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### The '1989 Arrangement'

In contrast to water, electricity, and gas networks in other jurisdictions Icon Water does not have a formalised capital contribution code.

The '1989 Arrangement' is the existing mechanism for the funding of water and sewerage infrastructure across the ACT. This was developed at the time of the introduction of self-government for the ACT.

The current arrangement has mainly applied to greenfield developments (new suburbs on the urban fringe, generally requiring the construction of new infrastructure for water and sewerage service) to date. This has proven adequate in dealing with the large lot-by-lot approach to development where the drivers of augmentation requirements are obvious (e.g. the infrastructure required to service an entire suburb).

This arrangement has operated effectively for greenfield developments, and is widely understood and accepted by Canberra developers and stakeholders.

However, as brownfield development levels increase the current arrangements are less suitable. Under these all infrastructure augmentations triggered by brownfield development activities are 100% payable by the developer.

#### **Case study: The current arrangement in a brownfield context**

- A developer approached Icon Water seeking connection to the sewer network to service a proposed brownfield development
- The sewer network where the proposed development was located was at capacity and as such the development could not proceed without an augmentation
- The development was located in an area expecting future growth
- Based on a negotiated outcome the augmentation was designed only to cater for the incremental demand resulting from the developer's site
- The developer paid for the full cost of this augmentation
- Any future development in this area will trigger further augmentation requirements (an inefficient outcome)
- The process was protracted and delayed the development

## Comparison of development characteristics

These issues have partially arisen out of the design of the existing arrangements, as well as the underlying characteristics of greenfield versus brownfield development in the ACT. Table 4.1 below provides a summary of their key differences.

Table 4.1: Summary of key differences in greenfield versus brownfield developments

Item	Greenfield	Brownfield
<b>Size of development</b>	A single developer will generally build an entire suburb or development stage	Multiple developers will develop projects of varying sizes in an ad-hoc fashion
<b>Forecasting</b>	<p>General land planning guides exist for a 5-10 year window; however detailed plans for infrastructure to be built do not exist beyond a 12-18 month window.</p> <p>Icon Water generally does not know the full cost and extent of gifted assets received until asset acceptance procedures are performed.</p> <p>Final estate details have similar timing horizons.</p>	Comparatively superior urban infill forecasts exist for residential and commercial growth for a 20 year window. These are generally available once per year.
<b>Required infrastructure</b>	Generally a stand-alone network, connected to Icon Water's trunk infrastructure.	Tailored augmentation of varying network stages across brownfield catchments.
<b>Developer</b>	<p>In recent times, the ACT Government (via the Land Development Agency) or a joint-venture or arrangement involving the LDA.</p> <p>Some very occasional examples of Federal Government land development exist.</p>	All ACT developers.

It is important that these differences be considered as a contributing factor to current scheme design and issues.

## Issues with the current arrangement for brownfield developments

The ACT Government has a policy of having 50% of new dwellings constructed in brownfield areas (with the remainder as greenfield development which typically occurs on the urban fringe). These brownfield developments will place pressure on existing infrastructure across Canberra and trigger the need for augmentation of existing water and sewerage infrastructure as capacity of the existing network will be reached.

For example, government decisions on the light rail project have already prompted (and will continue to prompt) brownfield development along Northbourne Avenue. Icon Water estimates that approximately \$250m of brownfield infrastructure augmentations will be triggered over the coming 20 years (please note this is all classes of infrastructure).

Under the current arrangements, a single developer may be faced with funding the full cost of a brownfield augmentation, with no contribution from the preceding developments that used up the available network capacity.

In cases where Icon Water negotiates an augmentation sizing that accounts for future growth, no contributions are obtained from subsequent developments that utilise the excess capacity. This is sometimes referred to as the 'last person standing' issue.

These and other issues are summarised in Table 4.2.

Table 4.2: Summary of issues with current arrangement

#	Issue	Description
I1	<b>Sub-optimally sized capacity increments</b>	<p>The current arrangements may not lead to optimally-sized capacity increments as developers that trigger an augmentation are likely to size the infrastructure at the minimum necessary to serve only their development. The next developer in that area would need to fund another capacity augmentation. Icon Water limited ability to influence the size of the augmentation constructed beyond a minimum standard.</p> <p>A more holistic approach to planning would size augmentations to cater for relevant future growth, resulting in fewer (but larger) augmentations and reducing overall costs.</p>
I2	<b>'Last person standing'</b>	<p>The current arrangements may be considered unfair, since costs are borne by the developer that triggers augmentation and preceding developments benefit from utilising excess capacity without contributing to the cost of the augmentation.</p> <p>By charging 100% of the capital cost, without accounting for the ongoing network charges that new customers would expect to pay, some developments that are valued above cost may not proceed.</p>
I3	<b>Uncertainty</b>	<p>Current greenfield practices, while understood and accepted by industry are not clearly documented. New developers or circumstances are likely to generate ambiguity.</p> <p>The current arrangements are untested in a brownfield environment and are likely to result in protracted discussions between Icon Water and developers.</p> <p>Both of these issues are likely to incur material administration costs and drive inefficiencies in operation – it is commercially preferable for a more definitive code to be in existence.</p>

## **General issues with the current arrangement**

In addition to the issues noted above Icon Water does not believe that the current code provides the development community with clarity over development costs:

- Greenfield development contribution arrangements are known because of extensive corporate history between developers and Icon Water rather than published guidelines.
- As outlined on the previous page, developers do not know their total contribution until virtually commencing construction, contributing to overall uncertainty on projects.

## **Proposed action**

Icon Water considers the introduction of a capital contributions scheme to be the most effective way of addressing these issues – in particular:

- The noted brownfield issues are better addressed through the adoption of a new cost-allocation and charging regime for infrastructure augmentations.
- The establishment of formal documentation for greenfield and brownfield charging practices (through an Industry Code) will significantly improve clarity and certainty for developers.

While Icon Water does not currently have any issue with the design or operation of its greenfield arrangements, a review of appropriateness will be performed alongside the brownfield assessment, to ensure that we have optimal scheme design for all scenarios.

## 5. Assessment framework

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### Icon Water principles

Icon Water's overarching objective when considering funding model options is to maximise the overall benefit to the ACT community. To achieve this objective Icon Water has created a set of seven key principles, which are reflective of the key desired outcomes and the key findings from the literature review (in Ch. 3).

These principles are similar to the ICRC's objectives under the *ICRC Act 1997* and *Utilities Act 2000*. Table 5.1 sets out these principles.

It is our intention to use these principles as the key assessment criteria for possible brownfield and greenfield scheme analysis; this will be supported by further economic and monetary analysis as required.

Table 5.1: Icon Water's infrastructure funding principles

#	Principle	Description
P1	<b>Sends efficient price signal</b>	Sends an economic price signal to developers about the true cost of their development
P2	<b>Equitable</b>	New users of infrastructure pay for a reasonable share of development costs
P3	<b>Avoids cross-subsidisation</b>	Minimises instances of other water and sewerage customers paying for the cost of other user classes' infrastructure
P4	<b>Efficient infrastructure investment</b>	Planning and construction is undertaken holistically so that lowest whole-of-lifecycle costs are preferred
P5	<b>Sustainable</b>	Development can continue on an ongoing basis and will not stop or be delayed due negotiations or disputes regarding new infrastructure
P6	<b>Simple</b>	Easy to administer and minimises total costs of operation
P7	<b>Flexible</b>	Provides for some flexibility in changes in the timing and sequence of developments

## Alignment of principles

The following section illustrates that these principles are consistent with the guiding objectives of economic regulation in the ACT, and can be reliably used as a yard-stick for determining optimal scheme selection.

### ICRC Act 1997 requirements

There is alignment between the requirements of the *ICRC Act 1997* and the principles developed by Icon Water; Table 5.2 illustrates their consistency. Complete extracts of the source documentation are included at **Appendix B**.

Table 5.2: Alignment of ICRC and Icon Water principles

<b>ICRC Act 1997 objectives</b>	<b>Icon Water Principles</b>
<b>(a) to promote effective competition in the interests of consumers</b>	P2. Equitable P3. Avoids cross-subsidisation P5. Sustainable
<b>(b) to facilitate an appropriate balance between efficiency and environmental and social considerations</b>	P1. Sends an efficient price signal P2. Equitable P4. Efficient infrastructure investment
<b>(c) to ensure non-discriminatory access to monopoly and near monopoly infrastructure</b>	P2. Equitable P4. Efficient infrastructure investment P5. Sustainable

### Utilities Act 2000 requirements

There is alignment between the requirements of the *Utilities Act 2000* and the principles developed by Icon Water; Table 5.3 illustrates their consistency.

Table 5.3: Alignment of *Utilities Act 2000* and Icon Water principles for brownfield

<b>Utilities Act 2000 objects</b>	<b>Icon Water Principles</b>
<p><b>(c) to promote competition in the provision of utility services</b>  <b>(f) to protect the interests of consumers</b></p>	<p>P2. Equitable  P3. Avoids cross-subsidisation  P5. Sustainable</p>
<p><b>(a) to encourage the provision of safe, reliable, efficient and high quality utility services at reasonable prices</b>  <b>(e) to promote ecologically sustainable development in the provision of utility services</b>  <b>(d) to encourage long-term investment, growth and employment in utility service industries</b></p>	<p>P1. Sends an efficient price signal  P2. Equitable  P4. Efficient infrastructure investment</p>
<p><b>(b) to minimise the potential for misuse of monopoly power in the provision of utility services</b>  <b>(g) to ensure that advice given to ICRC by the ACAT [ACT Civil and Administrative Tribunal] is properly considered</b>  <b>(h) to ensure the Government’s programs about the provision of utility services are properly addressed</b>  <b>(i) to give effect to directions of the Minister under section 19.</b></p>	<p>P2. Equitable  P4. Efficient infrastructure investment  P5. Sustainable</p>

We note that Principle 6 (Simple) and Principle 7 (Flexible) are not directly addressed in the reconciliations above. Icon Water considers that these two principles consider the overall administrative burden and flexibility of the scheme; their inclusion is important to ensure that the benefits of any scheme outweigh their costs of administration.

#### ICRC pricing principles

Additionally, while not directly applicable to this discussion paper the ICRC’s objective and pricing principles set within the ICRC’s report on the Tariff Review (2016) similarly have broad alignment – these demonstrate that Icon Water’s seven principles are at least consistent with contemporary approaches to pricing.

#### Additional ICRC objectives

In June 2016 the *Independent Competition and Regulatory Commission Amendment Bill 2016* was passed by the legislative assembly; amongst the key changes was the addition of a new objective:

*The objective of the Commission, when making a price direction in a regulated industry, is to promote the efficient investment in, and efficient operation and use of regulated services for the long term interests of consumers in relation to the price, quality, safety, reliability and security of the service.*

This overarching principle is written in the same spirit as principles P2, P3, P4, and P5. Icon Water is confident that our proposed criteria are consistent with this new objective of the ICRC.

## Consideration of the 1989 agreement against the principles

To assess how well our principles identify issues with our current brownfield arrangements we must perform an assessment; an adverse outcome shows that the issues identified in its operation (in Ch. 4) have been correctly mapped into our criteria.

An assessment of the current arrangements against our principles is shown below in Table 5.4.

Table 5.4 – Mapping of 1989 Arrangement issues to principles

Principle		Satisfied under current arrangements?
P1	<b>Sends efficient price signal</b>	<b>No</b> – when no upgrade is triggered a price signal is not sent – failed through the ‘last person standing’ issue.
P2	<b>Equitable</b>	<b>No</b> – failed through the ‘last person standing’ issue.
P3	<b>Avoids cross-subsidisation</b>	<b>No</b> – failed through the ‘last person standing’ issue.
P4	<b>Efficient infrastructure investment</b>	<b>No</b> – failed through sub-optimally sized capacity increments.
P5	<b>Sustainable</b>	<b>No</b> – failed through the ‘uncertainty’ issue.
P6	<b>Simple</b>	<b>No</b> – negotiations are often protracted and difficult for all parties.
P7	<b>Flexible</b>	Yes

The current arrangements do not satisfy six of the seven listed principles. It is therefore reasonable to conclude that the current arrangements are not optimal to achieve our desired outcomes.

## 6. How charge codes are applied in other jurisdictions

### Overview

Capital contribution schemes apply in other Australian jurisdictions and across other utility services (for example electricity and gas networks). The introduction of a charging regime for new dwellings connecting to the water and sewerage network will bring the ACT into line with these other jurisdictions.

### Water sector examples

Table 6.1 provides a summary of some of the water and sewerage schemes across Australia, which have been considered as part of our research into possible code options.

Table 6.1: Summary of water arrangements

Regulator	Utility	Code mechanism	Key characteristics
<b>Queensland Competition Authority</b>	Queensland Urban Utilities	QUU Water Netserv Plan <sup>7</sup>	100% of trunk and augmentation infrastructure
	Gold Coast Water	GCW Water Netserv Plan <sup>8</sup>	Forward looking cost estimates Differing charges by location
	Unitywater	Unitywater Water Netserv Plan <sup>9</sup>	Charges vary by dwelling size and activity
<b>Independent Pricing and Regulatory Tribunal</b>	Sydney Water	Growth Servicing Plan determines if a contribution is required. If outside this area Precinct Acceleration Protocol (PAP) is followed.  Separate treatment for small reticulation pipes.	100% of trunk and augmentation infrastructure  Forward looking cost estimates Differing charges by location  No schedule of charges
	Hunter Water	Land Development Manual. Development Assessment Process  Hunter Water's 'Cost Sharing Arrangements Where the Asset Is Greater than Minimum Size for a Single Development Policy'	100% of trunk and augmentation infrastructure  Forward looking cost estimates Differing charges by location  No schedule of charges
	Gosford City Council	Development Servicing Plans <sup>10</sup>	100% of trunk and augmentation infrastructure  Forward looking cost estimates Differing charges by location  Charges vary by dwelling size and activity

Regulator	Utility	Code mechanism	Key characteristics
<b>Essential Services Commission ('ESC') of Victoria</b>	City West Water	Land Development Manual - New Customer Contribution charge as outlined in City West Water's Negotiating Framework <sup>11</sup>	100% of trunk and augmentation infrastructure Forward looking cost estimates over varying time periods. Differing charges by location Charges vary by dwelling size and activity
	Yarra Valley Water	Yarra Valley Land Development Manual - New Customer Contribution <sup>12</sup>	100% of trunk and augmentation infrastructure Forward looking cost estimates over varying time periods. Differing charges by location Charges vary by dwelling size and activity
	Western Water	Western Water New Customer Contributions <sup>13</sup>	100% of trunk and augmentation infrastructure Forward looking cost estimates over varying time periods. Differing charges by location Charges vary by connection size
<b>ESC of South Australia</b>	SA Water	Developer Contribution Framework <sup>14</sup>	100% of trunk and augmentation infrastructure Forward looking cost estimates Differing charges by location Charges vary by connection size
<b>Economic Regulation Authority</b>	Water Corporation	Developers Manual <sup>15</sup>	100% of trunk and augmentation infrastructure Forward looking cost estimates Differing charges by location Charges vary by dwelling size and activity

Several inferences can be drawn from this table:

- All other jurisdictions have a code that is used to recover costs.
- There is no consistent application of charges to greenfield or brownfield circumstances, nor application to network classes (as illustrated by trunk and reticulation infrastructure being included); this indicates that the type of infrastructure costs recovered will depend on the circumstances surrounding each charge.
- A number of charges vary by the size or type of dwelling; it will be necessary to consider whether any new charge can accommodate this flexibility.
- Charges appear to be differentiated by geographic location.

### Other utility sector examples

Other utility networks have capital contribution schemes. For example, in the ACT, ActewAGL Distribution is subject to the following relevant requirements across its electricity and gas networks.

- **Electricity:** Part E of the National Electricity Law (NEL) relates to 'connection charges' that allow for real estate developers to pay a 'reasonable capital contribution' toward the cost of augmenting the network to service a development's demand<sup>16</sup>
- **Gas:** Part 12A of the National Gas Law (NGL) relates to gas connections for retail customers with Division 4 specifically setting out the arrangements for connection charges. Section 119M includes the connection charge criteria which allow a connection charge to be imposed for the shortfall between the incremental revenue to be obtained from a connection and the required capital expenditure, in net present value terms.

The theoretical basis for these charges is similar to the literature discussion presented in Chapter 3.

Appendix A includes a more detailed summary of the models adopted by peer utilities.

## 7. Methodology for determining alternative options

### Hierarchy of questions

Chapter 6 demonstrates that there is no 'one size fits all' model which has been adopted across jurisdictions (or type of utility service). Rather, a model should be adopted based on the specific circumstances of the utility and local land planning arrangements.

The key characteristics of the schemes in other jurisdictions highlight a hierarchy of issues to be considered in developing an arrangement for the ACT. The hierarchy is based on the following elements:

- What costs are recovered from developers by a scheme?
- How are these costs recovered from developers over time?
- How are the charges introduced and administered over time?

This sequence is illustrated in Figure 6.1 and adopted over the following chapters as the framework for developing a capital contribution code for the ACT.

Figure 6.1: Hierarchy of decisions

High level issue	Detailed considerations	Brownfield discussion	Greenfield discussion
<b>What costs are recovered from developers?</b>	<ul style="list-style-type: none"> <li>• Which assets are included?</li> <li>• How are costs determined (e.g. are forward looking or historical costs considered)?</li> </ul>	Chapter 8	Chapter 11
<b>How are these costs recovered from developers?</b>	<ul style="list-style-type: none"> <li>• Do charges differ by location?</li> <li>• Are all costs recovered?</li> <li>• What is the basis of charging?</li> </ul>	Chapter 9	Chapter 12
<b>How are the charges introduced and adjusted over time?</b>	<ul style="list-style-type: none"> <li>• How are the charges introduced?</li> <li>• What is the timing of collections and how does Icon Water stay whole over time?</li> <li>• How do charges adjust annually?</li> <li>• What is the regulated pricing and accounting treatments for these charges?</li> </ul>	Chapter 10	Chapter 13

Parts 2 and 3 of this paper walk through these issues to determine the most appropriate overall outcome for the ACT.

### Documentation of outcomes

In the following two parts (Brownfield and Greenfield) each question will be sequentially analysed. Following each the cumulative outcomes will be documented in a blue text box for clarity.

Where stakeholder feedback has been taken into account this has been documented in orange text boxes for clarity.

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# Part 2: Brownfield code analysis

## 8. Brownfield: Costs to be recovered from developers

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The cost to be recovered from developers requires consideration of combinations of:

- The scenario in which Icon Water is seeking to recover costs
- The assets to be included in the charge regime
- How the costs are determined.

Some of these questions are relatively straight forward and can be quickly answered; others, such as the determination of costs, require more detailed analysis to arrive at a justifiable outcome.

We note that only future costs are able to be recovered; it is not possible or desirable to retrospectively change funding practices on stakeholders.

### **The scenario in which Icon Water is seeking to recover costs**

As noted in Chapter 4, current and future brownfield developments will place pressure on existing infrastructure across Canberra and trigger the need for the augmentation of existing water and sewerage infrastructure. The funding of these upgrades has resulted in the three issues; sub-optimally-sized increments, last person standing, and uncertainty (hence our principles).

#### **Icon Water proposed approach**

Icon Water therefore proposes that the Code:

- establish a charge for brownfield applications.

## The assets to be included in the charging regime

Figure 8.1 provides a conceptual overview of the various components of the Icon Water network. Following detailed analysis of Icon Water’s asset base and capital plans – in particular those impacted by brownfield-driven network augmentation – we determined that our network can be split into three ‘classes’:

- Class 1: Headwork assets (such as dams and water treatment plants)
- Class 2: Shared assets (such as reservoirs or large pipes)
- Class 3: Reticulation assets (such as smaller suburban pipes)

Figure 8.1: Overview of infrastructure ‘classes’



These classes apply across both our water and sewerage network. Detailed definitions of which assets are classified as either Class 1, 2 or 3 can be found in **Appendix C**.

Importantly each of these classes (in a brownfield context) carries its own unique funding characteristics. These are outlined in Table 8.1 below.

Table 8.1: Current funding arrangements for brownfield network augmentations

Class 1 Headwork assets	Class 2 Shared assets	Class 3 Reticulation
Paid for by Icon Water and recovered from all water and sewerage customers	Paid for by the developer who triggers the need for the augmentation  If there is no need for augmentation then the developer does not pay a charge	Paid for by the developer

To enable analysis of the most appropriate future charging state Icon Water performed a ground-up review of its growth capex plans over a 20-year horizon.

This plan (*'Brownfield growth capex plan, November 2016'*, submitted as part of our financial modelling, see **Appendix F**) has formed the basis of our work, and has identified that the majority of Icon Water's growth capex will occur in our sewerage system, and in Class 1 and 2 assets.

We note that the boundary between Class 1 and 2 is now defined differently to the equivalent section in the 1989 Arrangements – this is due to the progression of new technology and approaches to water and sewerage management. This boundary helps to minimise any cross subsidisation and inequitable outcomes by mixing different asset characteristics.

Noting this Icon Water considers that the charge should apply only to the capex cost of Class 2 shared assets. This is driven by the fact that the identified uncertainties of the current arrangement relate to the treatment of Class 2 assets – especially in brownfield areas, and the prominence of Class 2 works in the ground-up 20 year growth capex plan. These weaknesses were identified in Chapter 4 and include:

- 'Last person standing' issues
- Development of sub-optimally sized capacity increments
- Uncertainty

In considering whether a charge should be applied to Class 1 assets, Icon Water does not consider the inclusion of these assets results in a significant overall benefit to the community (to offset the administrative complexity). The majority of Class 1 infrastructure works relate by definition to upgrading broad-based assets servicing the general population; it is therefore difficult to isolate those costs related to 'new' customers.

Similarly, Icon Water can see little benefit in altering the current arrangements for Class 3 assets. The current approach is consistent with other jurisdictions, is well understood and accepted by industry. Additionally the direct beneficiary of these works is the developer.

### **Icon Water proposed approach**

Icon Water proposes that the Code:

- establish a charge for brownfield applications that applies to Class 2 assets only; and
- codify but not alter existing brownfield Class 1 and 3 practices for the purposes of clarity.

## How the charges are determined

When considering a charge to recover specific costs there are competing approaches to determine which costs are reflected in charges. For example:

- Costs can be based on forecasts of future costs or actual historical costs.
- If future costs are used then a forecast period must be adopted.
- If historical costs are adopted then a time period must be selected for the averaging of these costs. If this time period relates to the recovery of actual costs incurred than it is considered to effectively be zero.

These options have an impact on any price signal communicated however have their pros and cons; Table 8.2 outlines some of the trade-offs of these approaches.

Table 8.2 – Trade-offs in determining costs for recovery

Issue	Trade-off ...	... against
<b>Basis for charging</b> <i>Whether historical or planned future capex should be used for cost determination</i>	<b>Backward looking prices</b> High reliability of historical data as an information source however relevance to potentially unrelated future expenditure questionable.	<b>Forward looking prices</b> Specifically relates to infrastructure expenditure in question, however some degree of judgment always present in forecasts.
<b>Forecasting or review period for capex</b> <i>The forward period for capital expenditure</i>	<b>Short period</b> Greater accuracy of costs but increased 'lumpiness' of charge values.	<b>Long period</b> Less accuracy but smooth charge patterns reducing 'cost shock' for customers.

Based on the trade-offs identified above, and the generally reliable nature of forecast data present in brownfield development (see Ch. 4) Icon Water considers the approach which will guard against significant year-to-year variation in pricing is to adopt a forward looking approach to cost estimates with a period of 20 years. Such an approach will ensure that charges are as cost-reflective as possible and align with the long term asset planning processes within Icon Water.

A 20-year forecasting horizon is reasonable when compared to the wider water industry; in Victoria the ESC allows for a variety of forecasting horizons for capital contribution codes including 10, 20 and 30 years. While this length is longer than the standard regulatory submission forecast Icon Water believes that it adequately allows for the equal attribution of often 'lumpy' Class 2 upgrades across those developments that will utilise their capacity. This is relevant given the diverse nature of developers and their developments within the ACT.

### Icon Water proposed approach

Icon Water proposes that the Code:

- establish a charge for brownfield applications that applies to Class 2 assets only, with costs being based on a 20-year forward looking capex cost estimate (reviewed by the ICRC for prudence and efficiency);
- codify but not alter existing brownfield Class 1 and 3 practices for the purposes of clarity.

## 9. Brownfield: How costs are recovered from developers

The previous chapter identified the pool of costs to be recovered (i.e. 20 year forecast of Class 2 costs in brownfield augmentations) in our proposed charge. In this chapter different methods for the recovery of these costs are assessed against the principles and an economic cost/benefit framework.

It is our view that the ‘how to recover’ question can be answered in three parts:

- What proportion of costs (in this case Class 2 costs) should be recovered from developers?
- Should the ACT be broken up into geographic areas (precincts), each featuring different charges, or should a single charge be applied?
- Should the charge be scaled to take the impact of a development into account, and if so how should this be determined?

For ease of analysis questions 1 and 2 are considered together. This is followed by consideration of the approach to scaling and calculating charges.

### Proportion of Class 2 costs and charging areas

#### Proportion of costs paid

There are three key options available when considering the proportion of Class 2 costs which could be recovered from developers. Table 9.1 outlines these options:

Table 9.1: Proportion of Class 2 cost recovery options

% of costs paid by developers	Description
<b>Nil (0%)</b>	Water and sewerage customers are charged for all applicable infrastructure upgrades through network charges. All customers pay for growth infrastructure.
<b>Uneconomic component</b>	<p>The uneconomic component is the deficit (in net present value terms) of the costs of augmentation over the expected future water and sewerage revenue from growth.</p> <p>For Icon Water’s networks, capital plans and population forecasts, the uneconomic component would see approximately 50% of capex recovered from developers.</p> <p>Please refer to <b>Appendix H</b> for further detail and analysis.</p>
<b>All (100%)</b>	All infrastructure augmentation capital costs are paid by developers. Existing customers may benefit from reduced network charges over time.

## Charging areas

As with the proportion of Class 2 costs to be recovered, there are numerous options that can be applied to the size of the geographic charging areas. These range from a case-by-case approach which looks at the specific area impacted by a network augmentation through to determining a single price which applies across the whole of the ACT.

There is a trade-off regarding the size of the geographic areas, otherwise known as precincts, with smaller precincts sending more accurate price signals but incurring higher administrative costs and larger precincts being easier to administer but losing the locational relationship to cost.

Administrative costs include the ongoing employee cost of assessing and managing a scheme, as well as the cost of system alterations (or the cost of new systems if needed), and specialists or professionals to validate or perform non-core work.

It is therefore important to appropriately size precincts to ensure accuracy of price signals and a 'fair' distribution of costs, or at least minimise overall administrative costs while delivering an effective scheme.

Table 9.2 outlines various approaches to precinct design ranging from 'infinite' precincts (i.e. assessed on a case-by-case basis), several precincts or a single ACT-wide precinct.

Table 9.2: Approaches to precinct design

<b>Granularity</b>	<b>Description</b>	<b>Pros</b>	<b>Cons</b>
<b>Infinite precincts (Case-by-case)</b>	Case-by-case consideration of all developments and their infrastructure augmentations.	100% accurate price signal means developers would prefer locations with excess capacity.	Very high administrative complexity and cost.
<b>Several 'precincts' covering the ACT</b>	Precincts covering geographical areas of network zones with similar features to aggregate charge zones.	Allows Icon Water to easily link costs to charges. Relatively easy to administer. Price signal (marginally less accurate than case-by-case design).	Some loss of accuracy in price signal.
<b>Single precinct (or 'blanket' design)</b>	A single charge zone or scheme for the entire ACT.	Simple to administer.	Absence of location-based price signal means developers have no incentive to avoid areas reaching capacity.

Table 9.3 undertakes an assessment of the proportion Class 2 costs and charging areas against the principles developed by Icon Water (as outlined in Chapter 5).

Table 9.3: Assessment against Icon Water’s infrastructure funding principles

% of costs paid by developers	Granularity	P1	P2	P3	P4	P5	P6	P7
		Eff’t PS	Equitable	Less CS	Efficient	Sustainable	Simple	Flexible
<b>Nil (0%)</b>	Not applicable	x	x	x	✓	✓	✓	✓
<b>Uneconomic</b>	Infinite precincts (Case-by-case)	x	✓	✓	x	x	x	x
	Several ‘precincts’ covering the ACT	✓	✓	✓	✓	✓	✓	✓
	Single precinct	x	✓	x	✓	✓	✓	✓
<b>All (100%)</b>	Infinite precincts (Case-by-case)	x	x	x	x	x	x	x
	Several ‘precincts’ covering the ACT	✓	x	x	✓	✓	✓	✓
	Single precinct	x	x	x	✓	✓	✓	✓

The assessment shows the following in a brownfield context:

- 0% paid by developers does not send a price signal about the cost developers impose on the network and therefore does not result in an equitable outcome or avoid cross-subsidisation
- Uneconomic component paid by developers:
  - When on a case-by-case basis, while addressing principles regarding equity and avoiding cross-subsidy<sup>4</sup> does not result in efficient sizing of infrastructure nor is it timely, simple, or flexible. It can also be argued that a price signal would not be clearly communicated as an application would need to be made for a price to be provided by Icon Water.
  - When on a single ACT-wide precinct addresses most of the principles, including delivering a superior outcome against the ‘simple’ principle. This approach, however, does not introduce any locational price signal. It is not clear whether a developer would respond to such a price signal in the current ACT market, or by how much. On theoretical application alone this option is not superior.
  - When on a precinct scale a balance is struck between complexity (accuracy) and the overall ease of administration (all though this options meets all the principles outlined meeting the sustainable and simplicity principles would be slightly inferior compared to a single precinct option).
- 100% paid by developers:
  - When on a case-by-case basis does not align with any of Icon Water’s principles
  - When across several precincts addresses most principles although may result in an excessive burden on a small customer segment and is not equitable and may not avoid cross subsidisation
  - When on a single ACT-wide precinct addresses most of the principles but does not result in a direct price signal, may result in an excessive burden on a small customer segment and is not equitable.

In summary a preferred combination of charges and zones has emerged based on the principles. The following section works through each option from an economic perspective.

### Economic benefits and costs

#### *Overview*

The various funding options have been qualitatively compared within an economic cost-benefit framework. The three main economic benefits (or costs) associated with each option are:

- Impacts on the level of development
- Impacts on the amount of capital expenditure incurred by Icon Water over time
- Impacts on the costs of administering the funding arrangements

In addition to these economic considerations, distributional effects need to be considered. All Class 2 infrastructure costs will be paid by some elements of the ACT community at some point in time. If the works are funded by Icon Water, the costs will be borne by the whole Icon Water customer base via tariffs for water and sewerage services over the life of the assets. If the works are funded by developers, the incidence is less clear.

Depending on the responsiveness of demand and supply in the market, the incidence may fall on landholders, developers, or consumers (homebuyers, renters, or non-residential tenants). Many studies conclude that a large share of developer charges will ultimately be paid by consumers (homebuyers, renters, or non-residential tenants)<sup>17</sup>. Others conclude that the decrease in land prices and the increase in housing prices would be similar in magnitude<sup>18</sup>.

In general terms, there is a trade-off between the level of development and the level of Icon Water expenditure. As developer charges increase, marginal developments may become financially unviable, but more Class 2 augmentation works are avoided. Economic net benefits are maximised where development occurs if and only if it is valued above cost.

To achieve this outcome, charges need to be set such that the present value of developer charges and the ongoing network charges that new customers in a development would expect to pay equates to the present value of the forecast incremental costs imposed by the consumer. That is, developer charges would need to equal the present value of incremental costs (both capital and operating costs) minus the present value of incremental revenue; that is, the 'uneconomic component' of costs.

If developer charges are set significantly in excess of this level, the value of the development that is forgone due to the price increase will exceed the cost saving. If developer charges are set significantly below this level, then the value of the resulting additional development will fall short of the additional cost incurred.

Table D.1 in **Appendix D** provides an assessment of the costs and benefits relative to a baseline of the current arrangements in which developers that trigger augmentations fund those works and size the infrastructure at the minimum sizing needed to service their development. We note that the analysis performed is on average, and over time.

The reasoning underlying the assessment for each option is outlined in the following section.

### Discussion and findings

A scenario that performs well in terms of expected net economic benefits is the scenario in which charges are based on the uneconomic component of incremental costs and vary across precincts.

This outcome has a logical rationale. The choice of proportion of costs to be recovered through developer charges is characterised by a trade-off between development and network augmentation costs. The welfare-maximising balance occurs when charges are based on the uneconomic

component of costs. The choice of granularity in the application of the charges is a trade-off between network augmentation costs and administrative costs.

The marginal net benefits of increasing granularity would not be positive beyond the precinct level, since augmentation costs do not vary significantly with location decisions within each precinct.

The marginal net benefits of decreasing granularity, however, may be positive beyond the precinct level, and may be maximised under a single precinct, since administration costs differ depending on the complexity of the scheme being administered.

Each of the alternatives to this scenario has drawbacks.

1. The current '1989' arrangement is likely to lead to inefficient augmentation sizing decisions and high administration costs associated with case-by-case negotiation, particularly given the arrangement's largely untested nature in brownfield development scenarios.
2. The scenarios in which 100 per cent of capital expenditure is recovered from developers are likely to discourage some developments that are valued above cost, since the demand for new brownfield housing is likely to take account of not only upfront payment but also ongoing network charges. They would also lead to adverse distributional outcomes with network charges decreasing at the expense of higher housing prices.
3. The scenario in which Class 2 works are fully funded by Icon Water through network charges would result in relatively high augmentation capital costs, since developers would have no incentive to locate, size or sequence their developments so as to minimise these costs. It would also create distributional issues in that it would increase network charges for customer classes (i.e. all ACT customers) that have not triggered additional development.

Accordingly Icon Water proposes that an uneconomic charging model would represent the best outcome for all parties (Icon Water, the community, and developers). A preferred precinct-scale charging size is present, noting that a case can also be made for a single precinct (trading off simplicity against cost reflectivity).

## Stakeholder consultation performed

Following the performance of the economic analysis on the previous page, Icon Water took a proposed scheme to the community, which included a charge based on the uneconomic component of costs, and 11 precincts based on sewerage catchments.

The following is an extract of Icon Water's stakeholder consultation report:

Icon Water received extensive stakeholder feedback on its proposed precinct sizing. Initially eleven precincts, based on Icon Water's sewerage catchments, was presented as a balance of these two characteristics. The proposal was supported by an assessment against the seven 'principles' that a new code would be assessed against, as well as an economic assessment of costs and benefits.

Feedback received was predominantly in favour of charging based on a single precinct for all of brownfield Canberra. The use of locational price signals based on sewerage catchments was perceived as unnecessarily complex, and possibly a barrier to development in certain areas of Canberra in the long-run.

As noted in the table on the previous page, stakeholder feedback has indicated that a reduction in locational price signals (i.e. differentiated charging areas) is a preferable scheme characteristic. Icon Water's cost-benefit analysis contradicts this view; from a purely theoretical view a locational price signal would direct new users to the areas of our network with capacity (the lowest charges) and therefore increase overall efficiencies.

In short, stakeholders made the case that a single precinct would be:

### Simpler

Simpler to understand and plan for.

### Fairer

Will respond to community concerns about intergenerational equity – precincts have either "got it lucky or unlucky" with the proposed level of developer charges as a result of where they are in the development cycle.

### Less volatile

A single precinct would reduce future volatility of developer charge levels, particularly when considering ACT Government infill plans that are currently 'in-flight'. A single precinct would create a smoother transition of charges from year to year by virtue of its aggregation.

Based on this feedback it is clear that a community preference exists for a single precinct. The economic analysis performed on the previous pages suggests that such an approach, while ranked second in our analysis, may not be inferior. This is because:

- A single precinct will be simpler for the community and Icon Water to understand and administer, decreasing the overall costs of running a scheme;
- Multiple precincts may be subject to year-to-year fluctuations in charge values; a single precinct would be more stable over time (due to aggregation), and
- It is not clear whether the implementation of 11 precincts would deliver a working locational price signal in practice; the charge may not be sufficient in size to manage or deter developer behaviour.

Icon Water is committed to listening to and responding to feedback from industry and community consultation. Following a review of our internal approach, we believe that a revised scheme based on a single brownfield charge for Canberra would still deliver benefit through an increase in the overall simplicity of the scheme, despite a small loss in cost reflectivity.

Please also note that:

- Based on our assessment of current internal practices and systems (in particular our existing Development Approval and Hydraulic Asset Acceptance elements) a scheme of this design would not incur significant administration costs.
- On average across the ACT, the uneconomic component of incremental costs equates to approximately 50 per cent of the Class 2 augmentation capital costs – although this varies by precinct. In Icon Water’s view, there would be merit in adopting a consistent 50 per cent of capital costs and apply it consistently across the precincts in order to aid simplicity and customer understanding.

### **Icon Water proposed approach based on analysis performed**

Icon Water proposes that the brownfield charge:

- Apply only to Class 2 assets
- Be based on 20 year forward looking cost estimates
- Include a 50:50 sharing of costs between developers and Icon Water (as an estimate of the uneconomic component)
- Specify a single charge for all brownfield Canberra.

## Charges to be calculated on a per dwelling basis, connection size or equivalent population basis

Next, we must consider how these costs are to be physically allocated to customers. Based on the approaches adopted in other jurisdictions there are three identified options on how to calculate charges:

- Per dwelling – where the charge is applied to each connection to the water and sewerage network
- Connection size – where the charge is calculated based on the connection size (i.e. 20mm, 25mm, 40mm etc) to the water and sewerage network; or
- Equivalent population (EP) – where the charge is based on the number of EP (a sewerage metric representing network load) forecast to be served by each connection.

Each of these approaches has pros and cons as illustrated in Table 9.4.

Table 9.4: Summary of pros and cons in the selection of the three charge methods for modelling

Charge method	Pros	Cons
<b>Per dwelling</b>	<ul style="list-style-type: none"> <li>Easy to calculate and enforce</li> <li>Transparent for residential sector</li> <li>Lower risk of revenue volatility</li> </ul>	<ul style="list-style-type: none"> <li>'Number of dwellings' does not provide a basis to charge non-residential users, therefore another charge calculation method is required for non-residential users</li> <li>No incentive for lower water use</li> </ul>
<b>Connection size</b>	<ul style="list-style-type: none"> <li>Easy to calculate and enforce</li> <li>Transparent</li> <li>Incentive for lower water use by reducing incoming water needs</li> <li>Common charge units across residential and non-residential demand</li> <li>IW already captures connection sizes of new developments, so no new engineering audit process required</li> </ul>	<ul style="list-style-type: none"> <li>Multi-unit developments connection size not a one-to-one relationship with number of dwellings therefore causing significant revenue variability</li> <li>There may be other reasons for the connection size, such as minimum standards for fire flows</li> </ul>
<b>Per EP</b>	<ul style="list-style-type: none"> <li>Common charge units across residential and non-residential demand</li> <li>IW already uses EP in guidance to developers on connection sizing</li> <li>Easy to apply to different industry sectors, as the number of employees provides a simple charge method</li> <li>Lower risk of revenue volatility</li> <li>Used in utility and development industries across Australia to estimate load/demand.</li> </ul>	<ul style="list-style-type: none"> <li>May be more complex than other proposed measures.</li> </ul>

Any metric used must also consider the development that was previously on any particular site – in effect identifying the increase in demand/usage resulting from brownfield developments. Icon Water proposes that a 'net' basis be applied to the measurement that compares before and after states.

Icon Water concludes that an approach using the 'net increase in EP provides an overall superior outcome as:

- a per dwelling approach is only directly applicable to residential dwellings and therefore requires an alternative approach to calculate non-residential charges. A per dwelling approach also does not provide an incentive for reduced water consumption
- a connection size approach is relatively simple to administer however due to the lack of visibility of future connection sizes (due to the lack of granularity of population and employment forecasts and therefore the need to make assumptions about future connection sizes) it has a high degree of uncertainty with respect to revenue received
- a per EP approach is simple to administer, can be applied to both residential and non-residential developments and has relatively low revenue uncertainty. Additionally EP is able to equivoicate demand between residential and commercial buildings, assisting in brownfield developments that feature changed zoning.
- EP is currently used as a core network forecasting metric, and will also introduce minimal additional administrative costs in an implemented scheme.

EP scaling factors will be published in the *Icon Water AWSS* (our engineering standards) from time to time, and are a standard metric used in the water and sewerage industry. Going forward Icon Water may revise these standards as more relevant or accurate data is published in the sector.

#### Stakeholder consultation performed

Icon Water received feedback on the proposed multiplier during its community consultation process. Some developers expressed a preference for a more granular table than the one published in Icon Water's engineering standards. The following is an extract of Icon Water's stakeholder consultation report:

During the initial design of its proposed brownfield scheme Icon Water investigated a number of alternative charge drivers, including connection size (water and sewer ties), the number of dwellings, and the EP method eventually adopted. Icon Water proposed EP because of its ability to easily account for differing land use types (residential vs. commercial vs. industrial) and density profiles.

Some comments received suggested that charges would be more accurate if the number of bedrooms was the primary driver for residential charges (rather than per EP). Following this feedback Icon Water performed an internal review and noted that:

- Overall demand is driven by a combination of development type, sewerage area (or network length), and the impacts of equivalent population (load) on a network, not just population.
- Icon Water is provided with information regarding the design of a property during the standard Building Approval (BA) / Development Approval (DA) / Hydraulic Servicing Plan (HSP) review process, however this does not provide accurate and final information regarding the number of bedrooms on a property. Absolute certainty on developed form occurs much later in the development process.

There is a risk that DAs and HSPs submitted to Icon Water may be slightly varied from the final built form of a development, resulting in an incorrect application of a charge. Additionally, some issues may be present regarding the definition of what a 'bedroom' is as communicated to ACTPLA versus the general market (i.e. are studies counted as bedrooms?).

Because of these limitations Icon Water does not agree that a change from an EP-driven basis of calculation for residential property types is appropriate. Instead, an increased level of granularity within our EP framework is preferred.

Accordingly, we have not updated the EP table in this proposal, however if future iterations of the EP frameworks are published by Icon Water that enable further detail then our charging regime will be adjusted accordingly.

### **Icon Water proposed approach**

Icon Water proposes that the brownfield class 2 charge:

- Include a 50:50 sharing of capital costs between developers and Icon Water (as an estimate of the uneconomic component)
- Specify a single charge for a brownfield precinct
- Calculates charges on a 'net increase in EP' basis

## 10. How charges are introduced and administered

The previous chapters identified the costs to be recovered and how the charges are calculated. This chapter investigates a number of issues related to how charges are introduced, implemented and adjusted over time which include:

- Introduction of charges
- Collection of charges
- Consideration of Icon Water's overall financial position
- Definition of and changes to precinct boundaries
- Approach to adjusting charges
- Accounting treatment
- Regulatory treatment.

### Introduction of charges

Icon Water is seeking to establish the revised arrangements from 1 July 2017. To do so we have prepared our submission based on the following published timeline.

Table 10.1: Icon Water's steps and timing to date (as at date of submission)

Stage	Description	Date
<b>Icon Water and ICRC informal consultation</b>	Informal consultation between Icon Water and the ICRC on key aspects of the Code	Mid to late 2016
<b>Icon Water consultation</b>	Icon Water undertakes targeted consultation with key stakeholders including industry and developers	January and February 2017
<b>Extended consultation</b>	Extension of consultation period to take additional feedback into account	17 March 2017
<b>Written feedback required</b>	Interested parties should provide feedback to Icon Water	17 March 2017
<b>Icon Water finalise proposed Code</b>	Icon Water will consider the feedback received and produce a final Code	17 March to 30 March 2017
<b>Icon Water submit proposed Code to ICRC</b>	Icon Water provide formal submission to ICRC to introduce a Code	30 March 2017
<b>ICRC assesses proposed Code</b>	ICRC assesses proposed Code, undertakes public consultation and approves/rejects Icon Water's proposal	Through to 30 June 2017
<b>Code introduced</b>	If approved, the Code will come into effect from this date	1 July 2017

To allow industry to transition to the new regime, we propose a transition period of two years based on the date of contract exchange on brownfield properties. We consulted extensively with the Canberra community on this solution (see Ch. 18), and believe it appropriately balances:

- A clear transition to a new and sustainable brownfield charging scheme
- Fair communication of development costs to Canberra developers.

An extract from the stakeholder consultation report is as follows:

Icon Water's proposal contained a transition into the scheme based on the date a Development Application was approved. Feedback received indicated that this milestone was not always controllable by a developer, and did not have a strong relationship with a capital investment decision on a project.

An alternative milestone for transition into the proposed scheme was identified as the date of exchange for a property contract. This would allow all parties who have made investment decisions prior to the public disclosure of this scheme proposal to continue.

Icon Water does not perceive any issues with this alternative measure. We note that any property purchase after the scheme's 'go-live' would have had prior knowledge of this scheme, and should not be exempted under this argument.

Accordingly, our proposed transition arrangements are as follows:

- For properties purchased (have had contracts exchanged) before the go-live date:
  - A two-year transition will apply.
  - During this time the developer will have the option of utilising either the existing arrangements or the new proposed scheme.
  - All brownfield developments within the transition arrangements will have two years from go-live date to lodge a Development Application to remain under the existing arrangements.
  - Failure to lodge a Development Application will see the new scheme apply.
- For all properties purchased (have had contracts exchanged) after the go-live date, and for all greenfield developments, the new arrangements will apply.

## Collection of charges

We propose that the charge be payable at the same time as the developer pays their connection fee, or if no connection is required (as a property may not require reconnection) then on the date of the certificate of occupancy. This is prior to network connection for a development, and has been chosen for two reasons:

- Sufficient information is available to the developer and Icon Water about the final form of the development, reducing the risk that any charge levied may change
- Cash payment ahead of connection will assist Icon Water in managing credit risk; reducing collection costs and increasing the overall simplicity of the scheme.

The current draft process and timing for the administration of this scheme is shown in Figure 10.1 (for brownfield connections). Please note that where possible this scheme has leveraged existing business processes to ensure overall efficiency.

### Determination of EP and likely charges

In a typical development there are three interactions with Icon Water – upon lodgment of the Development Application, upon submission of the detailed design, and upon connection to our network. Each of these will now carry an implication for the scheme:

- Icon Water will now estimate the cost of scheme charges when the DA is lodged based on high-level planning assumptions. Due to the likely evolution of designs from this stage any values will be indicative only.
- When submitting the detailed design Icon Water will perform a refined estimate of the net EP increase for the development. This is able to be estimated based on planning data used, such as floor space or the number of expected apartments.
- A final check is performed by Icon Water upon connection to our network.

We envisage that every development will feature discussions with developers and consider factors such as Gross Floor Area ('GFA') as well as previous development applications present for the site.

### Managing a developer's cost-risk

We are also proposing a mechanism to increase the certainty a developer has under the charge:

- When a Development Application is lodged it is proposed that the precinct charges active at that date is locked in for the development except where
  - the number of EP present in the final development changes. This would help to increase certainty.
  - The time period between lodgment and when the charge becomes payable extends beyond 1 July each year. In these circumstances the precinct charge per EP will be escalated by 2.5% per annum as a proxy for CPI.

### Basis for a single charge

Separate water and sewerage network charges are included at Appendix G for reference. We are publishing a single charge (as opposed to two separate charges) to manage the complexity of the scheme being proposed. Icon Water does not intend to separately publish or disclose these as part of the ongoing administration of the code.

## Consideration of Icon Water’s overall position

### Tracking of overall position

It is proposed that Icon Water:

- Monitor funds received and expended in its financial system (currently Oracle), enabling ongoing analysis of the scheme. Funds received would be tracked in a single account; this proved a balance between detail and simplicity.
- As required, share the current status of the account with the ICRC as part of annual (or otherwise) regulatory submissions for the updating of precincts and charges. The status of the account will not be made visible to the general public and is considered commercial-in-confidence.
- Receive funds in the primary Icon Water bank account.

At the commencement of each annual review of the scheme Icon Water’s actual collections and expenditures will be compared to budget; it is anticipated that scheme charges would be updated to reflect the progress made against this budget at the time of review. The approach will be a 20 year rolling forecast.

### Tracking of annual over or under-spends compared to budget

Icon Water has also considered whether the charge should also consider both:

- The under or over-collection of revenues from prior financial years to date
- The under or over-spend of capex from prior financial years to date

Practically this may manifest itself in a positive or negative recovery item being present in any spending plan. Table 10.2 below outlines the key pros and cons of various recovery mechanisms.

Table 10.2: Purpose of the code

Mechanism type	Pros	Cons
<b>No recovery</b> Unders / overs against plan are not recovered.	Simple No distorting influences on annual prices charged.	Risk of under-collection for Icon Water Risk of over-collection for customers (as a class)
<b>Full recovery</b> All unders / overs against plan are recovered.	Simple from an economic standpoint No risk of under or over-collection for Icon Water No risk of under or over-collection for customers (as a class)	Some additional administrative work required to calculate. Possible distorting influences on annual prices charged to individual customers.
<b>Deadband recovery (over a variance of X%)</b>	Less distorting influences on annual prices charged to individual customers. Less risk of under or over-collection for Icon Water or customers (as a class).	Some additional administrative work required to calculate.

Icon Water proposes that full recovery is applied due to its economic simplicity, as well as the reduced risk to Icon Water and customers. The remainder of this information paper considers the likely value of charges, their comparison to other jurisdictions, and our stakeholder consultation process.

*Examples – Revenue side variances*

- Icon Water hypothetically forecasts total scheme revenues of \$10.0m in the first year of operation. At the end of year one actual collections may be \$10.5m. Icon Water would take the over-collected \$0.5m into account in revising future charges to be collected by the scheme.
- Icon Water hypothetically forecasts total scheme revenues of \$10.0m in the first year of operation. At the end of year one actual collections may be \$9.8m. Icon Water would take the under-collected \$0.2m into account in revising future charges to be collected by the scheme.

*Examples – Capital expenditure side variances*

- Icon Water hypothetically forecasts that a project in year five of the scheme costs \$10.0m to build. When the project is actually completed, total costs are \$11.0m. Icon Water would take the extra \$1.0m of capital expenditure into account in revising future charges to be collected by the scheme.
- Icon Water hypothetically forecasts that a project in year ten of the scheme costs \$10.0m to build. In year ten development forecasts are changed, and the need for this asset is deferred beyond the forecast period. Icon Water would take this over-collected \$10.0m into account in revising future charges to be collected by the scheme.

## **Definition of and changes to precinct boundaries**

### Use of precincts in greenfield and brownfield definitions

Icon Water propose calculating charges for all areas within the precinct boundaries with the boundaries reflecting areas where brownfield redevelopment may occur. For areas outside the boundaries no charge will be calculated – rather these will be considered to fall under the greenfield arrangements.

Icon Water considers that precincts defined by sewerage catchments offer an optimal approach to capital contribution charges for both water and sewerage, since:

- the majority of forecast Class 2 augmentation works in the next 20 years are associated with the sewerage network
- costs imposed by development vary significantly across, but not within, sewerage catchments.

### Current brownfield areas within the ACT

Figure 10.2 illustrates current areas assessed as 'brownfield' within the ACT. This is a single precinct in the final charge schedule.

### Growth of existing and establishment of new precincts

New suburbs will be added into the brownfield precinct as they are developed.

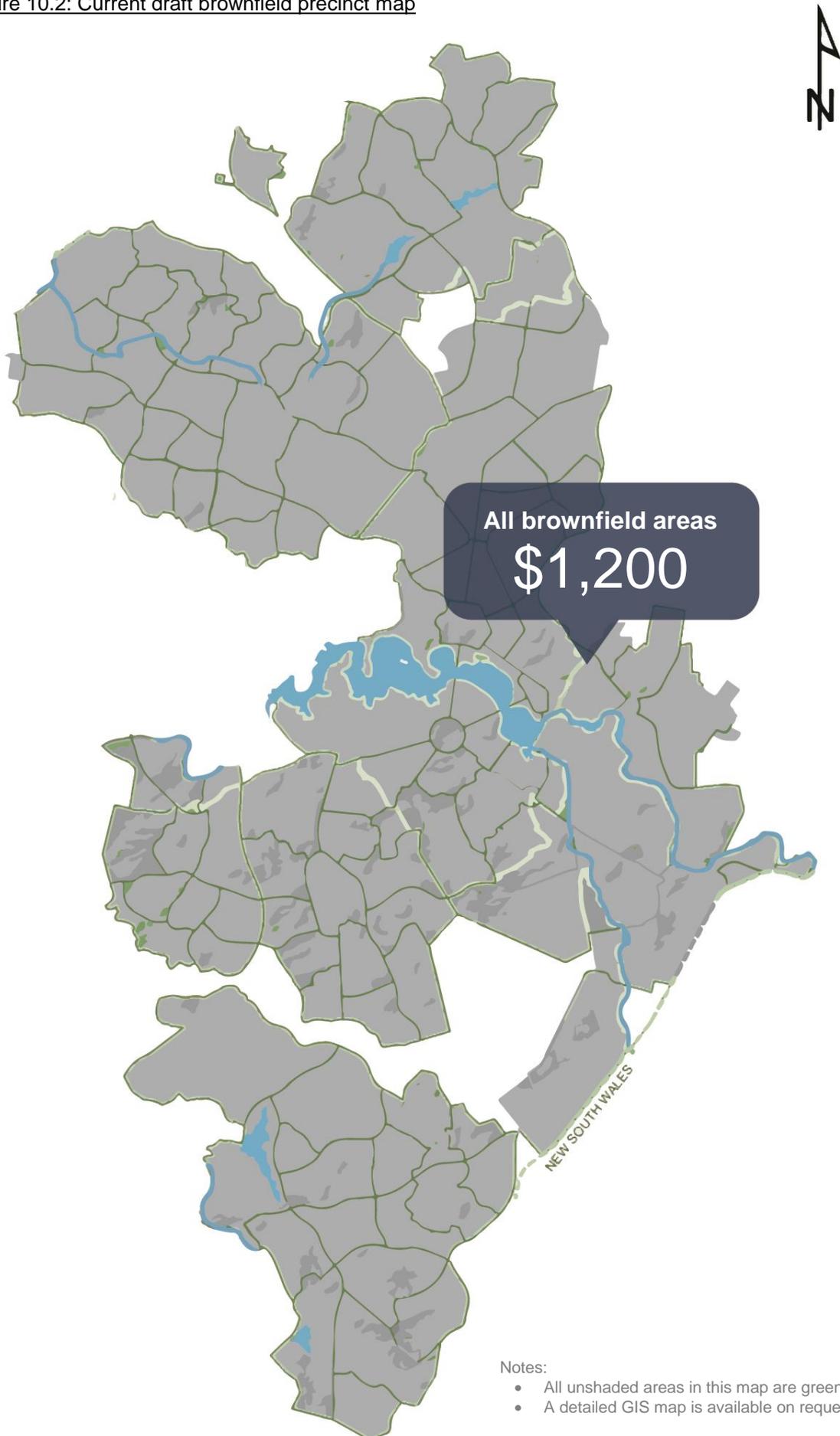
Icon Water has investigated the development profile of new Canberra suburbs and developed three possible approaches when considering when a new greenfield suburb turns into a brownfield suburb:

1. That greenfield developments are considered to transition stage-by-stage to brownfield when their Certificate of Operations is signed by Icon Water and the area is connected to Icon Water mains.
2. Developers of greenfield estates, in their interactions with Icon Water (i.e. designing the Class 2 and 3 water and sewerage assets to be paid for or built and gifted), will nominate a date after which their suburbs will be completed. After this agreed date Icon Water will transition these suburbs to brownfield and illustrate this in our regular updates to the precinct map.
3. That we create business rules that will provide guidance for determining transition. In short if a suburb is greater than 10 years old, more than 95% developed, or if there are special circumstances present, the suburb's classification will be changed.

Following the identification of a suburb as brownfield both the future Class 2 growth capex and population forecasts are included in the calculation for its precinct.

Icon Water prefers the use of option 1 – this provides for greater clarity as to the date of transition for all parties.

Figure 10.2: Current draft brownfield precinct map



## Approach to adjusting charges

We propose that this charge be treated as a Miscellaneous Charge under a price direction. Icon Water proposes to review, and adjust if required, the schedule of charges on an annual basis. Refer to the *Regulatory treatment* section for further detail.

The new charges would then apply to any Development application lodged on or after 1 July of that year.

Please note the comments in *Collection of charges* in this chapter regarding the locking-in of charge schedules; there will be some developments that will be charged using prior year rates indexed with a 2.5% CPI figure.

Icon Water considers it unlikely that charges would fluctuate significantly from year to year given a stable set of core assumptions. Changes would practically only result from:

- 'Overs and unders' (see page 53)
- Increasingly accurate cost estimates (for example as a project moves from being 10-15 years away to 5-10 years away under Icon Water's capital forecasting process)
- Changed population and commercial floor space growth forecasts from the ACT Government (our proposal uses the *Population growth forecast by suburb, October 2016 data*)

## Accounting treatment

Icon Water has formalised its internal accounting position on the treatment of these arrangements. This accounting treatment will form part of our annual financial statements and as such will be audited annually. In summary, the position is that:

- All revenue received will be recognised as unearned revenue and recorded as a liability in the accounts of Icon Water.
- Once assets funded under the scheme are completed an entry will be processed to reduce any unearned revenue by the 50% of the value of the asset commissioned, and recognise revenue in the statement of comprehensive income.
- Any payments to external parties to construct related Class 2 assets is considered a separate transaction – no netting off will occur, and transactions will be treated in accordance with standard practice.

Icon Water's dividend policy has recently been refined to exclude profits generated from gifted assets and contributions; this ensures that cash contributions will be managed by Icon Water until required and not passed through to shareholders.

Any revisions to this accounting approach would be performed as part of Icon Water's internal processes, overseen by the Board and Risk and Audit Committee.

## **Regulatory treatment**

### Regulatory treatment

Icon Water proposes that income from developer charges be offset against gross capital expenditure in the regulatory pricing model. Income from developer charges would effectively be treated as negative values of capital expenditure for the purpose of calculating the opening value of the regulatory asset base (RAB) and the forecast values of the RAB over the regulatory period for which prices are being set.

Any mechanisms for dealing with the risk of under or over collection of developer charges relative to those forecast values will be considered as part of each major price review in the context of the wider form of regulation.

In the current regulatory period, for which a price path has already been set, Icon Water proposes that no adjustment be made on account of the introduction of this capital contributions code. The effect of the code will be to increase Icon Water's net capital expenditure, since Icon Water will need to fund 50 per cent of Class 2 augmentation capital projects that had previously been excluded from net capital expenditure forecasts on the basis that the triggering developer would fund the works.

Icon Water will not seek any adjustment to account for this additional expenditure, since current forecasts indicate that total capital expenditure over the regulatory period will be below the level forecast in the Industry Panel's final decision.

### 2018 regulatory submission

Given the concurrent submissions occurring for this code and Icon Water's water and sewerage tariffs, these documents will be updated to ensure each reflects the final proposed position.

### Regulatory asset base(s)

The WSCC scheme does not require the regulatory asset base to be segmented by brownfield and greenfield areas. Icon Water considers that:

- There is not currently a linear relationship between brownfield growth areas and capital expenditure required.
- The impact of this scheme on Icon Water's overall regulatory asset base is considered immaterial.
- Maintaining separate regulatory asset bases would be a time-consuming and costly exercise, where it is highly likely that the costs of compliance would far exceed any real benefits delivered.

### Ongoing interactions between Icon Water and the ICRC

Under the proposed scheme there will be two ongoing actions with the ICRC each year:

- An annual submission to the Commission, either notifying that there will be no changes to the scheme, or providing updated capital expenditure forecasts and miscellaneous charge values. This will be ahead of the commencement of any financial year, and will require the ICRC's approval following our submission.
- Annual reporting on the performance of the scheme. This will be after the end of any financial year, and may generate follow-up questions but no specific approval.

It is Icon Water's preference that these items be built into existing practices within the business for simplicity and efficiency. Table 10.3 outlines the proposed processes to take place.

Table 10.3 – Summary of proposed ongoing interactions with the ICRC on WSCC

Interaction	Existing process	New WSCC action	Timing
<b>Submission to update charges</b>	Regulatory affairs: Annual water and sewerage tariff charge update.	Preparation of annual submission on miscellaneous charges	February
		Initial discussions with the ICRC on topic	March
		Formal submission of paper	May
		Responses to queries as asked	May
		Receipt of approval	May/June
<b>Reporting</b>	Secretariat and reporting – ongoing annual reporting to the ICRC as required under the <i>Utilities Act</i> .	Collation of scheme performance data after 30 June	August
		Preparation of report	September
		Submission of report to the ICRC	By 1 October

Icon Water has included a legal form of these interactions into the submitted Code; these will allow the ICRC to ensure compliance with this proposed process. For completeness they are listed below in Table 10.4.

Table 10.4: Annual review principles

Subject	Action
<b>Review of scheme performance to date</b>	Review actual collection and expenditure data by precinct
<b>Review current brownfield network boundaries</b>	Review Icon Water network and prepare an updated precinct map showing greenfield and brownfield areas
<b>Assess whether change in charge is required</b>	Perform an assessment of whether a change in the WSCC charge is required
<b>Submit proposal to the ICRC</b>	Send a submission to the ICRC, engaging in dialogue and providing supporting documentation to update the charge as required.

### **Icon Water proposed approach**

Icon Water proposes that the brownfield charge be introduced and implemented with the following characteristics:

- Introduced from 1 July 2017 (with a two-year transition for brownfield based on the date of contract exchange for property purchases) as a miscellaneous charge.
- Charges advised at several stages during our standard connection process, and levied / collected at the time of connection to the sewerage network.
- Charges being locked-in for a developer based on the timing of their Development Application.
- Precinct boundary updated as required, with new greenfield developments being considered on an annual basis for inclusion in the existing precinct.
- Over and under-collections compared to budget tracked and adjusted in each year's price adjustment if deemed necessary by Icon Water.
- Charges able to be updated annually based on updated population and capex data.

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# Part 3: Greenfield code analysis

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## 11. Greenfield: Costs to be recovered from developers

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The cost to be recovered from developers in greenfield developments requires consideration of:

- The scenario in which Icon Water is seeking to recover costs
- The assets to be included in the charge regime
- How the costs are determined

Some of these questions are relatively straight forward and can be quickly answered; others, such as the determination of costs, require more detailed analysis to arrive at a justifiable outcome.

### **The scenario in which Icon Water is seeking to recover costs**

As discussed in the introduction of this information paper Greenfield developments follow an existing process whereby the developer of a greenfield estate constructs and then gifts assets to Icon Water. At present there are no concerns with this gifting arrangement – the only issue is that this practice is undocumented and possibly unclear to new entrants.

For the purposes of completeness we will perform an assessment of the most appropriate charging scheme using the same analysis as present for brownfield charge design.

The final outcome of this analysis will be codified as part of the Water and Sewerage Capital Contributions code to address the transparency / clarity issue noted.

### **Icon Water proposed approach**

Icon Water therefore proposes that the Code:

- codify the final greenfield charging principles for the purposes of clarity.

## The assets to be included in the charging regime

Table 11.1 provides a conceptual overview of the various components of the Icon Water network. As discussed in Ch. 8 there are three broad asset ‘Classes’; to ensure consistency of discussion these classes will also be adopted for greenfield discussion:

- Class 1: Headwork assets
- Class 2: Shared assets
- Class 3: Reticulation assets

Detailed definitions of which assets are classified as in each class can be found in **Appendix C**. As with brownfield applications each stage has varying funding arrangements.

Table 11.1: Current funding arrangements for greenfield network augmentations

<b>Class 1</b>	<b>Class 2</b>	<b>Class 3</b>
Headwork assets	Shared assets	Reticulation assets
Paid for by Icon Water and recovered from all water and sewerage customers	<p>Paid for by the developer who builds the suburb (or stage). In recent years this has typically been the ACT Government.</p> <p>Subsequently gifted to Icon Water.</p> <p><i>Definitions for the 1989 Arrangements did not describe our network in a contemporary manner, see the note below.</i></p>	<p>Paid for by the developer who builds the suburb (or stage), typically the ACT Government.</p> <p>Subsequently gifted to Icon Water.</p>

Please note that the boundary between Class 1 and 2 is now defined differently to the equivalent section in the 1989 Arrangements – this is due to the advent of new technology and approaches to water and sewerage management.

Noting this Icon Water considers that the charge should apply only to the capex cost of Class 2 shared assets. This is driven by the previous analysis in Ch. 8:

- There is no ‘issue’ with the current funding arrangements for greenfield classes, however a ‘more optimal’ solution may be present.
- Icon Water does not consider that the inclusion of Class 1 assets results in a significant overall benefit to offset the administrative complexity. The majority of Class 1 infrastructure works relate by definition to upgrading broad-based assets servicing the general population; it is therefore difficult to isolate those costs related to ‘new’ customers.
- Similarly, Icon Water can see little benefit in altering the current arrangements for Class 3 assets. The current approach is consistent with other jurisdictions, is well understood and accepted by industry. Additionally the direct beneficiary of these works is the developer.

### Icon Water proposed approach

Icon Water proposes that the Code:

- codify the most appropriate greenfield Class 2 charging principles for clarity.
- codify all greenfield Class 1 and Class 3 charging principles for clarity.

## How the charges are determined

When considering a charge to recover specific costs there are competing approaches to determine which costs are reflected in charges. For example:

- Costs can be based on forecasts of future costs or actual historical costs.
- If future costs are used then a forecast period must be adopted.
- If historical costs are adopted then a time period must be selected for the averaging of these costs. It is possible to perform this on a case by case basis; if so the time period is effectively zero.

In short these options each have an impact on any price signal created however have their pros and cons; Table 11.2 outlines some of the trade-offs of these approaches.

Table 11.2 – Trade-offs in determining costs for recovery

Issue	Trade-off ...	... against
<p><b>Basis for charging</b></p> <p><i>Whether historical or planned future capex should be used for cost determination</i></p>	<p><b>Backward looking prices</b></p> <p>High reliability of historical data as an information source however relevance to potentially unrelated future expenditure questionable.</p>	<p><b>Forward looking prices</b></p> <p>Specifically relates to infrastructure expenditure in question, however some degree of judgment always present in forecasts.</p>
<p><b>Forecasting or review period for capex</b></p> <p><i>The forward period for capital expenditure</i></p>	<p><b>Short period</b></p> <p>Greater accuracy of costs but increased 'lumpiness' of charge values.</p>	<p><b>Long period</b></p> <p>Less accuracy but smooth charge patterns reducing 'cost shock' for customers.</p>

As outlined earlier in this paper our assessment and understanding of greenfield developments is constrained by a limited availability of future forecasts, and poor quality cost and forecast data. Typically Icon Water's experience is that:

- General information about future greenfield land releases is known as ACT Government release forecasts; these are at a high level and do not support detailed infrastructure planning. These are published up to ten years in advance of suburb construction.
- Suburb master plans are issued prior to their construction; these provide detail on the general layout and capacity of infrastructure required, but do not specify detailed cost information. These are published between one and five years in advance of suburb construction.
- Detailed schedules of assets constructed (including cost information) are not available to Icon Water until after construction has been completed by the greenfield developer. This occurs in line with the staged construction of greenfield suburbs, and is typically 3-6 months after the asset's construction. This data requires review, assessment, and validation by Icon Water (by the Hydraulic Asset Acceptance team) prior to final acceptance, which can take a further 1-6 months depending on the nature of the assets involved.

These characteristics limit the desirability of forward looking prices, as reliable information is generally not available to Icon Water until several months after the relevant asset construction has occurred.

It is our view that forecast data would be highly susceptible to material fluctuations as estimates change, and that any scheme's transparency would be hindered by this.

Greenfield suburb stages (which are the basis on which Icon Water accepts this infrastructure) do not have any standardised size; the geographic layout, infrastructure design, and size of each stage will vary based on the individual conditions present. Typically Canberra's greenfield development sites are a result of:

- Available land across the ACT – a centralised outcome from the ACT Government that considers the broad land development strategy.
- The overall cost of developing each site – this includes roads, public works, and other necessary infrastructure of which water and sewerage are a small component.

Water and sewerage infrastructure is only one component of developing a greenfield site.

### **Case study: Molonglo and Murrumbidgee Trunk Sewers**

- Two greenfield estates each required lengths of trunk sewer (stage 2 works) to be constructed so that they could be effectively serviced:
- Stage 1 of the Molonglo trunk sewer to service the Molonglo Valley; and
- The Murrumbidgee Trunk Sewer to service the southern catchment of the Ginninderry (Riverview) development.
- The Molonglo Trunk Sewer is a 2.6km 525-600mm pipe, and with an estimated cost of \$5.5m
- The Murrumbidgee Trunk Sewer is a 1.8km 525-600mm pipe, with a current estimated cost of \$20m.
- The significantly higher cost for the latter is due to differing topography, environmental factors, and the requirement for large parts of the sewer to be constructed through micro tunneling rather than open cut trenching.
- It illustrates that the capital expenditure for a greenfield suburb will vary based on the specific geographical and environmental factors present in each area.

As a result, long-term historical data is unlikely to yield accurate or reliable results in any scheme that is administered. Short-term historical data, assessed on a case-by-case basis, appears to provide enough accuracy and alignment with existing processes for Canberra's greenfield developers.

Based on the analysis above Icon Water considers that a greenfield scheme based on 'actuals' is most appropriate; whereby charges are assessed as development occurs, and no forecasting occurs.

This is in direct contrast to the proposed brownfields scheme; predominantly due to the quality of underlying forecast data, and the usefulness of this data in predicting future infrastructure augmentations.

### **Icon Water proposed approach**

Icon Water proposes that the Code:

- codify a charge for greenfield that considers Class 2 assets only, with costs being based on actual incurred infrastructure costs by developers.
- codify but not alter existing greenfield Class 1 and 3 practices for the purposes of clarity.

## 12. Greenfield: How costs are recovered from developers

The previous chapter identified the pool of costs to be recovered (i.e. Class 2 costs, assessed on a case by case basis for greenfield developments) in the proposed charge. In this chapter the recovery of costs is assessed against the principles followed by an assessment against an economic cost/benefit framework.

The following specific issues are relevant to considerations of how to recover these costs from developers:

- The proportion of costs related to Class 2 assets ('Class 2 costs') recovered from developers; including whether this should be in its current form (gifted assets) or through the levying of a charge on developers.
- Whether a single ACT-wide charge is levied, whether grouping occurs, or whether development-by-development charging occurs.
- If grouping of charges occurs, whether charges are then allocated to developers based on some scaling factor.

For ease of analysis, the proportion of Class 2 costs recovered and the decision around charging areas are considered together.

### Proportion of Class 2 costs and charging areas

#### Proportion of costs paid

There are three key options available when considering the proportion of Class 2 costs which could be recovered from developers. These align with the literature review in Ch. 3 and are outlined below.

Table 12.1: Proportion of Class 2 cost recovery options

<b>% of costs paid by developers</b>	<b>Description</b>
<b>Nil (0%)</b>	Water and sewerage customers are charged for all applicable infrastructure upgrades through network charges. All customers pay for growth infrastructure. Practically Icon Water would issue cheques to greenfield developers following the finalisation of their construction.
<b>Uneconomic</b>	The uneconomic component is the deficit (in net present value terms) of the costs of augmentation over the expected future revenue from growth. This would require a bespoke calculation for each individual greenfield land parcel completed.
<b>All (100%)</b>	All infrastructure augmentation capital costs are paid by developers. Some cross-subsidisation may occur between existing and new customers.

For the purposes of clarity, it is worth distinguishing between schemes that charge 100% of an asset's value via financial transaction, and those that require that assets constructed be gifted. The former (not currently in place) would require the introduction of a number of new business processes and systems.

#### Charging areas

As with the proportion of Class 2 costs to be recovered, there are a number options that can be applied to the size of the geographic charging areas.

These range from a case-by-case approach which looks at the specific area impacted by a network augmentation through to determining a single price which applies across the whole of the ACT.

The trade-off present between large and small precincts documented in Ch. 9 does not fully apply in a greenfield context; this is because of the difficulty in obtaining accurate and reliable cost forecast data. The outcome of this is that:

- Larger precincts decrease the relationship between a development and its infrastructure impact / cost. They also require greater levels of calculation / analysis and require higher administration costs.
- Smaller precincts increase the relationship between a development and its infrastructure impact / cost. Compared to larger precincts, they also incur a lower level (although still considerable) level of administrative cost.

It is therefore important to appropriately size precincts to ensure accuracy of price signals, a 'fair' distribution of costs, reasonable overall administrative costs.

This charge is also unlikely to deliver any locational price signal, because the developer considers water and sewerage infrastructure costs as a small portion of overall development costs. A moderate variation in Icon Water's charges is unlikely to influence the overall pattern of development given its planned and sequential nature within the ACT.

Table 12.2 outlines various approaches to precinct design ranging from 'infinite' precincts (i.e. assessed on a case-by-case basis), through to a single ACT-wide precinct.

Table 12.2: Approaches to precinct design

Granularity	Description	Pros	Cons
<b>Infinite precincts (Case-by-case)</b>	Case-by-case consideration of all greenfield development stages.	Appropriate cost reflectivity. Lowest administration charges.	No effective price signal.
<b>Several 'precincts' covering the ACT</b>	Precincts covering geographical areas of network zones with similar features to aggregate charge zones.	Nil	Difficult to administer due to limited availability of forecast data. Limited cost reflectiveness due to averaging of diverse instances. No effective locational price signal.
<b>Single precinct</b>	A single charge zone for the entire ACT.	Nil	Difficult to administer due to limited availability of forecast data. Limited cost reflectiveness due to averaging of diverse instances. No effective locational price signal.

Table 12.3 undertakes an assessment of the proportion Class 2 costs and charging areas against the principles developed by Icon Water (as outlined in Chapter 5).

Table 12.3: Assessment against Icon Water’s infrastructure funding principles

% of costs paid by developers	Granularity	P1	P2	P3	P4	P5	P6	P7
		Sends eff’t price sig.	Equitable	Avoids cross-subs’d.	Efficient	Sustainable	Simple	Flexible
<b>Nil (0%)</b>	Not applicable	x	x	x	✓	✓	x	✓
<b>Uneconomic</b>	Infinite precincts (Case-by-case)	✓	✓	✓	✓	x	x	✓
	Several ‘precincts’ covering the ACT	x	✓	✓	✓	x	x	x
	Single precinct	x	✓	x	✓	x	x	x
<b>All (100%)</b>	Infinite precincts (Case-by-case)	✓	✓	x	✓	✓	✓	✓
	Several ‘precincts’ covering the ACT	x	x	x	✓	✓	x	x
	Single precinct	x	x	x	✓	✓	x	x

The assessment shows the following:

- All options:
  - Satisfy the ‘efficient’ outcome – this is because all accepted infrastructure must be subject to Icon Water’s approval under the technical utility regulation code. Of this code ‘efficient investment’ is one of the guiding principles.
- 0% paid by developers:
  - Does not send a price signal above the cost of a greenfield estate; and does not result in an equitable outcome or avoid cross-subsidisation (as water and sewerage tariff payers would fund this infrastructure).
  - Provides developers with little incentive to deliver infrastructure with the lowest up-front (let alone lowest whole-of-life) costs.
  - Does not require any substantial change to current regulatory practice; Icon Water prepares high-level forecasts of gifted assets that are then subject to a ‘true-up’ process at the end of each regulatory period. It is likely that the same process would occur.
  - Would incur additional administrative costs; Icon Water does not construct these greenfield estate assets and does not intend to change this practice. Additional administrative, planning, and cost validation (i.e. quantity surveyor) costs would be incurred to ensure that all information about the constructed assets (including cost) is fit for purpose and accurate. On balance this reduces the simplicity of this option.
- Several ‘precincts’ covering the ACT, and single precinct options:

- Reduce the ability of a charge to send an accurate price signal – this is because there are a low number of greenfield developments, each with varying capital and design requirements. Taking an average, or aggregating these into one value results in sub-optimal outcomes for the ‘Sends efficient price signal’ principle.
- An argument can also be made that the aggregation of greenfield developments would result in a level of cross-subsidisation between unequal developments.
- The calculation of precincts or aggregate spending levels would require the development of forecasts more accurate than those required at the regulatory level (as they would not have the benefit of a ‘true-up’ process). Given the limited availability of accurate data, this would likely place significant additional burden on administrative processes, causing a negative outcome for ‘Efficient infrastructure investment’ and ‘Simple’ principles.
- Any calculation involving aggregation would be impacted by changes to the timing and sequence of greenfield developments. These can often change with limited notice depending on negotiations between the greenfield developer and third parties. Ongoing changes to the charge’s calculation may create delays in the development process – because of this ‘flexible’ and ‘sustainable’ principles are not satisfied.
- As a high-level statement; when aggregation is present; the ability of Icon Water to effectively administrate the scheme is limited. This is because of the overall availability, detail, and flexibility of forecast data, and corresponding increase in cost and complexity required.
- Case-by-case uneconomic portion option:
  - By design this option will achieve the ‘sends an efficient price signal’, ‘equitable’, and ‘avoids cross-subsidisation’ principles. It is able to send appropriate price signals to each greenfield development based on their unique characteristics, their impact on Icon Water, and specific details of the specific development in question.
  - These same characteristics drive additional administrative workload, as the calculation of the economic and uneconomic components of each individual development in a timely manner will require a significant level of additional resource utilisation within Icon Water (refer to the analysis on the next page).
  - Finally, this scheme would deliver an optimal outcome for all developments (from an economic perspective) as any charge would be recalculated each time an out-of-sequence development occurred (or the planned dates for greenfield estates changed). We believe that this option is most able to take variations into account.
- Case-by-case 100% developer charge option:
  - While this charge does not charge the uneconomic component to developers, it does send an accurate price signal about the costs of infrastructure in any area. It also ensures that infrastructure costs are quarantined within each new greenfield development, and that new users do contribute towards these costs.
  - A 100% charging rate would result in some cross-subsidisation between new greenfield estate customers and existing water and sewerage tariff payers, resulting in a negative assessment for the ‘Avoids cross-subsidisation’ principle.
  - Due to its clear and accepted nature, and the absence of a requirement to recalculate the uneconomic component each time a development variable changes, this option is unlikely to result in extended negotiations or Icon Water recalculating its charging portion – this satisfies the ‘sustainable’ and ‘flexible’ principles.
  - Finally, this charge is amongst the simplest of all options proposed.

### **Analysis: Additional administrative requirements for uneconomic charging options**

- When investigating possible charging options Icon Water investigated the additional administrative burden likely to be incurred if a case-by-case uneconomic administrative arrangement were adopted as a way to deliberate the 'simple' and 'sustainable' principles.
- The following is a summarised list of additional actions that would need to be performed to accurately administrate such a scheme.
- Forecasting:
  - Review and quality assurance of greenfield development forecasts. Possible commission of independent forecasts at appropriate levels of detail.
  - Costs related to the development of accelerated growth servicing / estate master plans at an appropriate level of detail.
  - Detailed infrastructure costings performed at a high level of detail to support economic/uneconomic calculations (currently not obtained with sufficient accuracy until project completion).
- Review:
  - Quality assurance services over all capital forecasts received.
  - Quantity surveyor costs relating to the reliable estimation of future unknown costs (not currently incurred by Icon Water for these items).
  - Cost related to the acceleration of asset acceptance procedures to ensure timely infrastructure payments occur to developers.
- Processes and systems:
  - Costs relating to the design and implementation of these business changes, including impacts on existing and new (AMMS) business systems within Icon Water.
- Finance:
  - Implementation of processes to pay developers for infrastructure built, including the negotiation of financing to support this.
- Legal:
  - Contract negotiation costs for the development of a legal contract each time Icon Water is required to contribute to the economic component of a contract.
  - Possible additional compliance costs if key aspects of the contract (i.e. development forecasts) are not realised.

The outcome of the overall assessment against our principles is that:

- Uneconomic portion, case-by-case charging is the most accurate method of charging to greenfield developers, but that it would also incur the highest administrative costs and be unnecessarily complex.
- 100% case-by-case charging is less 'accurate' but is superior in terms of the complexity of its administration, as well as its ability to deal with change and ambiguity in forecasts. This outcome is prior to the additional efficiencies present in the current 'gifted assets' arrangement.

In summary a 100% case-by-case charging option is preferred, based on the above assessment against Icon Water's principles. The following section works through each option from an economic perspective.

### Economic benefits and costs

#### *Overview*

Refer to Ch. 9 for a full discussion of key economic benefits – in short these are:

- Impacts on the level of development
- Impacts on the amount of capital expenditure incurred by Icon Water over time;
- Impacts on the costs of administering the funding arrangements.

Within this context, Table E.1 in **Appendix E** provides an assessment of the costs and benefits relative to a baseline of the current arrangements in which developers that trigger augmentations fund those works and size the infrastructure at the minimum sizing needed to service their development. The reasoning underlying the assessment for each option is outlined in the following chapters.

### Discussion and findings

A scenario that performs well in terms of expected net economic benefits is the scenario in which 100% of costs are levied to developers on a case-by-case basis.

This outcome, as noted in the previous section, is the 'second-best' method for attributing costs to ensure cross-subsidisation is minimised, however is the most optimal in ensuring overall efficiency is maximised. We note that the introduction of uneconomic charging would not change developer behaviour, resulting in no deferred capital expenditure or improvements in capital expenditure efficiency.

Similarly, the marginal net benefits of decreasing granularity would not be positive beyond the case-by-case level, since greenfield estate developments are few in number, and augmentation costs vary significantly with their location.

Each of the alternatives to this scenario has drawbacks.

1. The scenarios in which 100 per cent of capital expenditure is recovered from developers are likely to produce some small levels of cross-subsidisation between user classes; it is Icon Water's view that this is not a material occurrence.
2. The scenarios in which the uneconomic component of capital costs are charged to developers introduce unacceptably high administration and change costs, and do not result in a sufficient change in developer behaviour.
3. The scenario in which Icon Water funds all capital expenditure would result in no change in developer behaviour, and unnecessarily increase tariffs for general water and sewerage customers.

Accordingly Icon Water proposes that a case-by-case 100% charge would represent the best outcome for all parties (Icon Water, the community, and developers). Additionally, as stated above, it is Icon Water's view that a scheme that does not require financial contributions is more efficient.

#### **Icon Water proposed approach based on analysis performed**

Icon Water proposes that the greenfield charge:

- Charge 100% of capital expenditure to developers on a case-by-case basis.
- For practicality, efficiency (and continuity) continue the process of accepting gifted assets as an in-kind method for this contribution.

## 13. Greenfield: How charges are introduced and administered

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The previous chapters identified the costs to be recovered and how the charges are calculated. This chapter investigates a number of issues related to how charges are introduced, implemented and adjusted over time which include:

- Introduction of charges
- Collection of charges
- Definition of and changes to greenfield precinct boundaries
- Accounting treatment
- Regulatory treatment

### **Introduction of charges**

Icon Water is seeking to codify the existing greenfield arrangements to be effective 1 July 2017.

### **Collection of charges**

We propose to continue our existing process; where a developer constructs and then gifts greenfield assets to Icon Water. The current process for greenfield connections (which will not change) is shown in Figure 13.1. This process is already established and has performed well.

## **Definition of and changes to precinct boundaries**

### *Use of precincts in greenfield and brownfield definitions*

Icon Water proposes to utilise the brownfield 'precinct' map to illustrate where greenfield rules apply. Those areas that are not in a precinct are greenfield.

### *Growth of existing and establishment of new precincts*

As new suburbs are developed, they will be added into the brownfield precinct. Icon Water proposes no change to the approach identified in Ch. 10, whereby new greenfield developments are 'added' to the precinct map upon the issue of their Provisional certificate of operations, and the commencement of their Defect liability period.

## **Accounting treatment**

Icon Water will continue to treat all assets contributed as gifted assets, and therefore revenue in its financial statements. This is per recent practise in published financial statements.

Icon Water's dividend policy has recently been refined to exclude profits generated from gifted assets and contributions; this ensures that contributions will be managed by Icon Water until required and not passed through to shareholders.

Any revisions to this accounting approach would be performed as part of Icon Water's internal processes, overseen by the Board and Risk and Audit Committee.

## **Regulatory treatment**

### *Regulatory treatment*

Icon Water proposes to continue its existing policy whereby any gifted assets are netted off against capital expenditure in our regulatory submission.

### *Ongoing interactions between Icon Water and the ICRC*

Icon Water does not propose any changes to its existing pattern of interactions with the ICRC over this code element.

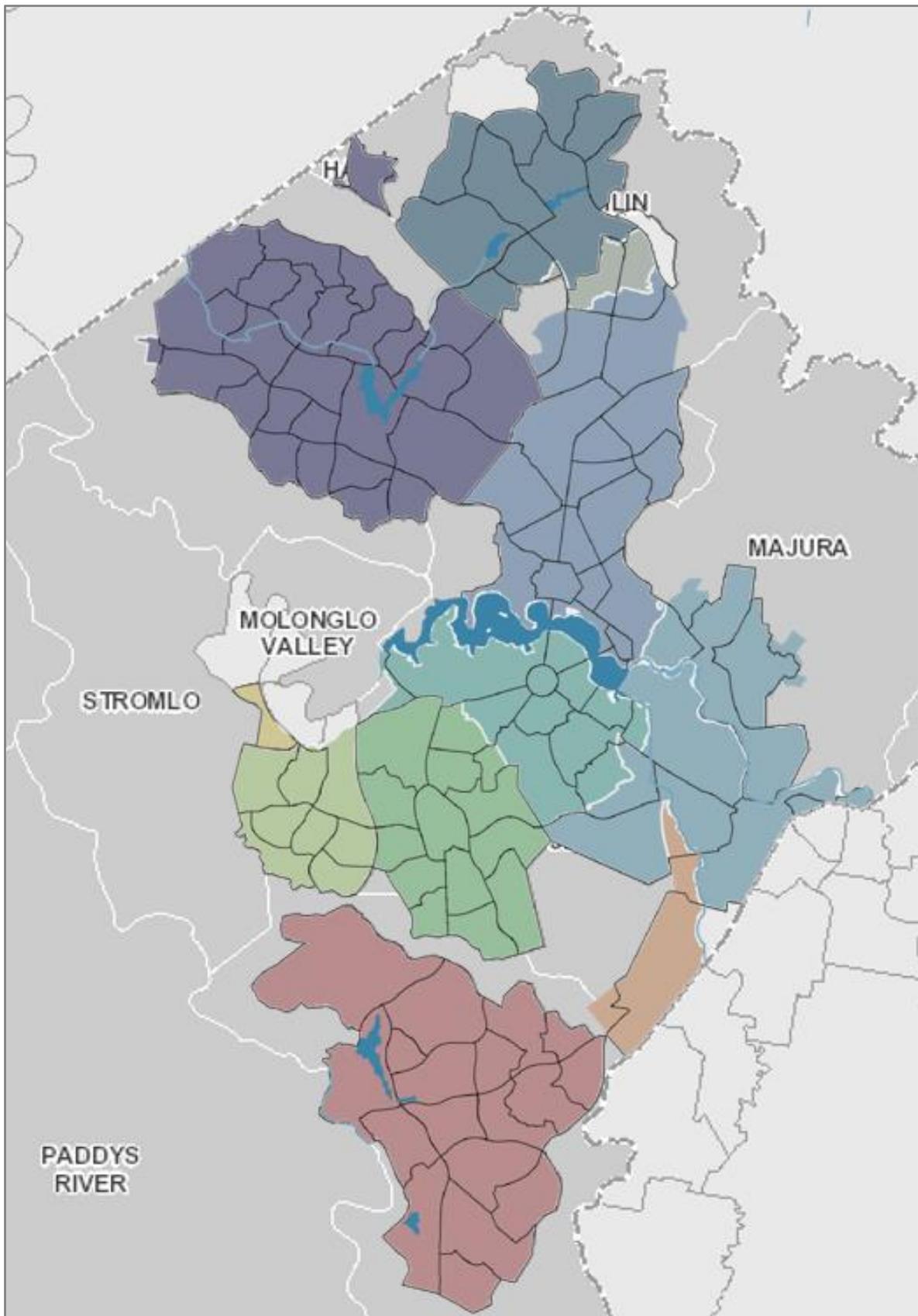
### **Icon Water proposed approach**

Icon Water proposes that the greenfield charge be introduced and implemented with the following characteristics:

- Codified (with no changes) from 1 July 2017.
- Developers levied for 100% of the value of capital expenditure in greenfield developments, payable as the in-kind contribution of these assets to Icon Water.

Figure 13.2: Current draft map showing current greenfield areas.

Please note – greenfield areas are those that shaded in grey in the map below.



# **Part 4: Proposed capital contributions code**

## 14. Proposed code

The main elements of the Code are summarised as the conclusion to the previous two parts. These elements have been consolidated in the form of a proposed Industry Code under Part 4 of the *Utilities Act 2000*.

The proposed Industry Code forms part of the package provided to ICRC and reflects the considerations in the document to date. Table 14.1 below summarises the high-level approach of the Code and its included schedule of charges. The remainder of this information paper considers the likely value of charges, their comparison to other jurisdictions, and our stakeholder consultation process.

Table 14.1: Purpose of the code

Augmentation type	Class 1 Headwork assets	Class 2 Shared assets	Class 3 Reticulation
<b>Greenfield</b>	Codify existing arrangements.	Codify existing arrangements.  <b>Updates the definition of the Class 1 / 2 boundary to modernise language and methodology.</b>	Codify existing arrangements.
<b>Brownfield</b>	Codify existing arrangements.	<b>Introduce new charges to facilitate the brownfield growth of Canberra.</b>	Codify existing arrangements.


DRAFT

**Utilities (Water and Sewerage capital contribution code)  
Determination 2017**

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**Disallowable instrument**

Made under the *Utilities Act 2000*, s59 (*Determined codes*) and s63 (*public access*)

**1. Name of instrument**

This instrument is the *Utilities (Water and Sewerage Capital Contribution Code) Determination 2016*.

**2. Commencement**

This instrument commences the day after it is notified.

DRAFT

**3. Determination of code**

The Commission determines the attached Water and Sewerage Capital Contribution Code.

**4. Public access to documents**

Copies of the Water and Sewerage Capital Contribution Code are available for inspection by members of the public between 9:00 am and 5:00 pm, Monday to Friday, at the Commission's offices at Level 8, 221 London Circuit, Canberra City ACT and on the Commission's website ([www.icrc.act.gov.au](http://www.icrc.act.gov.au)).

Copies of these documents can be made at the Commission's offices. Electronic copies are available on request. No charge will apply.

**Name**

Senior Commissioner  
ICRC, Month Year

## 15. Indicative charges

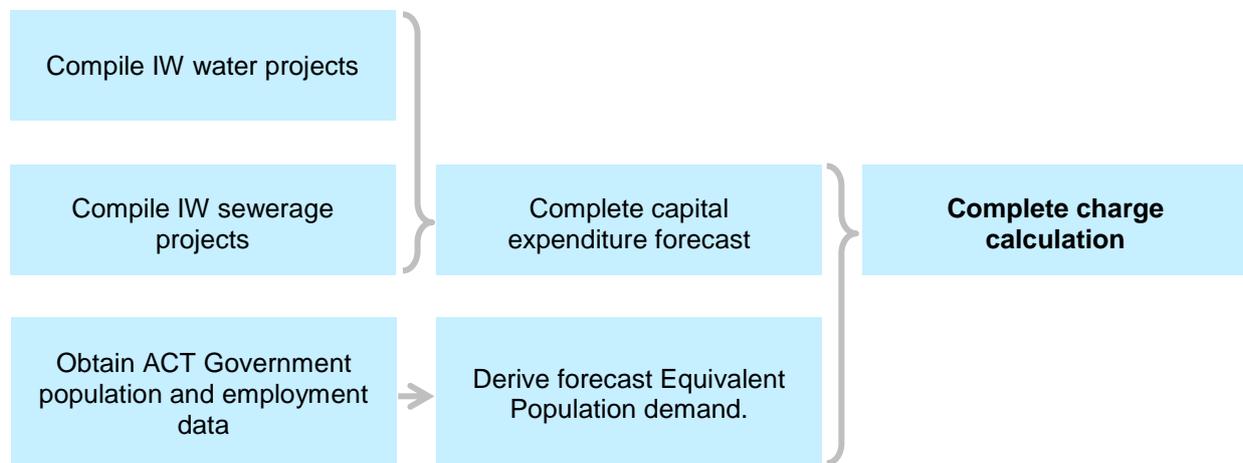
### Overview – Greenfield WSCC charge

Greenfield charges will continue to be levied in line with existing practice; developers will construct and then gift any infrastructure to Icon Water, with this in-kind payment representing the 100% charge. As a result of this no advance calculations are necessary.

### Overview – Brownfield WSCC charge

The key characteristics of the brownfield WSCC scheme proposed by Icon Water have been outlined in the preceding chapters. Based on these elements, the charges are calculated using the broad approach shown in Figure 15.1.

Figure 15.1: Approach to charge calculation



The key steps are as follows:

- Step 1: using a 20 year forecast, establish a forward looking (20 year) capital expenditure plan for Class 2 assets for both water and sewerage for updated brownfield precinct area. Based on the plan 50% is included in the capital expenditure to be recovered
- Step 2: use forward looking (20 year) population and employment forecasts from the ACT Government to calculate of equivalent population (EP)
- Step 3: calculate an NPV charge per EP using an annuity methodology (\$/EP)
- Step 4: apply the \$/EP to specific developments (by residential and commercial type) to establish the total charge payable for each site.

#### Modelling

The detailed decision points and preferred approach are summarised in Table 15.1.

#### Calculating charges

Charges are calculated by multiplying the EP of a particular development by the brownfield precinct charge. Figure 15.2 outlines the calculation of a charge.

Please note that charges are not shown for West Belconnen as this greenfield area is being developed under the current arrangements. Molonglo Valley is similarly small as only established suburbs (i.e. Wright) are included in the precinct map.

### Capital forecasting information and charge per EP

The proposed code includes capital expenditure augmentation forecasts for the next 20 years, these are based on available information. At annual intervals we will recalibrate for revised forecasts and capex augmentation requirements.

As part of our final submission preparation we updated the capital expenditure forecasts which indicates a total spend of \$160m for augmentation will be required over the next 20 years. The updated capital expenditure forecast with a single precinct results in a proposed charge of \$1,200 per EP.

Total scheme collections over the 20 year forecast period will be \$80m (50% of \$160m). When compared to alternative options these charges will place a downwards pressure on customer prices, and marginally assist Icon Water in managing its gearing position.

Please note that Icon Water utilises a detailed population projections released in October each year by the ACT Government to determine what augmentation is required in the water and sewerage network. The ACT Government released updated high level population projections on 13 March 2017 that included some revisions to where population growth is anticipated to occur. The update provided by ACT Government is different to previous versions and does not provide sufficient detail for Icon Water to determine where the distribution of that population growth will occur and refine its capital expenditure estimates accordingly.

Icon Water will look to work with ACT Government to obtain further detailed population projections by the end of October 2017, and make refinements as part of the annual update process. Given Icon Water's proposal now has only one precinct, combined with a 20 year outlook, changes to population projections is expected to only have limited impacts to the proposed EP charge.

Icon Water considers that, at the aggregate level, these forecasts provide a sufficiently accurate growth forecast for the ACT from which a charge can be based.

Table 15.1: Detailed modelling methodology decisions

Decision point	Options considered	Approach
<b>Timeframe</b>	5 years 10 years 20 years Other	20 years is the proposed 'window' for analysis. It is a trade-off between the certainty of capital planning in the near term and the long term capital planning required for efficient capital expenditure planning.
<b>Discount rate</b>	CPI Other	Icon Water has elected to present and price its modelling in nominal terms, accordingly only CPI will be used within.  Icon Water will revisit the discount rate annually as part of its proposed review process.
<b>Geographic area</b>	ACT ACT and surrounds Only the settled or planned parts	Only the developed suburbs to be included.  New developments outside the precinct zones should be addressed on an individual basis as the costs will vary significantly by development location and are generally not included in forward infrastructure plans.  In addition, these suburb-by-suburb greenfield developments are generally undertaken by a developer with the assets gifted to IW.
<b>Number of precincts</b>	1 2 8 13 More	1 precinct was selected based on our connected brownfield network.  A larger number of precincts was reflected to provide true cost allocation within the charge regime.  Icon Water will revisit the number and size of precincts annually as part of its proposed review process.
<b>Population, dwelling and employment projections</b>	ACT Government IW adjusted view	ACT Government population, dwelling and employment projections as they allow consistency of message with developers.
<b>Differentiation of charge by network impact</b>	No differentiation Different charges between estimated impact on peak flow demands, total demands or other factors	No differentiation to maintain simplicity.
<b>Charge method</b>	Per dwelling Connection size Equivalent Population (EP)	Equivalent Population (EP), as outlined in chapter 9.

Figure 15.2: Proposed charges

The total charge will be equal to the **Net increase in EP** multiplied by the **Precinct charge**.

### Net increase in EP

The net increase in EP can be calculated by multiplying (A) and (B) below for the units present for both the original and new developed form, and taking the difference.

Land use	Form	Units (A)	Multiplier (B)
<b>Residential</b>	Free standing houses	Dwellings	3.6
	Semi-detached row and terrace houses	Dwellings	2.5
	Apartments, units, and flats	Dwellings	2.0
<b>Commercial</b>	Shops and offices	Max. # of employees	0.3
	Public visitor or sporting buildings	Max. # of short-stay visitors	0.1
	Restaurants and clubs	Max. # of seats	0.1
	Tourist areas or hospitals	Max. # of beds	0.5
<b>Industrial</b>	Dry trades	Max. # of employees	0.3
	Wet trades	Assessed on a case by case basis	
<b>Institutional</b>	Schools and education	Max. students and staff	0.2

For example:

- An old free-standing house would be 1 (unit) x 3.6 (multiplier), creating 3.6 EP.
- Option 1: Replacing this house with a two-townhouse development would be 2 (units) x 2.5 (multiplier), creating 5 EP. Subtracting the original property leaves us with 1.4 net EP.
- Option 2: Replacing this house with a five shop development with 25 employees would be 25 (employees) x 0.3 (multiplier), creating 7.5 EP. Subtracting the original leaves us with 3.9 net EP.

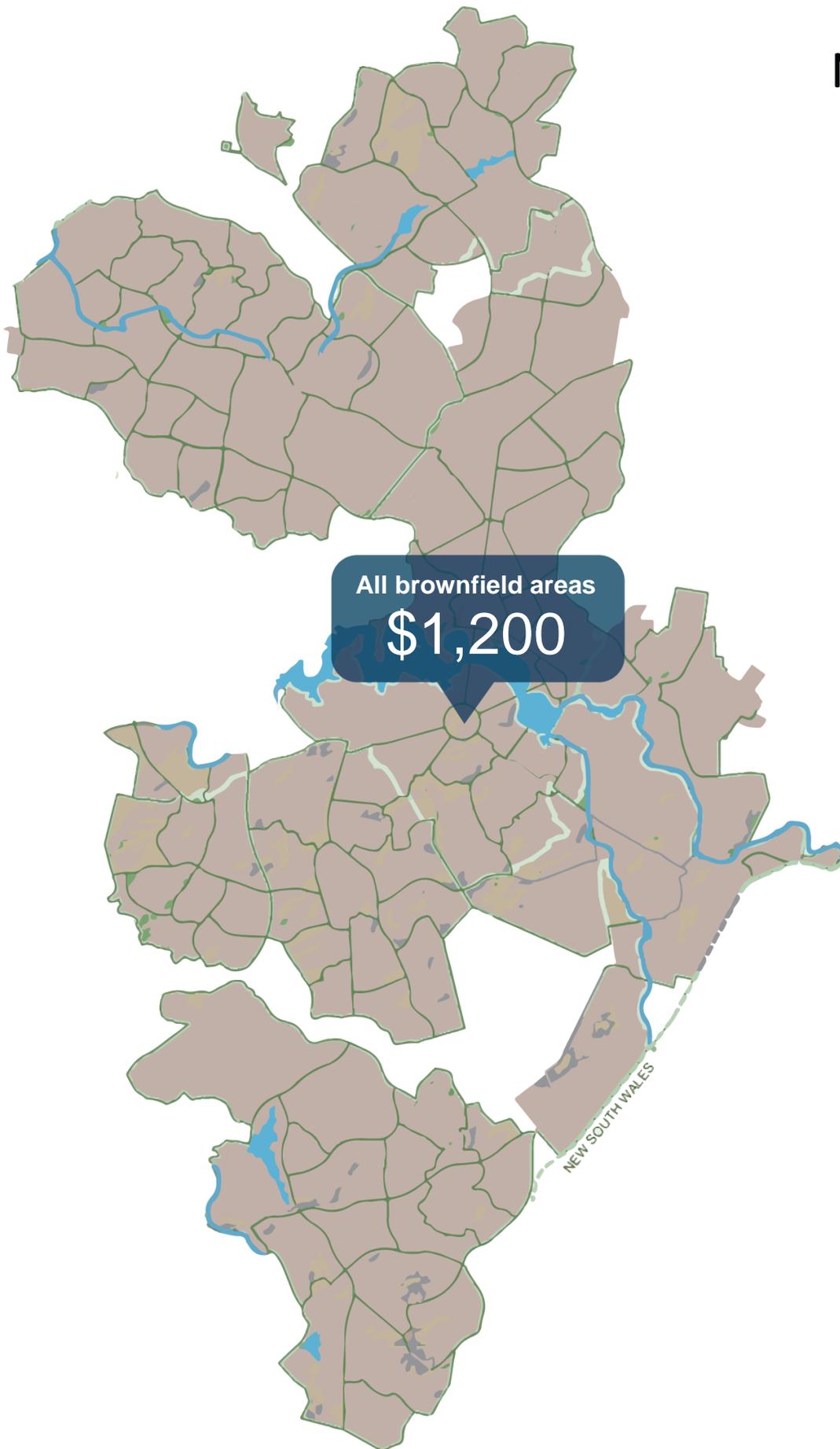
### Precinct charge

Once the net increase in EP is determined it is multiplied by the precinct \$ to determine a charge.

Precinct	Charge
 <b>All brownfield areas</b>	\$1,200

For example:

- A 4 net EP development would cost 4 (EP) x \$1,200 (precinct charge), costing \$4,800 in total. This charge would be levied ahead of connection.



## 16. Analysis of code costs

### Comparison to other jurisdictions

Icon Water's brownfield WSCC charge is a substantial change from existing practice; it is therefore desirable to perform an assessment of its overall impost when compared to other jurisdictions.

Our greenfield scheme is a continuation of existing practice; therefore no assessment has been performed.

The following table provides an overview of infrastructure funding arrangement costs across multiple Australian jurisdictions. It serves as a reasonableness check to ensure that the brownfield charge is comparable across jurisdictions and does not create a general disincentive for development within the ACT.

Please note that the WSCC charge does not vary based on the number of bedrooms; only the number of dwellings is considered. Bedrooms have been specified to enable comparison with other jurisdictions.

Table 16.1 – Comparison of capital contributions costs for a standard two bedroom house

State	Provider	Water	Sewerage	Total
QLD	Queensland Urban Utilities	\$3,300	\$6,700	<b>\$10,000</b>
Vic	Yarra Valley Water	\$668	\$668	<b>\$1,336</b>
	City West Water	\$668	\$668	<b>\$1,336</b>
	Western Water	\$1,043	\$1,043	<b>\$2,086</b>
	South East Water	\$668	\$668	<b>\$1,336</b>
WA	Water Corp.	\$4,064	\$1,363	<b>\$5,427</b>
SA	SA Water	\$2,372	\$4,486	<b>\$6,858</b>
NSW	Sydney Water	Assessed on a case-by-case basis by the entity. Based on anecdotal evidence this can range from \$3,000 to \$15,000 per development depending on the specifics of each charge calculation.		
	Hunter Water			
Tas	TasWater			
NT	PowerWater			

The equivalent charge for a development in the ACT is shown in table 16.2 below.

Table 16.2 – Summary of WSCC charges for a standard two bedroom house (1 x 3.6 net EP)

Precinct	Standard two-bedroom house
All brownfield Canberra	\$4,320

Proposed charges are lower than those seen in Western Australia and South Australia. It is likely that charges for New South Wales, Tasmania, and the Northern Territory would be seen as comparable to the numbers above. Only the Victorian water retailers have charges lower than Icon Water’s proposal – these values have been determined via a political ‘cap’ rather than via a cost recovery process.

Please note that this example is for illustrative purposes only; it is unlikely that an undeveloped block would exist in a brownfield area without an existing EP value.

Table 16.3 – Comparison of WSCC costs for a three townhouse development on a single block (assuming an empty block)

State	Provider	Water	Sewerage	Total
<b>QLD</b>	Queensland Urban Utilities	\$9,900	\$20,100	<b>\$30,000</b>
<b>Vic</b> (Retail)	Yarra Valley Water	\$2,004	\$2,004	<b>\$4,008</b>
	City West Water	\$2,004	\$2,004	<b>\$4,008</b>
	Western Water	\$3,087	\$3,087	<b>\$6,174</b>
	South East Water	\$2,004	\$2,004	<b>\$4,008</b>
<b>WA</b>	Water Corp.	\$5,758	\$3,885	<b>\$9,643</b>
<b>SA</b>	SA Water	\$5,946	\$12,600	<b>\$18,546</b>
<b>NSW</b>	Hunter Water	Assessed on a case-by-case basis by the entity.  Based on anecdotal evidence this can range from \$3,000 to \$15,000 per development depending on the specifics of each charge calculation.		<b>\$3-15,000</b>
<b>Tas</b>	TasWater			<b>\$3-15,000</b>
<b>NT</b>	PowerWater			<b>\$3-15,000</b>

The equivalent charge for a three townhouse development in the ACT ranges is shown in table 16.4 below.

Table 16.4 –WSCC charges for three townhouse developments assuming an empty block (3 x 2.5 net EP)

Precinct	Three townhouse development
<b>All brownfield Canberra</b>	\$9,000

Based on the above analysis it can be seen that the charges being proposed are broadly in line with other Australian states.

We note that other states, as outlined in Chapter 6, vary the costs included in their schemes – additionally the mechanisms used by each utility to collect these revenues also varies. The purpose of this analysis is not to recreate the likely scheme if the proposed WSCC charge was to operate in other states, but to demonstrate that the proposed charges are broadly the same as other jurisdictions.

## Example charges for recent developments across Canberra

This section calculates the hypothetical charge for three recent developments within Canberra; they serve to illustrate the likely charges Icon Water would levy across three brownfield scenarios:

- 350 apartment development in Lyneham, North Canberra.
- Large mixed-use development in the Kingston Foreshore, South Canberra.
- Large mixed-use development in Gungahlin Town Centre, Gungahlin.

The previous examples within this chapter focus on smaller scale redevelopments; these three provide practical examples of large-scale urban redevelopments.

Please note that where Icon Water has been unable to obtain the final built form statistics for the developments estimates have been used. These are denoted with an asterisk (\*). Additionally all examples are assumed to be billed using the proposed schedule of charges within this document.

### Example 1 – 350 apartment development in Lyneham, North Canberra

Form	# of units	Multiplier	EP
Residential: Apartments, units, and flats	350 units	2.0	<b>700</b>
<b>Total number of EP</b>			<b>700</b>

The brownfield charge is \$1,200 per EP; this results in a gross WSCC charge of \$840,000 for the development. Subtracting the 100 EP on-site before development leaves a net EP charge of \$720,000.

### Example 2 – Large mixed-use development in the Kingston Foreshore, South Canberra.

Form	# of units	Multiplier	EP
Residential: Apartments, units, and flats	120 apartments	2.0	<b>240</b>
Commercial: Shops and offices	150 employees	<b>0.3</b>	<b>45</b>
Commercial: Restaurants and clubs	500 seats	<b>0.1</b>	<b>50</b>
<b>Total number of EP</b>			<b>335</b>

The precinct charge for brownfield Canberra is \$1,200 per EP; this results in a total WSCC charge of \$402,000 for the development.

Example 3 – Large mixed-use development in Gungahlin Town Centre, Gungahlin.

Form	# of units	Multiplier	EP
Residential: Apartments, units, and flats	50 apartments	2.0	<b>100</b>
Commercial: Shops and offices	100 employees	<b>0.3</b>	<b>30</b>
Commercial: Restaurants and clubs	600 seats	<b>0.1</b>	<b>60</b>
<b>Total number of EP</b>			<b>190</b>

The precinct charge for Gungahlin is \$1,200 per EP; this results in a total WSCC charge of \$228,000 for the development.

### Likely impact on customer prices

Icon Water has analysed the likely cash collection and expenditure pattern of the overall scheme to determine possible impacts on customer prices. In performing this analysis we have assumed that:

- The proposed regulatory treatment of the scheme in Ch. 10 is accepted and adopted
- That the capital forecasts and revenue collection patterns are accepted and adopted
- That no significant variance to these forecasts occurs over the life of the scheme.

In preparing this analysis we have assumed two separate baseline situations for analysis:

1. Against the 1989 Arrangement, which has a number of ongoing operational issues, or
2. A hypothetical fall-back position where Icon Water would fund 100% of cost through water users' bills (this is not preferred given its poor performance against our principles).

Please note that the impacts on customer prices are phased in over time due to the 'capex offset' model in operation. This means that (as a simplification) 1/60 of the impact of the scheme is brought in each financial year, occurring in increments as each new regulatory period starts.

Example 3 – Impact of scheme on customer bill (on a 200kL bill)

Baseline	Avg. impact (Real \$)	2035-36 impact (Nominal \$)
1 – Against 1989	\$7 each reg. cycle	<b>\$50</b>
2 – Against fall-back	(\$7) each reg. cycle	<b>(\$50)</b>

A maximum possible variance of ~\$100 is therefore possible between best and worst cast options.

## 17. Stakeholder consultation

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### Overview

Icon Water has undertaken extensive stakeholder consultation with the Canberra Community on the WSCC code proposal, and worked to ensure that all viewpoints were recorded and taken into account prior to the finalisation of this submission.

Our feedback was initially planned to occur between December 2016 and early February 2017. Following the receipt of a large amount of feedback, Icon Water approached the Canberra community with an updated proposal in early March and extended consultation by a further month.

### Areas of feedback

Feedback received has been documented and discussed in the Stakeholder report in this pack. Key areas that received feedback included:

- The number of precincts in use for the charge, and the application of the 'equity' principle to these precincts.
- The nature and length of transition arrangements in place for the scheme.
- The granularity of the EP table used in the charge calculation.

Please refer to Attachment C for further information.

### ICRC stakeholder consultation process

When performing stakeholder consultation activities we have communicated that the ICRC will also be performing stakeholder consultation as part of its review process, and that all parties will also have an opportunity to respond when this is performed.

## End notes

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- 1 *Utilities Act 2000*, Division 6.5 (page 75).
- 2 Productivity Commission 2011, *Australia's Urban Water Sector Inquiry Report Vol. 1*, pg 150.
- 3 *NWI Pricing Principles*, pg 9.
- 4 *NWI Pricing Principles*, pg 11.
- 5 Differential pricing may be achieved by upfront contributions, including developer charges.
- 6 Where there are benefits beyond the boundary of the development, the developer charge should have regard to the share of capacity required to serve the development.
- 7 QUU Water Netserv plan
- 8 <http://www.goldcoast.qld.gov.au/water-sewerage-network-services-plan-netserv-plan-16561.html>
- 9 <http://www.unitywater.com.au/netserv>
- 10 <http://www.gosford.nsw.gov.au/building-and-development/da-requirements/water-and-sewer-development-requirements>
- 11 [http://www.citywestwater.com.au/plumbers\\_and\\_developers/land\\_development.aspx](http://www.citywestwater.com.au/plumbers_and_developers/land_development.aspx)
- 12 <http://www.yvw.com.au/easyaccess/knowledgehub/display/LDM/Pricing+Manual>
- 13 <http://www.westernwater.com.au/Building-Renovating-Developing/Developing-land>
- 14 <https://www.sawater.com.au/about-us/legislation-and-policies/policies/pricing-policies/developer-contribution-framework>
- 15 <http://www.watercorporation.com.au/home/builders-and-developers/subdividing/greenfield-subdivisions>
- 16 NEL (version 77 effective 17 December 2015), pg 634
- 17 For example, see: The Centre for International Economics (2009), *Infrastructure charges and new house affordability*, Report prepared for the Residential Development Council, June, p49.  
Huffman, F.E. *et al* (1988), Who Bears the Burden of Development Impact Fees? *Journal of the American Planning Association* 54(1), pp49-55
- 18 Ihlanfeldt, K.R. and Shaughnessy, T.M. Analysis of Urban Land Markets and the Impact of Land Market Regulation, *Regional Science and Urban Economics* 34(6), pp639–661

## Appendix A – Summary of selected water utility capital contribution codes

Table A1: Summary of selected water utility capital contribution codes

Element	Sydney Water	QUU	Yarra Valley Water and City West Water (VIC)	Western Water (VIC)	SA Water	Water Corporation (WA)
<b>Description of scheme</b>	SW fund 100% of trunk infrastructure and any augmentations in its Growth Service Plan (GSP) areas.  Developers pay for reticulation infrastructure.  Charges apply when outside GSP frontier (with reimbursement options included)	QUU fund 100% of trunk infrastructure and augmentation in its Connection Areas.  In Future Connection Areas, 'Adopted Charges' apply based on size of dwelling / number of dwellings / type of activity.  Outside of Future Connection Areas there is a negotiation	ESC sets minimum NCC rates (standard and special rates for particular areas) for all water utilities for standard 20mm connection, as well as providing negotiation framework which utilities may choose to enter if the infrastructure costs are greater than the minimum.	ESC approved rates for brownfield and greenfield areas	SA Water applies state-wide minimum connection charges with additional augmentation charges and negotiations based on principles set out by ESCOSA for special charging zones	Standard Infrastructure Contributions (SIC) apply across the State (with a limited number of special charge zones across the State)
<b>What is the approach to precinct-based charging</b>	GSP and outside GSP	Connection Areas, Future Connection Areas and outside Future Connection Areas	ESC standard areas, ESC special charging areas, negotiated areas	Brownfield and Greenfield	Special Zones which attract costs above the minimum standard	Standard State-wide and Special Charge Zones
<b>Infrastructure costs</b>	Any augmentation required (developer pays directly for trunk infrastructure)	Everything above 200mm pipes (dams, treatment plants, reservoirs, trunk transportation mains, etc)	Distribution assets only, as Melbourne Water manages bulk water supply	All additional service costs, including water supply, distribution and sewage treatment assets		Mains type assets etc
<b>What is the cost (for a typical 3+ bedroom dwelling)</b>	Free in GSP areas, and negotiated case-by-case in other areas	Free in Connection Areas, Future Connection areas are \$14,000 (water - \$4,620; sewerage \$9,380) , anything outside of these two is negotiated	Standard NCC of \$640, with special charge areas having higher costs	Brownfield water and sewer costs \$2,000 per connection, and greenfield costs of \$4,000	Standard connection charge Water: \$2,372 and Sewer: \$4,486	Water \$4,064, Sewerage \$1,368 and drainage \$481
<b>Description of scheme</b>	SW fund 100% of trunk infrastructure and any augmentations in its Growth Service Plan (GSP) areas.  Developers pay for reticulation infrastructure.  Charges apply when outside GSP frontier (with reimbursement options included)	QUU fund 100% of trunk infrastructure and augmentation in its Connection Areas.  In Future Connection Areas, 'Adopted Charges' apply based on size of dwelling / number of dwellings / type of activity.  Outside of Future Connection Areas there is a negotiation	ESC sets minimum NCC rates (standard and special rates for particular areas) for all water utilities for standard 20mm connection, as well as providing negotiation framework which utilities may choose to enter if the infrastructure costs are greater than the minimum.	ESC approved rates for Brownfield and greenfield areas	SA Water applies state-wide minimum connection charges with additional augmentation charges and negotiations based on principles set out by ESCOSA for special charging zones	Standard Infrastructure Contributions (SIC) apply across the State (with a limited number of special charge zones across the State)

## Appendix B – Regulatory framework

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Icon Water has developed the draft Code whilst being mindful of the ICRC's regulatory requirements. This chapter summarises the ICRC's regulatory framework and provides the context for Icon Water's proposal.

### **The ICRC Act**

The objectives of the ICRC as specified in section 7 of the *Independent Competition and Regulatory Commission ACT 1997* are:

- (a) *to promote effective competition in the interests of consumers;*
- (b) *to facilitate an appropriate balance between efficiency and environmental and social considerations;*
- (c) *to ensure non-discriminatory access to monopoly and near monopoly infrastructure.*

### **Utilities Act**

Icon Water is looking to introduce an industry code under Part 4 of the *Utilities Act 2000*. The ICRC's objects under the Utilities Act are as follows:

- (a) *to encourage the provision of safe, reliable, efficient and high quality utility services at reasonable prices;*
- (b) *to minimise the potential for misuse of monopoly power in the provision of utility services;*
- (c) *to promote competition in the provision of utility services;*
- (d) *to encourage long-term investment, growth and employment in utility service industries;*
- (e) *to promote ecologically sustainable development in the provision of utility services;*
- (f) *to protect the interests of consumers;*
- (g) *to ensure that advice given to ICRC by the ACAT is properly considered;*
- (h) *to ensure the Government's programs about the provision of utility services are properly addressed;*
- (i) *to give effect to directions of the Minister under section 19.*

## ICRC pricing review principles

In its recent pricing review the ICRC established a series of seven pricing review principles. While not directly applying to this discussion paper they are relevant and indicative of contemporary thinking on pricing:

1. *Tariff structures and prices should promote the economically efficient use of Icon Water's water and sewerage services infrastructure, and in the case of water should also encourage economically efficient use of the water resource.*
2. *Tariff structures and prices should reflect the full recovery of the prudent and efficient costs of providing regulated water and sewerage services to ensure business viability.*
3. *Tariff structures and prices should facilitate the recovery of Icon Water's allowed revenue over the regulatory period.*
4. *Tariff structures should be robust enough to promote the economically efficient use of Icon Water's water and sewerage services infrastructure over a reasonable period of time*
5. *Any change to the structure of tariffs and prices that will have substantial customer impacts should be phased in over a transition period to allow customers reasonable time to adjust to the change.*
6. *Tariff structures should be simple for customers to understand and straightforward for the utility to implement.*
7. *Tariffs should be set using a transparent methodology and subject to public consultation and scrutiny*

## Appendix C – Asset class list for WSCC

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*Note – this list has been extracted from the accompanying proposed WSCC industry code. Please refer to this document for further information.*

- (1) “**Class 1 Infrastructure**” means large scale headwork assets required by a **Utility** in order to provide services to **Customers** including:
- a. for a **Water Utility**, works relating to provision of the following infrastructure:
    - i. dams, weirs and associated assets;
    - ii. raw water pumping stations, pipelines and associated assets (upstream of a treatment plant);
    - iii. water treatment plants;
    - iv. bulk supply mains that feed the first reservoir or pressure management infrastructure from the treatment plant (pump station or valve farm);
    - v. any other infrastructure the **Water Utility** deems to be headwork assets;
  - b. for a **Sewerage Utility**, works relating to provision of the following infrastructure:
    - i. gravity sewers that are 750mm diameter or greater and associated assets (including ventilation systems, etc);
    - ii. sewerage treatment plants and associated assets;
    - iii. treated effluent outfalls and associated assets; or
    - iv. any other infrastructure the **Sewerage Utility** deems to be headwork assets.
- (2) “**Class 2 Infrastructure**” means the shared assets that are not Class 1 Infrastructure or Class 3 Infrastructure and which are required by a **Utility** to provide services to one or more **Customers** in connection with one or more Developments, including:
- a. for a **Water Utility**, works relating to provision of the following infrastructure:
    - i. water mains downstream of Class 2 Infrastructure and greater than 200mm diameter and associated assets
    - ii. water reservoirs and pressure management systems;
    - iii. water pumping stations and associated assets that are deployed on Class 1 Infrastructure and Class 2 Infrastructure pipe assets or feeding from Class 3 Infrastructure to a water reservoir in another pressure zone;
    - iv. any other infrastructure the **Water Utility** deems to be shared assets;
  - b. for a **Sewerage Utility**, works relating to provision of the following infrastructure:
    - i. sewers that are between 300mm diameter and 750mm diameter and associated assets (including ventilation systems, etc);
    - ii. sewage pumping stations and associated assets;
    - iii. emergency storage and flow attenuation tanks and associated assets;
    - iv. any other infrastructure the **Sewerage Utility** deems to be shared assets.
- (3) “**Class 3 Infrastructure**” means the reticulation assets required by a **Water Utility** or a **Sewerage Utility** to connect a **Customer** to water and sewerage services including:
- a. for a **Water Utility**, works relating to provision of the following infrastructure:
    - i. water mains that are 200mm or less in diameter;
    - ii. water pumping stations and associated assets that do not meet the Class 2 Infrastructure definition;
    - iii. pressure reducing assets on the Water Utility’s Class 3 Infrastructure;

- iv. onsite assets including water tanks and associated assets; or
  - v. any other infrastructure the **Water Utility** deems to be reticulation assets; or
- b. for a **Sewerage Utility**, works relating to provision of the following infrastructure:
- i. sewers that are less than 300mm in diameter;
  - ii. onsite assets including sewage storage capacity and internal sewage pumping stations; or
  - iii. any other infrastructure the **Sewerage Utility** deems to be reticulation assets.

Notes:

These definitions are for the purpose of Water and Sewerage Capital Contributions only.

- All size specifications imply capacity equivalent for the purposes of duplication upgrades.
- All size specifications are in nominal diameters
- All proposed sizing in design must be fit and suitable for purpose, adhering to Icon Water standards and the design intent for the asset

## **Appendix D – Cost-benefit analysis of brownfield options**

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This section contains an economic analysis of available brownfield charging options and provides support to the considerations present in Ch. 19.

▲ / ▼ = Improved / worsening impact vs baseline  
 ↑ / ↓ = Assessment of higher / lower impact on costs

Table D.1: Assessment of brownfield funding models

Developer charge	Level of granularity	Augmentation sizing	Level of development <i>f(charge)</i>	Icon Water capex <i>f(sizing, location and level of development)</i>	Admin cost <i>f(granularity)</i>	Impact on network charges (relative to baseline)	Impact on total amount paid by developers <sup>a</sup>	Ref.
		Sequential minimum increments	Baseline			Baseline		BL
<b>Current charge v1</b> If augmentation triggered, 100% of the minimum capex. Otherwise, zero.	Case by case		▲ Charge imposed less frequently	▲▲ More efficient sizing	▼	↑↑ Some augmentation costs would be recovered in tariffs	↓↓ Fewer augmentations required and charges <100% capex	A
<b>Current charge v2</b> If augmentation triggered, 100% of the optimal capex. Otherwise, zero.			▼ Increased charge, albeit imposed less frequently	▲▲▲ More efficient sizing and stronger location signal	-	↑ Lower development	↓ Fewer augmentations required	B
<b>100% capex shared</b> Optimal capex, shared across forecast developments within the level of granularity.	ACT-wide	Optimal	- Large charge reduction for triggering developments, and small charge increase otherwise	▲ More efficient sizing, but no location price signal	▲▲	-	↓	C
	Precincts		-	▲▲ More efficient sizing	▲	-	↓	D
<b>Uneconomic component shared</b> Maximum of zero or optimal capex plus PV of opex less PV of revenue, shared across forecast developments within the level of granularity.	ACT-wide		▲ Lower charge than '100% capex' scenarios above	▲	▲▲	↑ Tariffs would be held constant (rather than decreasing as in the baseline)	↓↓↓↓ Fewer augmentations required and charges significantly <100% capex	E
	Precincts		▲	▲▲	▲	↑	↓↓↓↓	F
	Case by case		▲	▲▲	-	↑	↓↓↓↓	G
<b>No charge</b> Zero.	n/a		▲▲	- More efficient sizing, but increased development and no location price signal	▲▲▲	↑↑↑↑ All augmentation recovered in tariffs	↓↓↓↓↓ No charges	H

*A: Current charge with optimal augmentation sizing*

Level of development	Icon Water capex	Admin cost	Impact on network charges	Impact on total amount paid by developers
▲	▲▲	▼	↑↑	↓↓
Charge imposed less frequently	More efficient sizing	-	Some augmentation costs would be recovered in tariffs	Fewer augmentations required and charges <100% capex

Option A in Table D.1 refers to an approach in which Icon Water requires optimal sizing of augmentations to account for expected future development, but still requires that the developer pay only the amount that would have been required to install the minimum sizing for their development.

This approach would lead to reductions in Icon Water capex due to optimal sizing of augmentations and the consequent reduction in the number of augmentation projects. It may also lead to a minor increase in development, since the developer charge would be applied less frequently.

Administrative costs may increase relative to current arrangements, since negotiation may be required with respect to the nature and cost of the hypothetical minimum sizing on which the charge would be based.

Network tariffs would be higher than in the baseline scenario, since some augmentation costs would be funded through tariffs, though tariffs may still decrease relative to current tariffs. The amount funded by developers, which is likely to put upward pressure on house prices, would be lower than under the baseline scenario, since the augmentation capex to be recovered would be lower and developers would be required to fund only a portion of that capex.

*B: Triggering developer pays for optimally-sized augmentation*

Level of development	Icon Water capex	Admin cost	Impact on network charges	Impact on total amount paid by developers
▼	▲▲▲	-	↑	↓
Increased charge, albeit imposed less frequently	More efficient sizing and stronger location signal	-	Lower development	Fewer augmentations required

Option B in Table D.1 refers to an approach in which Icon Water requires optimal sizing of augmentations to account for expected future development and requires the triggering developer to pay for that augmentation.

This approach is likely to reduce augmentation expenditure both due to more efficient sizing and due to the high charge faced by triggering developers. However, this approach is likely to reduce the level of development. Importantly, some development that is valued above cost may not proceed. Administrative costs would be similar to current arrangements, with triggering developments dealt with on a case-by-case basis.

Distributional effects would be limited, though the reduction in the level of development may increase water and sewerage tariffs (due to fixed costs being spread over fewer customers) and decrease the overall amount paid by developers.

*C: 100% of capex shared via an ACT-wide charge*

Level of development	Icon Water capex	Admin cost	Impact on network charges	Impact on total amount paid by developers
-	▲	▲▲	-	↓
Large charge reduction for triggering developments, and small charge increase otherwise	More efficient sizing, but no location price signal	-	-	-

Option C in Table D.1 refers to an approach in which Icon Water requires optimal sizing of augmentations and spreads the associated capital expenditure across all developments, both triggering and non-triggering, via a charge per connection applied on a postage stamp basis across the ACT.

The impact of this approach on the level of development is unclear. Triggering developments would see a significant reduction in the charge, which would tend to increase development, but non-triggering developments would pay a charge where they otherwise wouldn't have, which could lead to some very marginal developments not proceeding.

The reduction in augmentation capital expenditure under this scenario may be relatively small. The optimal sizing of augmentations will reduce expenditure significantly, but this reduction will be offset to some extent by the effects of removing the locational price signal, since developers would no longer have an incentive to defer or alter developments that trigger augmentation.

Administrative costs would likely be lower when applying a per connection charge on a postage stamp basis rather than applying the case-by-case negotiation in the baseline scenario.

There would be no impact on general tariffs relative to the baseline scenario, since augmentation costs are being fully funded by developers in either case. The total amount paid by developers will decrease if augmentation capital expenditure decreases. Impacts on land and/or housing prices would be spread across all developments, rather than on triggering developments.

*D: 100% of capex shared via a charge varying by precinct*

Level of development	Icon Water capex	Admin cost	Impact on network charges	Impact on total amount paid by developers
-	▲▲	▲	-	↓
-	More efficient sizing	-	-	-

Option D in Table D.1 refers to an approach in which Icon Water requires optimal sizing of augmentations and spreads the associated capital expenditure across all developments, both triggering and non-triggering, via a charge per connection that varies across several precincts in the ACT.

As with the postage stamp variant of this approach discussed above, the impact on the level of development is unclear. Augmentation capital expenditure would be reduced under this scenario, due to the optimal sizing of augmentations. Developers would still have an incentive to avoid locating in areas with limited excess capacity. Administrative costs would likely be lower than the case-by-case negotiation in the baseline scenario, but slightly higher than the postage stamp variant of this scenario.

The distributional effects would be similar to the postage stamp variant of this scenario discussed above, except that impacts on land and/or housing prices would be more similar to the baseline, with impacts tending to arise in areas with limited network capacity.

*E: Uneconomic component shared via an ACT-wide charge*

Level of development	Icon Water capex	Admin cost	Impact on network charges	Impact on total amount paid by developers
▲	▲	▲▲	↑	↓↓↓
Lower charge than '100% capex' scenarios above	-	-	Tariffs would be held constant (rather than decreasing as in the baseline)	Fewer augmentations required and charges significantly <100% capex

Option E in Table D.1 refers to an approach in which Icon Water requires optimal sizing of augmentations and applies a 'per connection' charge on a postage stamp basis to recover the difference between the present value of the network expenditure, both capital and operating, that would be avoided in the absence of forecast development and the present value of the ongoing network charges that customers in forecast developments would expect to pay over time.

Developer charges under this scenario are likely to be significantly lower than those under the '100% of capex' scenarios discussed above, since incremental operating costs are likely to be well below expected network charges for new customers.

While the impact on development relative to the baseline scenario isn't entirely clear, the level of development under this scenario would be greater than under the '100% of capex' charges described above.

As with the ACT-wide charge based on 100% of capex discussed above, the reduction in augmentation capital expenditure under this scenario may be relatively small, with the benefits of optimal sizing offset by costs of removing price signals. Similarly, administrative costs would likely be lower than in the baseline scenario, since the introduction into the charging model of the calculation of the uneconomic component adding only a small cost.

By construction, general tariffs will remain constant when developer charges are based on the uneconomic component. Therefore, general tariffs will be higher under this scenario than under the baseline scenario (since general tariffs would decrease in the baseline scenario).

The total amount paid by developers would be lower under this scenario than under the baseline or any of the other scenarios discussed above, since developers would be contributing significantly less than the total capital cost of augmentation projects. Impacts on land and/or housing prices would be spread across all developments, rather than on triggering developments.

*F: Uneconomic component shared via a charge varying by precinct*

Level of development	Icon Water capex	Admin cost	Impact on network charges	Impact on total amount paid by developers
▲	▲▲	▲	↑	↓↓↓
-	-	-	-	-

Option F in Table D.1 refers to an approach in which Icon Water requires optimal sizing of augmentations and applies a ‘per connection’ charge that varies across precincts to recover the uneconomic component.

As with the postage stamp variant discussed above, the impact on development relative to the baseline scenario isn’t entirely clear, but the level of development would be greater than under the scenarios in which charges recover 100% of augmentation capital costs.

Augmentation capital expenditure would be reduced under this scenario, due to the optimal sizing of augmentations. Developers would still have an incentive to avoid locating in areas with limited excess capacity. Administrative costs would likely be lower than the case-by-case negotiation in the baseline scenario, but slightly higher than the postage stamp variant of this scenario.

The distributional effects would be similar to the postage stamp variant of this scenario discussed above, except that impacts on land and/or housing prices would be more similar to the baseline, with impacts tending to arise in areas with limited network capacity.

*G: Uneconomic component shared via a charge varying on a case-by-case basis*

Level of development	Icon Water capex	Admin cost	Impact on network charges	Impact on total amount paid by developers
▲	▲▲		↑	↓↓↓
-	-	-	-	-

Option G in Table D.1 refers to an approach in which Icon Water requires optimal sizing of augmentations and applies a ‘per dwelling’ charge that varies on a case-by-case basis to recover the uneconomic component.

The economic costs and benefits and distributional effects of this scenario are similar to the precinct variant discussed above, except that there would be significantly higher administrative costs associated with operating the scheme on a case-by-case basis.

There may be some benefits arising from the increased granularity in terms of increased development and reduced augmentation capital expenditure, but these are judged to be minor, since augmentation costs would not vary significantly across locations within a given precinct, at least for the sewerage network to which the majority of forecast augmentation work relates.

*H: No charge*

Level of development	Icon Water capex	Admin cost	Impact on network charges	Impact on total amount paid by developers
▲ ▲	-	▲ ▲ ▲	↑ ↑ ↑	↓ ↓ ↓ ↓
-	More efficient sizing, but increased development and no location price signal	-	All augmentation recovered in tariffs	No charges

Option H in Table D.1 refers to an approach in which Icon Water requires optimal sizing of augmentations and funds the associated capital expenditure through network tariffs.

This option maximises the level of development, since the charge faced by developers is zero. However, it is not clear that the level of augmentation capital expenditure would be any lower than under the baseline scenario, since developers would have no incentive to locate, size or sequence their developments so as to minimise augmentation costs. Administrative costs would be lower under this scenario than under any of the other scenarios discussed above.

Network tariffs would be significantly higher than the baseline scenario and would increase relative to current levels. The total amount paid by developers, at zero, would be lower than under the baseline scenario or any of the other scenarios discussed above.

## **Appendix E – Cost-benefit analysis of greenfield options**

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This section contains an economic analysis of available greenfield charging options and provides support to the considerations present in Ch. 12.

▲ / ▼ = Improved / worsening impact vs baseline  
 ↑ / ↓ = Assessment of higher / lower impact on costs

Table E.1: Assessment of greenfield funding models

Developer charge	Level of granularity	Augmentation sizing	Level of development <i>f (charge)</i>	Icon Water capex <i>f (sizing, location and level of development)</i>	Admin cost <i>f (granularity)</i>	Impact on network charges (relative to baseline)	Impact on total amount paid by developers <sup>a</sup>	Ref.
<b>Current charge</b> 100% of capital expenditure incurred paid for by developer and gifted to Icon Water	Case by case		Baseline			Baseline		<b>BL</b>
<b>Current charge with aggregation</b> 100% of capital expenditure incurred paid for by developer and gifted to Icon Water, apportioned over forecast developments within the specified level of granularity	Precincts	Optimal <i>(as Icon Water has power to set requirements)</i>	- Charge will not impact timing or sequence of developments	- Icon Water will continue to set capex requirements	▼▼	- No change	- No change – some immaterial allocation variances	<b>A</b>
	ACT wide		- Charge will not impact timing or sequence of developments	- Icon Water will continue to set capex requirements	▼▼	- No change	- No change –some immaterial allocation variances	<b>B</b>
<b>Uneconomic component shared</b> Maximum of zero, or capital expenditure incurred plus the present value of operating expenditure, less the present value of revenue, shared across forecast developments within the specified level of granularity	Case by case		- Charge will not impact timing or sequence of developments	- Icon Water will continue to set capex requirements	▼▼▼	Some augmentation costs would be recovered in tariffs	↓ Increase in costs recovered through tariffs	<b>C</b>
	Precincts		- Charge will not impact timing or sequence of developments	- Icon Water will continue to set capex requirements	▼▼▼▼	Some augmentation costs would be recovered in tariffs	↓ Increase in costs recovered through tariffs	<b>D</b>
	ACT wide		- Charge will not impact timing or sequence of developments	- Icon Water will continue to set capex requirements	▼▼▼▼	Some augmentation costs would be recovered in tariffs	↓ Increase in costs recovered through tariffs	<b>E</b>
<b>No charge</b> Zero	n/a			- Charge will not impact timing or sequence of developments	- Icon Water will continue to set capex requirements	▼▼	↑↑↑ All augmentation recovered in tariffs	↓↓↓ No charges

*A: Current charge with precinct aggregation*

Level of development	Icon Water capex	Admin cost	Impact on network charges	Impact on total amount paid by developers
-	-	▼▼	-	-
Charge will not impact timing or sequence of developments	Icon Water will continue to set capex requirements	-	No change	No change – some immaterial allocation variances

Option A in Table E.1 refers to an approach in which Icon Water requires that all developers in a precinct pay for 100% of their capital expenditure on a greenfield estate, with optimal sizing of assets, and allocated to individual parties based on an assessment of capital requirement.

This approach would not change the level of capital expenditure incurred, as Icon Water currently reviews and approves all greenfield capital expenditure as part of technical utility design standards. Additionally it is unlikely that the level of development would increase, as its timing and sequence is generally mandated through government policy; the charge for water and sewerage infrastructure is a minor component of overall costs.

Administrative costs may increase relative to current arrangements, since additional data and calculations regarding the future level of capex and its allocation would be required (on which the charge would be based).

Network tariffs would not change as the level of charging is held constant with the baseline.

*B: Current charge with ACT-wide aggregation*

Level of development	Icon Water capex	Admin cost	Impact on network charges	Impact on total amount paid by developers
-	-	▼▼	-	-
Charge will not impact timing or sequence of developments	Icon Water will continue to set capex requirements	-	No change	No change – some immaterial allocation variances

Option B in Table E.1 refers to an approach in which Icon Water requires that all developers in an ACT-wide area pay for 100% of their capital expenditure on a greenfield estate, with optimal sizing of assets, and allocated to individual parties based on an assessment of capital requirement.

This approach would not change the level of capital expenditure incurred, as Icon Water currently reviews and approves all greenfield capital expenditure as part of technical utility design standards. Additionally it is unlikely that the level of development would increase, as its timing and sequence is generally mandated through government policy; the charge for water and sewerage infrastructure is a minor component of overall costs.

Administrative costs may increase relative to current arrangements, since additional data and calculations regarding the future level of capex and its allocation would be required (on which the charge would be based).

Network tariffs would not change as the level of charging is held constant with the baseline.

*C: Uneconomic component calculated on a case-by-case basis*

Level of development	Icon Water capex	Admin cost	Impact on network charges	Impact on total amount paid by developers
-	-	▼▼▼	↑	↓
Charge will not impact timing or sequence of developments	Icon Water will continue to set capex requirements	Bespoke uneconomic calculations	Some augmentation costs would be recovered in tariffs	Increase in costs recovered through tariffs

Option C in Table E.1 refers to an approach in which Icon Water seeks to charge developers on some basis to recover the difference between the present value of the network expenditure, both capital and operating, that would be avoided in the absence of forecast development and the present value of the ongoing network charges that customers in forecast developments would expect to pay over time.

Developer charges under this scenario are likely to be lower than those under the '100% of capex' scenarios discussed above, since incremental operating costs are likely to be well below expected network charges for new customers.

This approach would not change the level of capital expenditure incurred, as Icon Water currently reviews and approves all greenfield capital expenditure as part of technical utility design standards. Additionally it is unlikely that the level of development would increase, as its timing and sequence is generally mandated through government policy; the charge for water and sewerage infrastructure is a minor component of overall costs.

It is likely that the introduction of this option would incur material additional administrative operating costs to Icon Water, due to the difficulty in forecasting and administering such a scheme.

By construction, general tariffs will remain constant when developer charges are based on the uneconomic component. Therefore, general tariffs will be higher under this scenario than under the baseline scenario (since general tariffs would decrease in the baseline scenario).

The total amount paid by developers would be lower under this scenario than under the baseline or any of the other scenarios discussed above, since developers would be contributing significantly less than the total capital cost of augmentation projects.

*D: Uneconomic component calculated on a precinct basis*

Level of development	Icon Water capex	Admin cost	Impact on network charges	Impact on total amount paid by developers
-	-	▼▼▼▼	↑	↓
Charge will not impact timing or sequence of developments	Icon Water will continue to set capex requirements	Multiple uneconomic calculations and timing considerations	Some augmentation costs would be recovered in tariffs	Increase in costs recovered through tariffs

Option D in Table E.1 refers to an approach in which Icon Water seeks to charge developers on an allocated precinct by precinct basis to recover the difference between the present value of the network expenditure, both capital and operating, that would be avoided in the absence of forecast development and the present value of the ongoing network charges that customers in forecast developments would expect to pay over time.

Developer charges under this scenario are likely to be lower than those under the '100% of capex' scenarios discussed above, since incremental operating costs are likely to be well below expected network charges for new customers.

This approach would not change the level of capital expenditure incurred, as Icon Water currently reviews and approves all greenfield capital expenditure as part of technical utility design standards. Additionally it is unlikely that the level of development would increase, as its timing and sequence is generally mandated through government policy; the charge for water and sewerage infrastructure is a minor component of overall costs.

It is likely that the introduction of this option would incur the highest additional administrative operating costs of all options to Icon Water, due both the aforementioned difficulty in forecasting, and the additional introduction of precinct models to consider the impact of all greenfield developments.

By construction, general tariffs will remain constant when developer charges are based on the uneconomic component. Therefore, general tariffs will be higher under this scenario than under the baseline scenario (since general tariffs would decrease in the baseline scenario).

The total amount paid by developers would be lower under this scenario than under the baseline or any of the other scenarios discussed above, since developers would be contributing significantly less than the total capital cost of augmentation projects.

*E: Uneconomic component shared via an ACT-wide charge*

Level of development	Icon Water capex	Admin cost	Impact on network charges	Impact on total amount paid by developers
-	-	▼▼▼▼	↑	↓
Charge will not impact timing or sequence of developments	Icon Water will continue to set capex requirements	Multiple uneconomic calculations and timing considerations	Some augmentation costs would be recovered in tariffs	Increase in costs recovered through tariffs

Option F in Table E.1 refers to an approach in which Icon Water seeks to charge developers on an allocated ACT-wide basis to recover the difference between the present value of the network expenditure, both capital and operating, that would be avoided in the absence of forecast development and the present value of the ongoing network charges that customers in forecast developments would expect to pay over time.

Developer charges under this scenario are likely to be lower than those under the '100% of capex' scenarios discussed above, since incremental operating costs are likely to be well below expected network charges for new customers.

This approach would not change the level of capital expenditure incurred, as Icon Water currently reviews and approves all greenfield capital expenditure as part of technical utility design standards. Additionally it is unlikely that the level of development would increase, as its timing and sequence is generally mandated through government policy; the charge for water and sewerage infrastructure is a minor component of overall costs.

It is likely that the introduction of this option would incur the highest additional administrative operating costs of all options to Icon Water, due both the aforementioned difficulty in forecasting, and the additional introduction of precinct models to consider the impact of all greenfield developments.

By construction, general tariffs will remain constant when developer charges are based on the uneconomic component. Therefore, general tariffs will be higher under this scenario than under the baseline scenario (since general tariffs would decrease in the baseline scenario).

The total amount paid by developers would be lower under this scenario than under the baseline or any of the other scenarios discussed above, since developers would be contributing significantly less than the total capital cost of augmentation projects.

*F: No charge*

Level of development	Icon Water capex	Admin cost	Impact on network charges	Impact on total amount paid by developers
▲▲	-	▲▲▲	↑↑↑	↓↓↓↓
-	More efficient sizing, but increased development and no location price signal	-	All augmentation recovered in tariffs	No charges

Option F in Table E.1 refers to an approach in which Icon Water requires optimal sizing of augmentations and funds the associated capital expenditure through network tariffs.

This approach would not change the level of capital expenditure incurred, as Icon Water currently reviews and approves all greenfield capital expenditure as part of technical utility design standards. Additionally it is unlikely that the level of development would increase, as its timing and sequence is generally mandated through government policy.

Administrative costs would be incrementally higher due to the necessary forecasting, validation, and financing processes required when paying a developer for built infrastructure.

Network tariffs would be significantly higher than the baseline scenario and would increase relative to current levels. The total amount paid by developers, at zero, would be lower than under the baseline scenario or any of the other scenarios discussed above.

## Appendix G – Break-down of charges

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The break-down of the precinct charge between Icon Water's water and sewerage networks is as follows, on a per-EP basis. This schedule should be read in conjunction with the full schedule of charges and explanatory notes in Chapter 10. Please note that all numbers have been rounded to the nearest \$100 for ease of presentation.

Precinct	Water	Sewerage	Total charge
 <b>Brownfield Canberra</b>	\$100	\$1,100	<b>\$1,200</b>

## Appendix H – Discussion of uneconomic / economic approaches to charge setting

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### Theoretical overview

*Please note – this has previously been submitted to the ICRC as 'The interaction between capital contributions and regulated water and sewerage services prices'.*

#### Summary

The purpose of capital contributions is to ensure that new brownfield customers pay for the **net incremental costs** of connecting them to the network. This achieves two things: first, it ensures that no additional costs are imposed on existing Icon Water customers, and second, it provides a cost-reflective price signal to prospective customers.

Putting this into practice requires that the capital contribution amount reflect the incremental costs caused by new brownfield customers, **minus** any incremental revenue from the new connection. **Incremental** refers to the difference between a baseline scenario where the brownfield development does not take place and an alternative scenario where the brownfield development does take place. As a result, incremental costs (revenue) are costs (revenue) that would not have been incurred to serve (earned from) the existing customer base.

Using what the AER refers to as the cost-revenue test, the capital contribution charge can therefore be calculated as:

- incremental costs – the incremental capital and operating costs to connect and service the new brownfield customers; minus
- incremental revenue – the portion of the incremental costs that Icon Water expects to recover from the new customers through water and sewerage bills over a 20 year forward period – subtracting this amount from the incremental costs ensures that Icon Water is not recovering the same costs twice from these customers.

A capital contribution charge calculated on this basis represents the efficient net incremental cost of providing water and sewerage related services to the new brownfield development.

This means that the new customers, via the developer, having paid for the net incremental costs of connecting to the network, can now be treated like any other customer for pricing purposes, using the standard building-block revenue method.

#### Capital contributions in practice

##### *Calculating capital contributions*

In pursuit of an administratively simple and cost-effective capital contributions regime, Icon Water is proposing to apply an **average** net incremental cost approach across the entire ACT (rather than calculating capital contributions site by site).

This can be calculated as follows:<sup>2</sup>

$$CC = NPV(IC + IO - IR)$$

$$IR = \text{average high density water and sewerage bill} \times \text{incremental customers}$$

Where:

$$CC > 0$$

CC = capital contribution amount

IC = incremental capital expenditure

IO = incremental operating expenditure

IR = incremental revenue.

Applying this cost-revenue test formula to all potential brownfield developments across the ACT over the next 20-years, using a discount rate of 4.59 per cent (the current real weighted-average cost of capital), generates the following result:

$$CC = \$198m$$

This capital contribution amount for the entire ACT is then divided by the net present value of the incremental capital expenditure over the 20-year period, which is \$421m. This gives the current proportion of brownfield augmentation costs that should be recovered **on average** from new brownfield customers (through developers) in the form of capital contributions, to avoid a shortfall in revenue that would need to be recovered from other customers.

This calculation yields a figure of 48 per cent which is rounded up to 50 per cent for ease of computation and understanding by developers.

### Water and sewerage pricing

The following mechanism then applies for pricing purposes, using Icon Water's standard building-block revenue model:

- Incremental brownfield customers are added to the total water and sewerage customer numbers and volumes forecasts are updated over time to account for incremental increases in water usage.
- Gross capital expenditure is added to the water and sewerage RABs and capital contributions (equal to around 50 per cent of gross capital expenditure on average over time) are subtracted from the RABs.
- Incremental increases in operating costs are added to the controllable water and sewerage operating cost forecasts over time.

As a consequence of setting capital contributions using the cost-revenue test, there will be no impact on prices due to brownfield development on average, over time (see **Algebraic derivation**). We do acknowledge that in practice there will be some variation up and down due to:

- the lag between augmentation expenditure and households living and businesses operating in developments
- the lumpy nature of augmentation capital expenditure, and
- the lumpy nature of development.

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<sup>2</sup> As supplied to the ICRC in January 2017.

## Conclusion

The net incremental cost approach to determining capital contributions described above has the following advantages:

- it limits any cross-subsidisation between new and existing customers because new brownfield customers pay (via the developer) the efficient net cost of connecting to the water and sewerage network, after accounting for network externalities
- it provides a price signal to new customers that reflects the efficient costs of providing water and sewerage services to the brownfield site, after accounting for network externalities
- it can be implemented through an administratively simple and cost-effective regime.

## Algebraic derivation

Prices are set as the revenue requirement, RR, divided by quantities, Q:

$$P_0 = \frac{RR_0}{Q_0}$$

In the case of a new brownfield development, with a capital contribution, CC, the change in general prices will be:

$$\Delta P = P_1 - P_0 = \frac{RR_1 - CC}{Q_1} - \frac{RR_0}{Q_0}$$

In the case where  $\Delta P = 0$ , that is there is no change to general tariffs due to the development:

$$\frac{RR_1 - CC}{Q_1} = \frac{RR_0}{Q_0}$$

Rearranging to solve for CC gives:

$$CC = RR_1 - RR_0 \frac{Q_1}{Q_0}$$

$$CC = RR_1 - RR_0 \left( \frac{Q_1}{Q_0} - 1 + 1 \right)$$

$$CC = \Delta RR - RR_0 \frac{\Delta Q}{Q_0}$$

$$CC = \Delta RR - P_0 \Delta Q$$

That is, the cost-revenue test. The capital contribution charge must equal incremental costs (the change in the revenue requirement) minus incremental revenue (the change in quantities multiplied by current prices).

Supporting references

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## Appendix I – Glossary

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ACT	Australian Capital Territory
ACAT	ACT Civil and Administrative Tribunal
Brownfield	An area of development within an urban boundary; defined by Icon Water in its WSCC code as any area inside a precinct.
Capex	Capital expenditure
CMTEDD	Chief Minister, Treasury, and Economic Development Directorate
EP	Equivalent Population
EPD	Environment and Planning Directorate
GCW	Gold Coast Water
Greenfield	Those developments in new areas outside the urban boundary; defined by Icon Water in its WSCC code as those suburbs that are not brownfield.
ICRC	Independent Competition and Regulatory Commission
IFA	Infrastructure Funding Arrangements, the previous name for the proposed Water and Sewerage Capital Contributions code.
IW	Icon Water
LMWQCC	Lower Molonglo Water Quality Control Centre
NEL	National Electricity Law
NGL	National Gas Law
NWI	National Water Initiative
Opex	Operating expenditure
QUU	Queensland Urban Utilities
RAB	Regulatory Asset Base
WSCC	Water and Sewerage Capital Contributions, Icon Water's proposed brownfield charge

## Talk to us

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Information about Icon Water can be found on the Icon Water website at [www.iconwater.com.au](http://www.iconwater.com.au).

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TTY for Hearing Impaired:	133 677
Language Assistance:	13 14 50, 24 hours



# Water and sewerage capital contributions

Report on the outcomes of  
stakeholder consultation on Icon  
Water's proposal (Attachment C)

Version 1.0, 24 March 2017

## Document management

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### Document summary

<b>Title</b>	Water and sewerage capital contributions: Report on the outcomes of stakeholder consultation on Icon Water's proposal
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## Executive summary

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Icon Water is proposing to introduce a new way of recovering the cost of shared water and sewerage infrastructure upgrades that are triggered by development projects.

We have sought to consult key stakeholders about these proposed changes, and utilise feedback received in shaping the final proposal, including its transitional arrangements.

We engaged with stakeholders by:

- Holding face to face meetings;
- Requesting feedback through our website ([iconwater.com.au](http://iconwater.com.au))
- Contacting (through media releases) and responding to the media
- Engaging with our Community Consultative Forum
- Surveying the general community
- Emailing professionals that may be impacted, and
- Giving presentations to key impacted groups.

Feedback received has been effective in shaping the final proposal and its contents. In particular:

- Transition arrangements have been extended from three months to two years, and are now based on development application lodgement (rather than approval) dates.
- We are proposing that all of infill (or 'brownfield') Canberra be treated the same, rather than individual growth areas with differential pricing based on our sewerage catchments.
- We have performed further investigation into whether more granular metrics are available to base residential charges on within the Equivalent Population ('EP') framework. Our investigations did not reveal an option that maintained or improved the simplicity and ultimate benefits of the scheme. We will continue to review this outcome as part of our proposed annual schedule of charge updates.

In response to stakeholder feedback Icon Water extended its consultation period by a month (until 17 March) to ensure that all stakeholders were aware of alternative options and had an opportunity to provide submissions.

We have also reviewed and where relevant taken on board comments regarding water and sewerage tariffs, combined developer charges, and incentivising decentralised water and sewerage solutions.

We believe that early and thorough consultation has improved the quality of our proposal. Our final proposal is anticipated to be submitted to the Independent Competition and Regulatory Commission ('ICRC') in the near future. Following this the public can make submissions to the ICRC's separate public consultation process.

# 1. Introduction

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## 1.1 Background

Icon Water is proposing to introduce a new way of recovering the cost of shared water and sewerage infrastructure upgrades that are triggered by development projects. This includes infrastructure that services a suburb or group of suburbs such as mains, reservoirs and pumping stations. This will support a fair and clear process for developers and the broader community to support the growth and renewal of Canberra.

Currently if a development in an established area triggers a capacity upgrade for water and sewerage infrastructure, the developer is asked to pay for the full cost of the upgrade. Developers who build before or after an upgrade do not contribute to this cost. The current situation is not equitable, and charges are difficult for developers to predict. With greater focus on infill growth there is a risk that the existing arrangements will lead to delays or halting of development.

To rectify these problems Icon Water has proposed a new utility code under the *Utilities Act 2001*. The proposed changes within this utility code will mean that costs are no longer borne solely by the developer that triggers a network upgrade, but shared between all parties who develop properties within the area.

Under this arrangement, the amount payable by a developer is levied based on development size and type. Clear cost calculations included in the brownfield scheme's schedule of charges will also make it easier to determine the full cost of a development project up front.

For further information about this proposal please refer to [www.iconwater.com.au/capitalcontributions](http://www.iconwater.com.au/capitalcontributions).

## 1.2 Stakeholder consultation

Icon Water has consulted with key stakeholders about these proposed changes, and utilised feedback received in shaping the final proposal, including its transitional arrangements.

Our consultation process was conducted between December 2016 and March 2017, and we received responses from a wide range of interested parties. Following the conclusion of the consultation process a proposal has been submitted to the ICRC, who will review our proposal. The ICRC's process is complementary to the one we have performed, and provides a second opportunity for the community to provide feedback on the proposal. Icon Water is targeting a go-live date of 1 July 2017 for the code.

## 1.3 This report

This report contains a summary of our stakeholder consultation process on the proposed code, feedback received, and our assessment of whether revisions to the proposed Water and Sewerage Capital Contributions (WSCC) code were required. If adjustments were made we have detailed them, including the reasons why.

It is important to Icon Water that stakeholders involved in the process can transparently see how their feedback was received, assessed, and dealt with. Key parts of this report have been made available online during the process and shared with stakeholders that provided feedback during the process.

## 2. Stakeholder consultation performed

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### 2.1 Process

Following the identification of a need for change, Icon Water has been internally developing a new code. As part of the development of a solution we committed to testing our proposal with the community prior to any submission to the ICRC.

Our consultation process commenced on 20 December 2016 and concluded 57 working days later on 17 March 2017. During this time we have sought to engage with a wide variety of stakeholders from all elements of the Community.

Our stakeholder engagement plans identified the following three groups:

- Members of the Development community, including
  - Developers based in, or with an active presence in Canberra, who have an interest in, or would be impacted directly by this proposal.
  - Peak industry bodies, who represent the development industry in general.
  - Consultants and professionals with a direct interest in changes to our proposed process.
- The general public, including
  - Icon Water customers (tariff payers) who may be impacted by alternative proposals put forward.
  - Community organisations and representatives.
  - Icon Water's Community Consultative Forum ('CCF'), who are a representative body for the Canberra Community on water related issues
- Other stakeholders, including
  - The ACT Government
  - Parties from other jurisdictions
  - Advisory bodies and other non-corporate entities.

Our consultation process was initially focused on discussing the need for change and our proposed solution. During the consultation phase discussions were held about elements of the code, including comparing alternative solutions.

Feedback received was collated by Icon Water, responded to as required and tracked through to this report to ensure completeness. We received a combination of verbal and written feedback, all of which has have been considered and aggregated in this report.

## 2.2 Consultation schedule

**Figure 1** and **Figure 2** outlines our planned and actual timelines for stakeholder consultation respectively – importantly, the revised timeline saw additional consultation performed on a number of core proposal topics.

This extension allowed Icon Water to revise the proposal it took to the community and seek additional feedback; we believed that this improved the overall quality of our submission.

**Figure 1. Planned stakeholder consultation timeline**

Activity	Dec			Jan					Feb				Mar			
	12	19	26	2	9	16	23	30	6	13	20	27	6	13	20	27
Stakeholder consultation		•	•	•	•	•	•	•	•	✓						
Revised proposal										✓						
Submission to the ICRC										•	•	✓				
ICRC consideration (See note)												•	•	•	•	•

**Figure 2. Final stakeholder consultation timeline (including extension)**

Activity	Dec			Jan					Feb				Mar			
	12	19	26	2	9	16	23	30	6	13	20	27	6	13	20	27
Stakeholder consultation		•	•	•	•	•	•	•	•	•						
Announcement on extension										✓						
Extended consultation										•	•	•	•	✓		
Revised proposal															✓	
Submission to the ICRC																✓
ICRC consideration (See note)																•

**Note:** The ICRC consideration process is included for illustrative purposes only; this is likely to extend beyond March and April 2017. The Commission is not bound to a particular timeline.

## **2.3 Privacy**

While this document shares the methods used by Icon Water to contact parties, the final parties that provided submissions will not be publically disclosed. Additionally comments will not be attributed to individuals or entities.

Please note that under its regulatory framework Icon Water may be requested to provide further information (regarding submissions received) to the ICRC so that they may understand the feedback received. In this instance information will be shared in confidence.

## 3. Talking Icon Water (our conversation with the community)

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### 3.1 Methodology

We engaged with stakeholders by:

- Holding face to face meetings;
- Requesting feedback through our website (iconwater.com.au)
- Contacting the media (through media releases)
- Engaging with our Community Consultative Forum ('CCF')
- Surveying the general community
- Emailing professionals that may be impacted, and
- Giving presentations to, and holding discussion forums with impacted groups.

#### Face to face meetings

We held a total of eleven face to face meetings – each was preceded by the sending of an information pack on our proposal. Meetings were focused on building an awareness of our initiative, and gauging initial reactions and feedback.

We found that these meetings were an appropriate forum to cover the proposed code at a moderate level of detail, and to outline the thinking behind key design decisions (at that point in time).

In each interaction we presented our proposal, and then asked key stakeholders a range of open ended questions about their thoughts and opinions. We then invited each to follow up with any additional feedback at a later date.

Some meetings were with bodies that represented an industry or group of individuals, such as the Housing Industry Association, Master Builders' Association, Property Council, Real Estate Institute of the ACT, Canberra Business Chamber, and the Australian Property Institute.

#### Feedback received through our website

Our website provided information about our proposal, including the information pack and a series of frequently asked questions (which were regularly updated to include answers to questions being asked via other mediums).

Our site invited respondents to provide feedback over six categories; Transitional arrangements, Precinct identification, Steps for collecting charges, Payment arrangements for the charges, Feedback on the consultation process, and a catch-all General category.

We received fourteen submissions through our online portal, from all three stakeholder groups.

#### Contacting the media

##### Print media

In January 2017 we produced a media release raising awareness of our stakeholder consultation program. The media release was sent to several news agencies; of these the Canberra Times (and the Sydney Morning Herald through syndication) provided coverage.

On 15 February 2017 Icon Water produced a second media release that documented Icon Water's extended consultation period and request for detailed feedback on a revised transition period.

On 3 March 2017 a third article was published by the Canberra Times.

##### Radio

During February 2017 the proposal was discussed in two radio interviews on 666 ABC Canberra and 2CC Canberra. Icon Water was interviewed for one of these.

The ACT Government Chief Minister was also queried about the proposed code during his regular slot on 666 ABC Canberra.

### **Community Consultative Forum**

On 7 February 2017 Icon Water presented its information paper and proposal to the CCF. The audience understood the need for change and discussed the code and its merits. Some suggestions on changes were made by a number of participants, which have been included in the body of this document.

### **Surveys of the general community**

In February 2017 Icon Water engaged an independent research company a telephone survey of 1,020 Canberra residents over the age of 18. Respondents were asked five general questions about cost-reflective charging, user-pays, and infrastructure funding. The responses to this survey were used in informing our final submission to the ICRC. Respondents were from a representative selection of Canberra's regions and suburbs.

Media coverage present also contributed to the general public's awareness of our proposal.

### **Emailing professionals that may be impacted**

During February and March 2017 Icon Water sent two e-mails to all individuals and companies listed in its communications database as professionals that were interacted with over the past two years. This list included engineers, planners, hydraulic specialists, consultants, and companies and individuals that have made building applications to Icon Water. E-mails sent provided information about the proposed code, and invited feedback through our Talking Icon Water website.

### **Presentations and forums**

Icon Water also held two discussion forums with the collective members of three industry bodies (Housing Industry Association, Master Builders' Association, and the Property Council). Over the two presentations over 20 Canberra developers and stakeholders attended (most twice), and provided their verbal feedback on the proposal. Most developers attended both the initial and follow-up sessions. In addition to receiving feedback during the session, we invited all parties who attended make a submission to Icon Water via our Talking Icon Water website, or in writing via post or e-mail.

## 4. What we heard:

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### 4.1 Overview

In total, Icon Water received 31 individual items of feedback on the proposed code. While their length, complexity, and topic vary it is possible to aggregate them into the following very broad categories:

- Broad support was present for the following aspects of our proposal:
  - The community recognises that the existing arrangements are outdated and not fair for Canberra developers, and that change is needed.
  - Our intention to increase clarity and equity is positively received, and the general approach of our principles is sensible.
  - Icon Water's proposed approach to deliver capital expenditure (in-house, or if commercially appropriate using the engagement of third parties/developers) was broadly accepted as sensible.
- Some elements of our proposal could be changed:
  - Transition should be lengthened to avoid disadvantaging developers who have purchased property prior to this code going live.
  - Key code dates should be based on Development Application ('DA') lodgement rather than approval dates as these are not in the control of developers.
  - The multiple precinct model differentiates between areas of Canberra, and may halt urban renewal in some areas, and a single precinct should be adopted.
  - The schedule of Equivalent Population ('EP') multipliers provided with the proposal may not be detailed enough. If a case can be established to deliver more granularity without compromising the principles, then this should be adopted.
- In addition to the above, some submissions suggested that:
  - Icon Water's water and sewerage tariff payers should fund infrastructure augmentation.
  - Icon Water's growth and capital expenditure plans should to be made more transparent.
  - Icon Water and the ACT Government should combine their development charges into a single levy to promote efficiency of process within the ACT.
  - The proposed EP multipliers for residential and commercial developments should be better aligned.
  - Icon Water's consultation process should be longer and more extensive.
  - The proposed charge will have a negative impact on housing affordability across the ACT, particularly for first home buyers.
  - Our proposal should consider incentivising decentralised sewerage treatment solutions that reduce network impact.

#### Aspects that have broad support

The aspects that received broad support i.e. the need for change and a newer, fairer scheme provides Icon Water with confidence that its general direction for a new code is appropriate and reasonable. This feedback was received from the majority of stakeholder groups.

Given its general alignment this report will not discuss the positive feedback received any further, and will instead note that it validates the approach documented in the information paper (and in our submission to the ICRC).

#### Other feedback

The remainder of this section discusses each of the items in the 'change' and 'consider' bullet points in greater detail, and weighs off feedback received against the rationale for proposing such an element.

At the end of each discussion this report has identified the final decision on that element of the proposed code – whether it has been adjusted or not in response to feedback received, and why.

## 4.2 Transition arrangements

Feedback on transition arrangements was focused on our proposed timeframe and mechanism, and the limited ability of a developer to control their outcomes in these areas.

A generalised summary of feedback received is as follows. Please note that where feedback received is directly relevant to the discussion it has been quoted in the document and referenced accordingly.

Feedback topic	Development community	General public	Other stakeholders
Overall feedback	<p>The introduction of this code at short notice would directly disadvantage some developers that have purchased property within the last twelve months, yet had not known about Icon Water's proposed changes until recently.</p> <p>Developers require time to respond to changes in charging regimes, particularly when undertaking long-term projects.</p> <p>[We] did not know of any potential developer charges from Icon Water... at the time of purchase, and this has not been factored into the price.</p> <p>To propose a levy on [our] estate which... would have been completed or near completion if not for the continued delays outside [our] control is inequitable.</p>	Transition should occur before augmentations are triggered.	No submissions on this topic.
Possible new transition timeframes	Longer is more preferable – ideally two years.	No submissions on this topic.	No submissions on this topic.
Risk of extended old arrangements delivering perverse outcomes	Happy to accept this risk during transition period.	No submissions on this topic.	No submissions on this topic.
Control	Development approvals are not within the control of a developer, and therefore not a 'fair' milestone.	No submissions on this topic.	No submissions on this topic.

Icon Water's original proposal contained a three-month transition timeframe based on an anticipated code go-live date of 1 July 2017. This date was chosen as Icon Water believes that brownfield growth augmentations will be triggered in the next financial year – this date would have allowed a more equitable funding solution to apply in advance.

During consultation the development community told us that a number of capital investment decisions had been made based on assumptions around the charging regimes in place. The introduction of a new code (and set of charges) would directly disadvantage developers with projects that are currently in-flight.

We heard that a more preferable option was for transition arrangements to be implemented based on whether land was purchased (date of exchange) before or after go-live. This would ensure that developers could factor our proposed charge into their calculations before making purchase decisions.

Icon Water has considered the above feedback and agrees that an extension of the transition arrangements is fairer and increases the level of certainty for the development community. In extending these transition arrangements Icon Water would seek to recover the 'gap' in its full 20-year collection target over a shorter period; this would have the impact of raising precinct charges. This was tested with stakeholders and generally accepted.

There were three elements discussed regarding the preferred nature of a transition period:

- The length of the exemption provided to developers who had purchased property,
- The event used to assess eligibility for and cut-off of transition, and
- The eligibility for a transition.

Despite the higher charges, the development community preferred a longer transition period of two years. This was said to align more closely with the timing of major development projects. A two year window would allow them to continue on existing arrangements, or opt in to the new code if that suited them.

Next, the cut-off event for transition arrangements was discussed. Feedback received indicated that a date able to be controlled, such as a development application lodgement date, was strongly preferred.

Finally, land purchased prior to go live would be eligible for the transition period of two years, after which if lodgement has not occurred then the property is subject to the new code. Land purchased after go live will be subject to the new code immediately.

To ensure alignment throughout the code, Icon Water has proposed changing all references throughout our code from development application approval to lodgement.

## Outcome

Following stakeholder consultation, Icon Water has determined that transition arrangements should be varied as follows:

- For properties purchased (have had contracts exchanged) before the go-live date:
  - A two-year transition will apply.
  - During this time the developer will have the option of utilising either the existing arrangements or the new proposal.
  - All developments within the transition arrangements will have two years from go-live date to lodge a Development Application to remain under the existing arrangements.
  - Failure to lodge a Development Application will see the new proposal apply.
- For all properties purchased (have had contracts exchanged) after the go-live date:
  - The new arrangements will apply.
- Each financial year-end, cut-over between schedules of charges will be managed using a development's DA lodgement date.

### 4.3 Precincts

Icon Water received the largest level of feedback on the sizing and aggregation of precincts. In particular, the Canberra community had strong preferences as to the way in which brownfield scheme costs should be apportioned.

Precinct sizing was presented to the community as a trade-off between:

- Simplicity – of both administration and payment of the charge, and
- Accuracy – of underlying costs in particular network areas.

Eleven precincts, based on Icon Water’s sewerage catchments, was presented as a balance of these two characteristics. The proposal was supported by an assessment against the seven ‘principles’ that a new code would be assessed against, as well as an economic assessment of costs and benefits.

Stakeholder feedback on this proposal was as follows:

Feedback topic	Development community	General public	Other stakeholders
Number of precincts	<p>Strong preference for a single precinct charge across all of brownfield Canberra.</p> <p>One precinct will be simpler than 11 for developers to understand and plan for – will also avoid any precinct boundary disputes.</p>	<p>77.6% of 1,002 residents surveyed indicated that utility growth costs should be met by the developers in the area where this development is triggering this growth.</p> <p>This response was consistent across age and region.</p> <p>(77.6% yes, 12.3% no, 10.1% unsure)</p>	<p>General comments received indicated that a simpler model was easier to understand and apply – accordingly a smaller number of precincts was preferred.</p>
Cross-subsidisation and equity	<p>All Canberrans should contribute towards the growth of the city and its infrastructure.</p> <p>One precinct would respond to community concerns about intergenerational equity – i.e. precincts have either got lucky (or unlucky) with the proposed level of developer charges as result of where they are in the development cycle</p>	<p>The survey indicated broad acceptance of the user pays principle; that is, that consumers receiving the benefit of goods or services pay for the goods or services (rather than all of the community sharing these costs).</p>	<p>No submissions received on this topic.</p>
Cost reflectivity	<p>Strongly prefer equal treatment across areas of Canberra over cost-reflective charging.</p>	<p>No submissions received on this topic.</p>	<p>No submissions received on this topic.</p>
Urban development	<p>Differential pricing of precincts may create barriers to urban renewal in some areas (i.e. Woden).</p> <p>We believe that... in its [multiple precinct] form the brownfield scheme will threaten the viability of major projects</p> <p>Differential pricing will result in the charge in certain precincts changing dramatically overnight where a major new development is announced e.g. Capital Metro to Woden providing uncertainty for developers.</p>	<p>No submissions received on this topic.</p>	<p>No submissions received on this topic.</p>

Exemptions	Four submissions requested that special or bespoke precincts be created for areas that their developments were in.	No submissions received on this topic.	No submissions received on this topic.
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Feedback received was predominantly in favour of charging based on a single precinct for all of brownfield Canberra. The use of locational price signals based on sewerage catchments was perceived as unnecessarily complex, and possibly a barrier to development in certain areas of Canberra in the long-run.

As noted in the table on the previous page, stakeholder feedback has indicated that a reduction in locational price signals (i.e. differentiated charging areas) is a preferable brownfield scheme characteristic. Icon Water’s cost-benefit analysis contradicts this view; from a purely theoretical view a locational price signal would direct new users to the areas of our network with capacity (the lowest charges) and therefore increase overall efficiencies.

The outcome of precinct sizing is therefore a decision in which the incremental economic efficiency of a brownfield scheme is traded off against community acceptance. A brief analysis of this is present in the table below.

Item	Single precinct	Sewerage catchment precincts
Economic analysis (Extracted from <i>ICRC information paper</i> )	<p><u>Locational price signal</u> Compared to a precinct charge has a reduced ability to influence (reduce) Icon Water’s overall capital expenditure as a product of there being no locational price signal.</p> <p><u>Administrative costs</u> Simpler to administrate by Icon Water compared to a precinct option, reducing administration costs.</p>	<p><u>Locational price signal</u> Improved outcome through a more effective sizing; not fully optimal (case-by-case achieves the best outcome) but some ability to direct users to areas of excess capacity.</p> <p><u>Administrative costs</u> Marginally more complex than a single precinct for the ACT, and must be less complex than a case-by-case system.</p>
Stakeholder feedback (Summarised from feedback received)	<p><u>Simpler</u> Simpler to understand and plan for.</p> <p><u>Fairer</u> Will respond to community concerns about intergenerational equity – precincts have either “got it lucky or unlucky” with the proposed level of developer charges as a result of where they are in the development cycle.</p> <p><u>Less volatile</u> A single precinct would reduce future volatility of developer charge levels, particularly when considering ACT Government infill plans that are currently ‘in-flight’. Will also create smoother changes, improving certainty.</p>	See comments to the left, which are compared to this position as a baseline.

Icon Water is committed to listening to and responding to feedback from industry and community consultation. Following a review of our internal approach, we believe that a revised scheme based on a single brownfield charge for Canberra would still deliver benefit through an increase in the overall simplicity of the scheme, despite a small loss in cost reflectivity.

We will therefore propose a single precinct charge in our submission to the ICRC.

### Outcome

Following stakeholder consultation, Icon Water has proposed that:

- Icon Water will submit a single brownfield-precinct charge proposal to the ICRC .

## 4.4 Granularity of EP multipliers

Icon Water's brownfield scheme is based on a unit of measure called Equivalent Population (or 'EP'). This metric considers the average load a development places on Icon Water's sewerage system, and is used widely throughout the Australian sewerage industry.

In its proposal Icon Water provided a table of EP 'multipliers', that was designed to let a user easily determine the total EP in any development type.

Feedback the use of EP was focused in two areas:

- The appropriateness of EP as a primary input, and
- Whether the EP table should include further granularity.

### Use of EP as a baseline

Feedback topic	Development community	General public	Other stakeholders
Use of EP as a baseline	<p>Generally accepted as an appropriate basis from which a charge could be scaled.</p> <p>Some comments received suggested that the number of bedrooms in a residential dwelling may be a more appropriate basis, as it may reduce the charge applied to smaller, entry-level stock.</p>	<p>Acceptance of the principle that developer charges should scale with the size and impact of the development.</p> <p>Acceptance of EP as an appropriate baseline.</p>	The proposed EP metric is simple and easily understandable.

During the initial design of its proposed brownfield scheme Icon Water investigated a number of alternative charge drivers, including connection size (water and sewer ties), the number of dwellings, and the EP method eventually adopted. Icon Water proposed EP because of its ability to easily account for differing land use types (residential vs. commercial vs. industrial) and density profiles.

Some comments received suggested that charges would be more accurate if the number of bedrooms was the primary driver for residential charges (rather than per EP). Following this feedback Icon Water performed an internal review and noted that:

- Overall demand is driven by a combination of development type, sewered area (or network length), and the impacts of equivalent population (load) on a network, not just population.
- Icon Water is provided with information regarding the design of a property during the standard Building Approval (BA) / Development Approval (DA) / Hydraulic Servicing Plan (HSP) review process, however this does not provide accurate and final information regarding the number of bedrooms on a property. Absolute certainty on developed form occurs much later in the development process.
- There is a risk that DAs and HSPs submitted to Icon Water may be slightly varied from the final built form of a development, resulting in an incorrect application of a charge. Additionally, some issues may be present regarding the definition of what a 'bedroom' is as communicated to ACTPLA versus the general market (i.e. are studies counted as bedrooms?).

Because of these limitations Icon Water does not agree that a change from an EP-driven basis of calculation for residential property types is appropriate. Instead, an increased level of granularity within our EP framework is preferred.

## Whether the EP table should include further granularity

As noted on the previous page, it is Icon Water's preference that any further granularity of calculation is performed within the bounds of the 'EP multiplier' framework. This ensures consistency across development types in a form backed by sewerage industry standards.

Some feedback was also received regarding the preferred level of granularity within the EP table:

Feedback topic	Development community	General public	Other stakeholders
Granularity of EP table	<p>Increased granularity preferred – saw it as inequitable that “a 4 bedroom penthouse in Kingston had the same assessed impact as a 1 bedroom unit in Tuggeranong”.</p> <p>Cited developments in Lawson with up to 10 bedrooms as examples of where further granularity is needed.</p>	No submissions received on this topic.	Further granularity in EP beyond the table (i.e. number of bedrooms) is likely to cause confusion and unnecessary complexity.

Icon Water has investigated increasing the detail present in its EP table; in particular whether the residential component could be expanded to include EP multipliers that provided different ratios based on the size and density of a residential property.

The use of simple house / townhouse / apartment ratios does give rise to some cross-subsidisation between small and large examples of each type. Two core principles of Icon Water's charge development process are:

- Principle 3 – Avoids cross-subsidisation, and
- Principle 6 – Simple.

The initial design of its proposed brownfield scheme Icon Water investigated a number of alternative charge drivers, including connection size (water and sewer ties), the number of dwellings, and the EP method eventually adopted. Icon Water proposed EP because of its ability to easily account for differing land use types (residential vs. commercial vs. industrial) and density profiles.

If the overall accuracy of our brownfield scheme can be improved while working within the EP framework without impacting its simplicity of administration, then we would seek to incorporate any changes.

Our review (as noted on the previous page) revealed that assessments based on the number of bedrooms is not able to be quickly adapted as a solution prior to the go-live of a code. Further analysis indicated that density assessments (based on Gross Floor Area) may be subjective and would increase the complexity of code administration.

As a result Icon Water is proposing that the EP table not be altered. We note that improvements may be made to the EP framework over time (either by Icon Water or WSAA); if these facilitate further detail then our charging regime will be adjusted accordingly.

## Outcome

Following stakeholder consultation, Icon Water has determined that:

- No changes will be made to Icon Water's brownfield EP charge table. If future updates to the EP framework facilitate more granular charges then these will be incorporated into our brownfield scheme in an annual update.

## 4.5 Water and sewerage tariffs

Some feedback was received regarding our basis for charging the development community, as follows:

Feedback topic	Development community	General public	Other stakeholders
Overall feedback	<p>New developments provide benefit to the community surrounding them. As a result, the community should contribute to the cost of infrastructure servicing these developments.</p> <p>Icon Water should not charge these costs on to developers, and instead add them to the water and sewerage tariffs of customers.</p> <p>Beneficiaries should pay! Taxes on development transactions reduce housing supply, increase the price of housing, increase mortgage payments, and worsen the housing affordability crisis.</p> <p>[We] reject the proposition that a levy on new home buyers to fund network wide capital upgrades is efficient, equitable, or in the interests of the ACT community.</p> <p>Icon Water should be considering funding mechanisms such as borrowings to be supported by water and sewerage rates, or water pricing as the primary means of addressing this problem.</p> <p>[Icon Water's proposal] is a significant change to over a century of practice.</p> <p>We question why a broader, more equitable charge is not being considered. For example, a reduced charge spread across a broader area, or that would see the cost of infrastructure upgrades equally distributed through rates or water pricing.</p>	<p>82.5*% of Canberrans surveyed indicated that those parties triggering utility infrastructure augmentation in existing suburbs of Canberra should provide funding.</p> <p>This result was generally consistent across age group and region.</p> <p>* 82.5% yes, 8.3% no, 9.2% unsure</p>	<p>General support for developer charging was received.</p>

Additionally, one submission received made reference to the Productivity Commission's 2012 report into Urban Water pricing, in particular recommendation 6.2:

*Upfront developer charges should be used where the incremental costs of development are well established and benefits accrue mainly to those in the development. Where, as in the case of urban infill, the benefits also accrue to incumbents, costs should be spread across all users through rates, taxes or the fixed part of a two-part tariff for water and wastewater services.*

*Developers should be given the option of building the required infrastructure themselves where appropriate, subject to predetermined standards.*

The stakeholder suggested that because of this the developer charge should be allocated through Icon Water's water and sewerage tariffs to all customers.

The thrust of the Productivity Commission findings is that charges should reflect costs (forward-looking, not sunk) and be levied on beneficiaries. For example, infrastructure that provides a wider community benefit should be funded through rates, taxes, or usage charges. With respect to this principle:

- Our approach of spreading optimally-sized brownfield augmentation costs across multiple developers is consistent with this principle.
- Our shared basis for funding is also consistent with this principle, as ongoing usage charges expected to be paid by new customers are netted off the incremental (forward-looking) expenditure caused by those customers, so that incremental costs are fully recovered by the combination of capital contributions and usage charges over time.
- Our proposed brownfield scheme only seeks to recover capital costs of those assets that deliver shared benefits across a discrete network element (in this case Class 2 assets).

The proposed brownfield scheme results in a more optimal outcome as assessed by these recommendations.

With regards to the appropriateness of developer charges as a funding mechanism, Icon Water notes that most other Australian cities have a developer charge regime across water, gas, and electricity.

This is supported by a reasonable body of evidence including:

- The National Water Initiative's pricing principles (2010)
- The Productivity Commission's inquiry report into Australia's urban water sector (2011) and First home ownership (2004)
- The Essential Services Commission's review into 'new customer contributions' (2012)
- The Australian Energy Regulator's guidance on charges payable for new connections.

Broadly the literature present suggests that developer charges should:

- Send an economic price signal to developers about the true cost of their development
- Ensure that beneficiaries of infrastructure contribute appropriately, and that cross-subsidisation between user classes is minimised
- Promote efficient investment behaviours, minimising total costs for all customers; and
- Ensure that the total economic benefits delivered by the charge are not outweighed by the economic costs of its implementation and operation.

We also note that there is broad community support for the use of developer charges as a way of funding infrastructure augmentation.

### **Outcome**

Following stakeholder consultation and considering relevant literature, Icon Water has determined that:

- No changes are required to the framework of our proposal.

## 4.6 Underlying growth and capital expenditure forecasts

Some feedback was received regarding challenging the credibility of Icon Water's capital expenditure and population forecasts:

Feedback topic	Development community	General public	Other stakeholders
Detailed capital expenditure information	<p>Insufficient substantiating evidence has been provided to allow the public to fully assess the proposal.</p> <p>There has been no detail provided during the consultation on the actual facilities, infrastructure upgrades, or services that are included within the final [charge] amounts.</p> <p>There is no demonstration that the proposed new charge is for capacity augmentations... neither is there a demonstrated link between charge revenue and Icon Water's investment and capacity augmentation planning... There is no information provided... that demonstrates that there is no double dipping.</p>	No submissions on this topic.	No submissions on this topic.
Population growth information	Populations in [many] suburbs have been falling steadily since their population peaks approximately 18 years after their original completion. New peaks are not attainable under government policy.	No submissions on this topic.	No submissions on this topic.

The above concerns were raised in the presentations and forums held; in response to this the follow-up forum presented data on these topics, including analysis of suburban population levels and summary capital expenditure data.

Until a new code is approved Icon Water has chosen not to share the exact nature, timing, and cost of brownfield capital augmentations required in its network due to growth. Public release of this information may prejudice developments taking place within the ACT, particularly if the proposed code is not approved or is subject to delay.

The ICRC, following receipt of our proposal, is likely to consider the submission and perform rigorous checks on content, assumptions, and data. This submission will be considered against the ICRC pricing principles (which include maximising social welfare, economic efficiency, financial viability, and community impacts).

### Outcome

Following stakeholder consultation, Icon Water has determined that:

- No changes are required to the framework of our proposal.

## 4.7 Combined developer charges

During the stakeholder consultation process some time was spent with the development community clarifying the separate purposes and entities responsible for the Lease Variation Charge ('LVC') and Icon Water's proposed code.

Following these discussions feedback was received as follows:

Feedback topic	Development community	General public	Other stakeholders
Overall feedback	<p>Developer charges should be streamlined within the ACT to create efficiencies.</p> <p>The use of separate charges and processes by different businesses is time consuming.</p> <p>The ACT Government should consider amalgamating all developer charges (including the LVC) into a single charge for efficiency.</p> <p>Icon Water [should] not submit the new charging policy in its current or modified form to the ICRC. [Instead], the ACT Government should investigate alternative charging regimes... together with community, industry, and ACT Government stakeholders.</p> <p>[There is a need] for a wholesale review of funding for infrastructure upgrades and how this system would operate with the current LVC system.</p> <p>[Our] view is that the LVC paid for development rights, and we should not be subject to further levies.</p> <p>Many in the industry see the LVC as essentially 'buying the right to develop' and therefore do not believe there should be additional infrastructure charges. Furthermore, because multiple agencies only look to administering 'their' charge, no-one is looking at how a simplified charging regime would place everyone in a much better position.</p>	No submissions on this topic.	No submissions on this topic.
Role of the Lease Variation Charge	Other jurisdictions do not charge for a change of use for land – this is double dipping.	Icon Water is doubling-up with the ACT Government to make a money grab.	No submissions on this topic.

The LVC does not seek to recover the cost of future infrastructure augmentations required to service developments.

As a Territory Owned Corporation incorporated under the *Corporations Act 2001*, Icon Water is unable to make changes to the process under which the LVC is administered.

Icon Water commits that it will pass this feedback onto the ACT Government.

## Outcome

Following stakeholder consultation, Icon Water has determined that:

- No changes will be made to our proposed code, however
- The feedback received regarding the preferred amalgamation of charges will be shared with the ACT Government at the next available opportunity.

## 4.8 Weighting of development types under the EP framework

Some feedback was received on the EP framework and the different ratios applied to commercial and residential developments. Feedback was received as follows:

Feedback topic	Development community	General public	Other stakeholders
Office versus residential EP loadings	<p>Given the significant difference in charges for offices versus residential developments, and because offices have a significantly lower load on water and sewer infrastructure than residential developments, there will be unintended consequences.</p> <p>The difference in charges are so significant that the property market would be distorted.</p>	No submissions on this topic.	No submissions on this topic.

Icon Water selected the EP metric because of its direct relationship with network load and our assessment process, and its ability to compare (and contrast) loads from different development types. When developing our brownfield scheme we considered a number of alternatives including the number of dwellings in a development and meter connection size. Our work indicated that these factors:

- Did not scale well and were a poor predictor of water and sewerage demand.
- Did not accurately capture the different usage profiles present for differing developments.
- Did not provide sufficient flexibility to take new and emerging technology solutions into account.

This metric and its framework is also widely used by industry throughout Australia, and is published both by Icon Water in its *Water supply and sewerage standards*, and the Water Services Association of Australia's *Sewerage Code of Australia*.

EP is a core component of Icon Water's infrastructure planning process; its inclusion in our proposed infrastructure charge contributes to a level of consistency across our business.

### Outcome

Following stakeholder consultation, Icon Water has determined that:

- No changes will be made to the use of our proposed EP framework (with the exception of any future iterations identified in Section 4.4).

## 4.9 Sufficiency of consultation

Some feedback received suggested that the length of the consultation process was not sufficient:

Feedback topic	Development community	General public	Other stakeholders
Length of consultation process	<p>[We are] disappointed with the consultation undertaken in respect of this proposal... [in particular] the length of the consultation period, and that it occurred over the Christmas break.</p> <p>The consultation process to date has been incorrectly targeted and provides no certainty to the development industry or the Canberra community as to which development tax Icon Water is proposing to lodge for consideration to the ICRC.</p>	No submissions on this topic.	No submissions on this topic.

Icon Water's recognises that its initial planned consultation period was insufficient due to the impact of the Christmas break and the intention to brief six industry bodies prior to sending out a media release to inform the wider public. The decision to extend the consultation period by four weeks was driven both by this, and a desire to circulate and discuss alternative brownfield scheme characteristics with key stakeholders for further feedback.

Other comparable proposals (such as Gas or Electricity codes) have generally had shorter consultation processes; we acknowledge that these often offer smaller incremental changes than those in our proposal.

We believe that this period has been successful in identifying and understanding the preferences of key stakeholders throughout the Canberra community. This is evident in the number of changes made to Icon Water's original proposal, in particular the treatment of precincts, transition, granularity of EP charges, and DA lodgement dates.

The ICRC will perform its own public consultation process following Icon Water's submission of a code proposal; all stakeholders will be able provide submissions to this process.

We believe that the submissions received to date have been valuable; to this end we propose writing to parties that have provided feedback and requesting to share these submissions with the ICRC.

### Outcome

Following stakeholder consultation, Icon Water has determined that:

- No changes will be made to length of the consultation period, however
- All stakeholders that have provided feedback will be contacted, to confirm whether Icon Water may share submissions received with the ICRC.

## 4.10 Housing affordability

Some feedback received suggested that this charge would have a negative impact on housing affordability:

Feedback topic	Development community	General public	Other stakeholders
Length of consultation process	<p>[We] are concerned that at a time when the ACT Government is acknowledging the challenges faced with respect to housing affordability in the Territory, and is pursuing policies to address this problem, that a charge which will be passed directly on to the community is being contemplated.</p> <p>[We] are also concerned that additional levies, which will inevitably be passed onto buyers, will result in increased house prices which will further contribute to the housing affordability crisis.</p>	No submissions on this topic.	No submissions on this topic.

The proposed Icon Water Capital Contribution Charges are utility charges intended to recover costs of funding additional capacity where it is required to support increases in demand created by development.

These are not new charges, what is being proposed is a change to the way the cost of water and sewerage infrastructure augmentation are recovered from those developing in established areas to ensure fairness and equity among developers.

Currently if a development in an established area triggers a capacity upgrade for water and sewerage infrastructure, the sole developer is asked to pay for the full cost of the upgrade at a cost that was not anticipated upon purchasing or planning to construct.

Our proposal reduces the aggregate and individual costs allocated to developers by sharing the uneconomic component of costs (50%) across all new developments in brownfield areas. The nature and size of a development will drive the value of each charge.

We believe there is a benefit to both developers and those purchasing homes to be able to anticipate costs that will apply.

### Outcome

Following stakeholder consultation, Icon Water has determined that:

- No changes will be made proposed code.

## 4.11 Incentivising decentralised solutions

Decentralised sewerage systems are a relatively new trend in sewerage networks. They are able to perform processing of raw sewerage on-site and either recycle this into grey or black-water systems on premises, or reduce the site's overall output into the utility network.

Importantly, reductions in flows are generally not guaranteed, and water utilities are required to provide capacity in their network to cater for the possibility that the decentralised solution may not be working at any point in time.

Feedback on decentralised solutions was received as follows:

Feedback topic	Development community	General public	Other stakeholders
Overall feedback	<p>The new brownfield scheme should provide discounts if we can process some of our own sewerage on-site, rather than sending it into your network.</p> <p>We strongly suggest that Icon Water should consider the option of rewarding proponents who provide additional strategies such as waste water re-use and encourage developers to seek new technologies to minimise loadings from new developments on the existing network.</p> <p>Reclaimed water can also make significant contributions to sustainability by reducing pressure on our existing water supplies.</p>	No submissions on this topic.	<p>Decentralised solutions should be considered and incentivised by Icon Water in any brownfield scheme.</p> <p>The introduction of the brownfield scheme provides an incentive for developers / builders to reduce water consumption and sewage generation through sustainability initiatives... Recognition of these initiatives could be accounted for through a reduced EP rate on a project.</p>
Discounts	"Can I have a discount if I have a decentralised wastewater solution in my development?"	No submissions on this topic.	No submissions on this topic.

Icon Water is supportive of new and innovative ways to manage overall water and sewerage network load, and agrees that any new brownfield scheme should consider the benefits delivered by decentralised solutions. We seek efficiency in all areas of our business and sustainability is at the core of how we work.

As noted above these solutions can have varying impacts on our network based on their size, frequency of operation, and guaranteed reliability levels. It is therefore important that our framework for assessing these solutions is flexible.

The EP framework noted on previous pages allows for decentralised solutions to be taken into account on a case-by-case basis. Under this framework, Icon Water can take decentralised solutions into account when determining the final EP value for a development. This solution avoids adding a new measurement basis for this system (and achieves our target of a simple code).

We commit to working with developers on a case-by-case basis to analyse and work out an appropriate discount if they are able to demonstrate that less load will be placed on the sewer by a particular solution.

## Outcome

Following stakeholder consultation, Icon Water has determined that:

- Our EP assessment process will take the positive impact of decentralised solutions into account.

## 5. Outcomes

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The outcomes of this stakeholder consultation process have been used to shape our final code proposal to the ICRC. Our formal submission ('ICRC information paper' and attached proposed code) will incorporate all changes made. Further information on this will be made available on Icon Water's website ([iconwater.com.au/capitalcontributions](http://iconwater.com.au/capitalcontributions))

Icon Water would like to thank all members of the development community, the general public, and all other stakeholders for taking the time to understand, discuss, and make submissions regarding our proposed code. The submissions received challenged core assumptions and brownfield scheme design decisions, and the final submission to the ICRC is ultimately more robust and positive.

The ICRC will also undertake a public consultation process as part of its process in reviewing and subsequently approving our proposal.

## Appendix 1: Clarifications and questions

During our consultation process a number of clarifying questions were asked regarding the brownfield scheme. The table below is a complete listing of these questions and the responses provided at the time.

Where our final proposal has amended an element of the brownfield scheme, and this is relevant to the answer, a comment has been added in [blue](#).

Question	Answer
<p>The proposed charges include charges for the Belconnen precinct which has seen some decline in specific suburb populations over recent years.</p> <p>Can you explain why you expect that infrastructure will require increased capacity to support future development within the precinct?</p>	<p>Water and sewerage network demand is driven by multiple factors; of which population is just one. Sewerage networks experience peak demand during rainfall events when stormwater enters the system (referred to as inflow and infiltration or I&amp;I) on top of usual dry weather demand. In lower density residential areas I&amp;I can heavily impact peak demand due to longer network lengths and more connections per Equivalent Population (EP), whereas in higher density residential areas population is the more dominant factor.</p> <p>Regarding declining population in areas of Belconnen, it is noted that some suburbs within the Belconnen precinct have experienced population decline in recent years. However, overall the Belconnen precinct is forecast to experience growth and exceed its historic peak population.</p> <p>The level of projected development within the Belconnen precinct will consequently require the existing infrastructure to be augmented to meet network demand.</p>
<p>Can you explain why precinct based charging is being proposed, rather than suburb based charging?</p>	<p>The decision on defining precincts is a trade-off between the application of the economic efficiency of the scheme and the overall complexity of the scheme.</p> <p>There are a range of Class 2 assets, of which some specifically service individual suburbs, whereas others cover a number of suburbs or parts of a district. In many cases there will be no variation in Class 2 augmentation costs when developing in one suburb rather than the next. A suburb-level charging regime would be complex and administratively costly.</p> <p>Overall, we have judged that the precincts strike the right balance between cost reflectivity, complexity and administration cost.</p> <p><a href="#">Note: Please note the updated submission contains a single precinct for all brownfield Canberra.</a></p>
<p>Lawson is a newer suburb, constructed within an established area.</p> <p>Is Lawson considered to be brownfield or greenfield?</p>	<p>As Lawson is within an existing precinct it would be considered “brownfield” under the proposed scheme. Under the existing system, the developer would have paid for all infrastructures required to connect into the existing network and any augmentations required.</p>
<p>What is Icon Water doing about fire services requirements?</p> <p>Will a reduction in pressure result in the EP charge being reduced?</p>	<p>Icon Water works closely with the ACT fire brigade to ensure fire-fighting needs are met. Under current forecasts fire-fighting requirements will have minimal impact on precinct charges, due to the small amount of Class 2 water augmentations required.</p>

Question	Answer
<p>What is the proposed arrangement for Development Applications approved through transition but later amended after the transition period?</p>	<p>Icon Water is suggesting transition based on the original date that the Development Application is approved. This is part of our steps to minimise the complexity of the new scheme.</p> <p>If a development approval is granted during the transition period and the Code would not otherwise apply, then a later amendment to the development approval will not bring that development under the Code. As outlined in other responses, Icon Water is conscious of the need to minimise the complexity of the Code to ensure that it is clear and well-understood.</p> <p><b>Note: The final proposal has changed transition arrangements to be based off DA lodgement dates.</b></p>
<p>How were assets planned for in the past, and how does Icon Water currently plan?</p>	<p>Historically, assets were designed and constructed by various bodies and Icon Water's predecessors to meet the expected and predicted demands known at that time. Similarly today, Icon Water uses the current expected and predicted demand information to consider various planning horizons from short term 1-5 year plans through to 50 year plus strategic asset planning.</p> <p>For the capital contribution scheme, Icon Water will use detailed 20 year Asset Management Plans (AMP's) as well as long term strategic plans. These plans identify potential capacity issues due to growth from various data sets and forecasts including population and development forecasts, demand data and trends, climate data and ACT Government development policies and strategies.</p> <p>It should be noted that whilst long term asset management issues and predicted growth are considered, many of Icon Water's assets have effective lifespans of 100 years plus. This leads to a necessary assessment of what assets are prudently required and a balance between unknown future growth and potential over servicing of areas in the short term to avoid "gold plating" of assets and higher costs to the community in the present.</p>
<p>Icon Water is stating that the proposed Capital Contributions are fairer and more equitable than the current arrangements (particularly for those whom have previously paid for augmentation triggered by their developments).</p>	<p>If we don't change the current arrangements the inequity of developers paying and not paying for growing infrastructure will widen and individual developers facing large network augmentation costs will continue and become more frequent.</p> <p>The proposed code is forward-looking and draws a line in the sand whereby the funding of future developments is more equitable. The proposed code acknowledges where capital expenditure costs are likely to be incurred and where they are not.</p>
<p>Some developments have been held up by various factors (such as Territory Plan variations). Will there be an exemption for any such developments?</p>	<p>Following expiry of the transition period, it is intended that the Code will apply to all developments from the date of approval of the development application.</p> <p>While we acknowledge that some developments have a longer lead time, whether due to the need for Territory Plan variations or other factors, it is not practicable to take into account such variables in determining whether or not the Code applies to individual developments.</p> <p>The proposed extension of the transition period will reduce the number of developments which have undergone extensive feasibility studies prior to awareness of the Code.</p>

Question	Answer																		
When considering transition periods, should developments be exempt through transition period based on the date that the Development Application is lodged rather than when the Development Application is approved?	<p>Note: The original answer is no longer current. The final proposal has changed transition arrangements to be based off DA lodgement dates.</p>																		
There are cases where developers have previously funded augmentation. Will they be eligible for a refund?	The proposed code is forward-looking and draws a line in the sand whereby the funding of future developments is more equitable																		
It is understood that similar charges apply in other jurisdictions. Can you provide comparison of the proposed Capital Contributions charges to what is applied by the relevant Councils in Queanbeyan and Yass?	<p>By way of comparison of charges in the surrounding region, the NSW Office of Water provides the following typical developer charges per equivalent tenement for Yass and Queanbeyan for 2015/16 (the most recent year reported):</p> <p><b>Yass</b></p> <table border="0"> <tr> <td>Typical Water Supply Developer Charge approximately:</td> <td>\$12,500</td> </tr> <tr> <td>Typical Sewerage Developer Charge approximately:</td> <td>\$6,000</td> </tr> <tr> <td></td> <td>\$18,500</td> </tr> </table> <p><b>Queanbeyan</b></p> <table border="0"> <tr> <td>Typical Water Supply Developer Charge approximately:</td> <td>\$8,500</td> </tr> <tr> <td>Typical Sewerage Developer Charge approximately:</td> <td>\$1,000</td> </tr> <tr> <td></td> <td>\$9,500</td> </tr> </table> <p><b>NSW median</b></p> <table border="0"> <tr> <td>Typical Water Supply Developer Charge approximately:</td> <td>\$5,900</td> </tr> <tr> <td>Typical Sewerage Developer Charge approximately:</td> <td>\$5,100</td> </tr> <tr> <td></td> <td>\$11,000</td> </tr> </table> <p>Note: The following words have been updated to reflect the single precinct proposal.</p> <p>While it is difficult to undertake a direct comparison given the approach in Queanbeyan and Yass is based on equivalent tenement rather than equivalent population (EP), the replacement of a single dwelling with three townhouses in brownfield Canberra would attract a charge of \$4,680.</p>	Typical Water Supply Developer Charge approximately:	\$12,500	Typical Sewerage Developer Charge approximately:	\$6,000		\$18,500	Typical Water Supply Developer Charge approximately:	\$8,500	Typical Sewerage Developer Charge approximately:	\$1,000		\$9,500	Typical Water Supply Developer Charge approximately:	\$5,900	Typical Sewerage Developer Charge approximately:	\$5,100		\$11,000
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Typical Water Supply Developer Charge approximately:	\$5,900																		
Typical Sewerage Developer Charge approximately:	\$5,100																		
	\$11,000																		
Can Icon Water provide further clarity on asset classes?	Yes – for a complete and current listing please refer to the information paper at <a href="http://www.iconwater.com.au/Community-and-Education/Talking-Icon-Water/Capital-Contributions.aspx">http://www.iconwater.com.au/Community-and-Education/Talking-Icon-Water/Capital-Contributions.aspx</a>																		
Who will perform the augmentations triggered by additional network demand?	<p>We are not proposing any changes to the process for the construction of water and sewerage assets in establish areas – we envisage that these will continue to be built by either Icon Water or developers, discussed and agreed on a case-by-case basis. Where a developer undertakes construction this will continue to occur using a Hydraulic Services Deed.</p> <p>The choice of party to construct assets will continue to depend on the particular circumstances surrounding each capital project, and will not be related to the proposed charge.</p> <p>This project changes the arrangements for the funding of these capital projects only.</p>																		

Question	Answer
Can we revisit scheme dates being based on Development Application lodgement rather than approval?	<p>Feedback received has suggested that scheme transition based on Development Application ('DA') lodgement dates (rather than approval dates), is preferable.</p> <p>Icon Water considers that this suggestion is broadly acceptable, and is now in the process of consulting with impacted parties on this change. A final outcome will be documented in our submission to the ICRC.</p>
How do we create surety of existing and new EP on a development?	<p>Icon Water is able to establish existing EP based on development application data, and Icon Water records on connections and water consumption.</p> <p>We are therefore able to work with developers on a case-by-case basis to identify and agree existing equivalent population numbers on development sites where requested to do so. Additionally, we have published our framework for assessing equivalent population as part of our draft Code.</p>
Why not consider the number of bedrooms as the EP rather than an average EP per dwelling type as an indicator of potential impact on infrastructure capacity?	<p>We have based the average EP per dwelling type on the Water Services Association of Australia standards. These are averages and therefore any great divergence from the average may create unfairness in the application of charges.</p> <p>We have explored the option of number of bedrooms as an alternative EP measure, however this would add complexity and subjectivity to the code, as well as possibly having unintended consequences.</p> <p>Icon Water is committed to continuing to refining the EP standards code in future years and will, in future, investigate separating various development types by density, size, number of bedrooms or gross floor area as alternative EP categories.</p>