

8 October 2013

Ms Fiona Towers  
Acting Chief Executive Officer  
Independent Pricing and Regulatory Tribunal  
PO Box Q290  
QVB Post Office NSW 1230

Dear Ms Towers

**Re: Sydney Water Submission to IPART discussion paper: Discharge factors for non-residential customers**

I refer to the Independent Pricing and Regulatory Tribunal's (IPART's) discussion paper, *Discharge factors for non-residential customers – Towards a standardised approach*. We appreciate the opportunity to provide a submission on IPART's discussion paper.

We have supported IPART's pricing reforms where these have resulted in fairer and more equitable charging arrangements. However, IPART's proposal to set uniform sewerage usage discharge factors for the four metropolitan water utilities raises some concerns for Sydney Water.

The proposal does not recognize that Sydney Water already has strong incentives to set discharge factors appropriately and does so with regard to objectively justified data. In our view, a prescriptive approach to regulating discharge factors is not in our customers' interests. It is also inconsistent with our discussions with IPART to move to more incentive-based regulation that is principles based and market-focussed.

The accompanying submission details Sydney Water's method of setting discharge factors. In analysing IPART's proposal, it also suggests some ways that the current approach may be strengthened to improve customer outcomes.

Thank you for the opportunity to provide Sydney Water's views on this matter. We look forward to further consultation with you as the review progresses. For further information, the relevant contact is Kris Funston, Manager Competition & Regulation, who may be contacted on telephone (02) 8849 4856.

Yours sincerely

Sandra Gamble  
General Manager, Business Strategy & Resilience

# Setting discharge factors for non-residential customers

Sydney Water's response to IPART's discussion paper

October 2013

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# Executive summary

Sydney Water's vision is to provide 'valued water solutions'. An intrinsic part of this vision is to understand our customers' water servicing needs and to be customer responsive. The approach proposed by the Independent Pricing and Regulatory Tribunal (**IPART**) to standardise sewerage usage discharge factors (**SUDFs**) across the four metropolitan utilities may not be consistent with Sydney Water's objective to be a customer focused organisation.

Sydney Water's concerns with IPART's proposal include that,

- it is not based on substantive evidence that there is a pricing issue to be resolved
- Sydney Water currently sets SUDFs with regard to objective data and there are very few customer complaints, and
- Sydney Water has strong incentives to set SUDFs appropriately so that customers are not overcharged and refunds are not required.

Setting uniform SUDFs for the water utilities would be prescriptive regulation. This is inconsistent with our discussions with IPART to move to more incentive-based regulation that is principles-based and market-focussed. Sydney Water proposes, consistent with a principles-based approach, that IPART develops guidelines that provide the utilities with flexibility in setting discharge factors.

This submission responds to IPART's discussion paper *Discharge factors for non-residential customers* (**Discussion Paper**), and also addresses issues raised in an inter-agency meeting of the four water utilities and chaired by IPART. IPART's proposal was also considered at Sydney Water's Business Customer Forum. Members of the Forum, representing a range of industry associations, raised concerns that the cost of additional regulation, which must be met by customers, may outweigh any benefits.

## Customer satisfaction and Sydney Water analysis

Sydney Water receives very few queries or complaints from customers about their assigned discharge factor. For instance, in 2012-13, only 24 of 24,000 non-residential customers who pay sewerage usage charges (or just 0.1%) asked for a review of their discharge factor. Sydney Water varied the SUDF for 14 of these customers. The low number of customer requests for a review indicates that the current process is regarded as appropriate and therefore does not require major change.

IPART suggests in its discussion paper that the varying discharge factors applied by the water utilities is a legacy of the different pricing structures. This is not so in Sydney Water's case. We have based our discharge factors on an assessment of the discharges for 33% of our customers who account for an estimated 76% of non-residential wastewater flows.

## Setting discharge factors

Assessing and reviewing SUDFs is a dynamic business process. It requires information on different customer segments and total sewage flows to continually monitor and verify assumptions. Where Sydney Water does not have information on a customer's business type, we apply a standard or default SUDF of 78%. This is an average of flows by small to medium-size businesses.

The table below shows a breakdown of the current number of non-residential customer properties that have been assessed for wastewater discharge levels.

#### Number of customers with assessed and default SUDFs and flow weighted SUDF by customer segment

Non-residential customer segment	SUDF type	No. of customers	Water usage (2012-13 kL)	Discharge (2012-13 kL)	Average SUDF
<b>Non trade waste</b>	Assessed	11,620	13,818,004	9,270,570	67%
	Default	44,240	14,639,297	11,405,797	78%
<b>Commercial</b>	Assessed	11,210	40,913,768	34,036,349	83%
	Default	2,615	7,623,235	5,946,123	78%
<b>Industrial</b>	Assessed	622	19,733,879	13,553,434	69%
	Default	11	264,209	205,712	78%
<b>Total</b>		70,318	96,988,392	74,417,985	77%

Source: Sydney Water, BI(Prop&Consumption), Corporate billing system

#### Standardising SUDFs for the metropolitan water utilities

Sydney Water acknowledges that IPART sees value in harmonising charging regimes across NSW water utilities. Sydney Water has generally supported IPART's pricing reforms, but believes that the assumptions in the discussion paper will not result in fair SUDF assessments for all NSW non-residential customers. Sydney Water has validated assessments for many business processes and has reliable data for determining 'default' SUDFs. We believe that a better approach is for IPART to provide a guide for water utilities to develop:

- a default SUDF for commercial properties
- a default SUDF for industrial properties
- a list of standard discharge factors for business processes where verified data is available to validate the factor.

Sydney Water is willing to provide its data to IPART to develop the guidance material.

#### Customers with large meters, but low water usage

IPART is proposing a new formula for charging purposes to be applied to business customers that have a large meter, but a low water usage. Sydney Water does not believe that this approach can be objectively justified based on any empirical evidence.

Only 17 of the over 70,000 non-residential customers of Sydney Water have large water meters and low water usage. Of these customers, 15 have been assessed and assigned a site specific discharge factor. Sydney Water's existing approach of using a site specific SUDF therefore results in a customer's charges being cost-reflective.

# 1 Introduction

## 1.1 IPART's review of discharge factors

IPART did not address sewerage usage discharge factors (SUDFs) in its 2011 pricing structure review, but left the responsibility of setting these to the water utilities. However, IPART now considers there may be potential to standardise this element of wastewater pricing across the four metropolitan water utilities. IPART's case for a change, in the discussion paper, is based on the view that:

- customers who impose similar costs on a system should be charged similarly, and
- similar businesses in different water agency areas of operation should face similar SUDFs.

IPART is proposing that a business operating in each geographic area should expect to have the same discharge factor. In IPART's view, a published list of SUDFs will provide certainty and transparency for the water utilities' customers.

However, in contrast to a unit-based price determined by IPART, a discharge factor is a ratio that is estimated and used to calculate wastewater bills. Customers should be able to rely on a fair assessment being made of the discharge factor applicable to their property. IPART's proposal to set a list of SUDFs, but still allow Sydney Water to set business specific SUDFs, could create uncertainty and cause confusion for customers.

Sydney Water has over recent years sought to ensure that SUDFs, whether industry specific or based on an industry average, are based on objectively justified data. We apply knowledge of customers, assessment of total flows and estimated average discharge factors to verify SUDFs. Only 24 customers of the 24,000 non-residential customers (or 0.01%) have queried their SUDF in 2012-13. This indicates that the overwhelming majority of customers are satisfied with Sydney Water's assessment and setting of discharge factors.

## 1.2 Sewerage usage discharge factors in wastewater charging

A SUDF is used to calculate both the service and usage charge for non-residential properties. It is applied to the meter-based service to estimate the capacity of the sewerage system that is used by a customer.

A SUDF is also applied to calculate a customer's sewerage usage charges. The discharge factor is the estimated percentage of incoming water, as measured by the filtered, unfiltered and recycled water meter(s), which is discharged to sewer. Calculation of a customer's SUDF is shown below.

$$\text{SUDF} = \frac{\text{Volume of wastewater discharged}}{\text{total water use}} \times 100$$

(as measured by Sydney Water's meters)

The estimated volume of wastewater discharged is then multiplied by the sewerage usage price.

Sydney Water assigns a SUDF to each non-residential customer. For some customers the discharge factor has little or no impact on their wastewater bill. For example, a small business customer using less than 200kL a year of water with a 78% discharge factor and a 20mm meter (which has a SUDF of 100%) only pays the standard fixed sewerage service charge. This charge is currently \$570.70 a year and is the same charge as the standard residential customer wastewater service charge.

By comparison, a small increase or decrease in the discharge factor for a business customer with a large meter size and high water usage could have a significant impact on that customer's wastewater bill. An example of a variation of 5% to a large customer's SUDF is shown in Box 1.

#### Box 1: Varying the discharge factor for a large business customer

Example:

Water meter size: 80mm

Annual metered water usage: 50,000kL

SUDF	Wastewater service charge	Sewerage usage charge	Total wastewater bill
85%	\$54,731.30	\$10,128.46	\$64,859.76
90%	\$57,981.30	\$10,724.26	\$68,705.56
<b>Difference</b>	\$3,250.00	\$595.80	\$3,845.80

### 1.3 IPART's 2011 review of pricing structures

In 2011, IPART issued a discussion paper *Review of price structures for metropolitan water utilities*. The paper compared current water and wastewater charging arrangements by the four metropolitan water utilities and proposed that the divergence in approaches could not be justified.

In its 2012 Price Determination for Sydney Water, IPART issued principles for pricing structures. For non-residential sewerage usage and services charges IPART determined that:

- The non-residential sewerage usage charge is to be a standard variable charge for all customers set with reference to, but not necessarily equal to, the utility's short run marginal cost of transporting, treating and disposing of domestic-strength effluent
- The total sewerage revenue (usage and service charges) collected from non-residential customers is to reflect the costs incurred in servicing those customers.<sup>1</sup>

Sydney Water supported the pricing structure changes where these resulted in fairer and more equitable charging arrangements.

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<sup>1</sup> IPART, *Review of prices for Sydney Water Corporation's water, sewerage, stormwater drainage and other services. Water- Final Report*, June 2012

## Non-residential wastewater charges

The new wastewater pricing structure for non-residential properties was effective from 1 July 2012 as follows:

- a stand-alone property with a 20mm water meter receives the same wastewater service charge as a residential property. The SUDF is 100% for this meter size
- wastewater service charges for all other non-residential properties are based on their water meter size (and applicable SUDF)
- the discharge allowance is being gradually lowered from 500kL to 300kL by 2015-16 and will be reduced further to 150kL over the next regulatory period
- the sewerage usage price is decreasing by 10 cents/kL a year (nominal) from \$1.49/kL in 2011-12 to \$1.10/kL by 2015-16
- the chargeable sewer usage volume is the measured sewer usage volume less the discharge allowance.

The elements of wastewater bills are being transitioned to IPART's target pricing structure. The changes introduced by IPART from 1 July 2012 will affect customers differently over the course of the current and the next Determination period. Wastewater service charges will increase for meter sizes for 25mm and larger by about 54% over the current Determination. This increase will be partly offset by reducing usage charges due to a lower sewerage usage price. However, many small businesses will pay sewerage usage charges for the first time due to the lowering of the discharge allowance. These customers will therefore see their wastewater bills increase.

### 1.4 This submission

This submission considers IPART's proposed approach and the feasibility and practicality of applying common SUDFs to a range of business types operating in different geographic areas. It also provides some feedback from Sydney Water's engagement with business customers on IPART's proposal.

The structure of this paper is as follows:

- Section 2 outlines the components of wastewater charges and the customer impact of IPART's wastewater pricing structure changes
- Section 3 describes Sydney Water's processes for assessing and applying discharge factors to its different customer segments
- Section 4 considers IPART's proposed approach and the issues it raises for Sydney Water and its customers
- Section 5 outlines Sydney Water's planned review of its standard SUDFs and a suggested path to move toward a consistent approach by the water utilities in setting discharge factors, and
- Section 6 provides a table of the questions posed by IPART in its discussion paper and summarises Sydney Water's response to each.

## 2 Wastewater charges

### 2.1 Wastewater revenue from non-residential customers

Sydney Water's wastewater revenues from non-residential customers totalled \$176.6 million in 2012-13. This figure comprised service charges of \$85.1 million and sewerage usage charges of \$91.8 million.

As shown in Table 1, wastewater service charge revenue is forecast to increase over the next three years due to the increasing prices for larger water meters set by IPART in the current Determination.

In contrast, sewerage usage revenue is forecast to decline due to the downtrend in prices set by IPART.

**Table 1 Actual and forecast wastewater revenues from non-residential service and usage charges (\$m, nominal)**

Revenue	2012-13	2013-14 (budget)	2014-15*	2015-16*
Wastewater service charges	85.1	93.4	108.5	126.3
Sewerage usage charges	91.8	83.3	78.1	72.9
Total revenue	176.9	176.7	186.6	199.2

\* Forecast- CPI increase applied of 2.5% a year

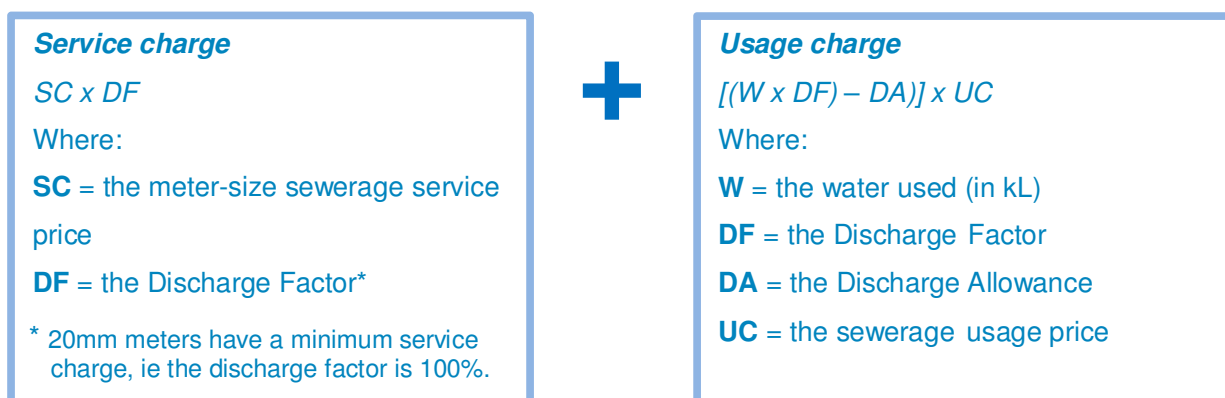
### 2.2 Wastewater pricing structure

IPART sets the maximum prices that Sydney Water can charge for the provision of wastewater services. Wastewater charges for non-residential customers comprise:

- a service charge based on water meter size
- a usage charge for estimated discharges to sewer.

The components and calculation of wastewater charges is shown in Figure 1.

**Figure 1 Components of non-residential wastewater charges**



As Figure 1 indicates, the discharge factor affects the service charge for meters larger than 25mm as well as the volume calculation for usage charges. It is important that the discharge factor reflects, as closely as practical, a customer's flows to sewer so that charges are appropriately applied across the non-residential customer base.

IPART has determined that the sewerage usage price should be transitioned towards the short run marginal cost. As a result, Sydney Water's sewerage usage prices are reducing each year as shown in Table 2 and are expected to be further lowered in the next pricing Determination.

### Discharge allowance

Prior to 1 July 2012, Sydney Water gave non-residential customers a 500kL a year discharge allowance. The current Determination reduces this allowance by 50kL a year. As Table 2 shows, the threshold is now 400kL a year and will be 300kL a year by the end of the current price path.

IPART intends to reduce Sydney Water's discharge allowance to 150kL a year in the next regulatory period. By comparison, Hunter Water, Gosford and Wyong Shire Councils did not have a discharge allowance prior to their current Determinations. IPART has introduced an allowance for these utilities that increases by 50kL a year up to 150kL a year. As a result, the discharge allowance for the four water utilities will be the same.

As Sydney Water's discharge allowance decreases by 50kL each year of the pricing path, the number of non-residential customers who incur sewerage usage charges will increase. However, as highlighted earlier, overall revenues from sewerage usage are forecast to decrease due to the reducing price per kilolitre.

**Table 2 Sewerage usage charges and discharge allowance**

	2012-13	2013-14	2014-15	2015-16
Sewerage usage price (\$kL, nominal)	1.40	1.30	1.20	1.10
Discharge allowance (kL/year)	450	400	350	300

## 2.3 Sewerage usage discharge factors

### Trade waste customers

Sydney Water has about 70,000 non-residential stand-alone customers connected to sewer. About 14,400 are trade waste industrial and commercial customers. Site specific discharge factors for about 620 industrial trade waste customers are individually assessed and reviewed quarterly or annually. For our 11,200 commercial trade waste customers, their SUDF is determined at the time of application for a connection to discharge trade wastewater. For trade waste customers, a SUDF is based either on a site-specific discharge factor from an on-site water balance or an industry standard discharge factor.

### Industry standard SUDFs

Sydney Water's customers include approximately 850 commercial buildings (high rise office accommodation), 230 accommodation hotels and 840 schools. We have assessed industry standard discharge factors for these and a number of other property types, including for shopping centres and arcade-style shopping centres.

Some of the industry standard discharge factors applied by Sydney Water are compared in Table 3 to the SUDFs proposed by IPART based on the NSW Office of Water (**NOW**) list.

**Table 3: Industry standard discharge factors**

Property type	Standard sewerage usage discharge factor (%)	NOW listing
Commercial office buildings	74	95
Accommodation hotels	90	100
Government schools	85	Not included
Shopping centres	86	85
Shopping arcades	98	Not included
Concrete batching plant	2	Not included
Nursery (garden)	2-5	Not included
McDonald restaurant	80	95
Butchers- retail	99	95

The difference in NOW's discharge factors to Sydney Water's assessed standard SUDFs may be explained by a regional variation between industry and business types. It could also be due to a different method being applied to measure non-residential flows and estimate discharge factors.

These differences indicate that considerable resources would be required to compile a list of SUDFs by business category as proposed by IPART. Even then, the metropolitan water utilities may be able to show that a uniform listing is not applicable to their respective customer bases.

#### Default SUDF

We apply a standard or default SUDF of 78% to non-trade waste business customers where we do not have information of the type of business being operated. These are generally small to medium-sized businesses with a small meter and low water usage. This default rate was set in 2006-07 following a review of the levels of discharge by the non-residential sector as a percentage of total metered water usage.

## 2.4 Impact of changes to the wastewater pricing structure

Prior to the 2012 IPART Determination, about 20,000 of Sydney Water's non-residential customers paid sewerage usage charges. Many small business customers did not pay sewerage usage charges as their flows to sewer were less than the 500kL a year discharge allowance. The default SUDF of 78% therefore had little impact on sewerage usage charges for these customers.

With the lowering of the discharge allowance to 150kL a year, Sydney Water estimates that an additional 10,000 businesses will become liable for sewerage usage charges. The majority of these will be small businesses with 20mm meters that receive a standard (minimum) service charge. Any change to the default SUDF therefore, will predominantly affect customers' sewerage usage charges.

It is also relevant to note that as the sewerage usage price decreases, a variation in the discharge factor for small customers will have a diminishing bill impact. It is important that the size of this potential bill impact is weighed against the resources needed to set and maintain business specific discharge factors.

## 3 Assessing discharge levels

### 3.1 History of discharge factors

Sewerage usage charges were introduced in 1986 and the then Water Board (Sydney Water) relied on a standard default discharge factor of 70%. The default SUDF was a starting point. It was based on modelling completed in 1984 and was applied to properties where a site specific discharge factor was yet to be established.

In 2006, the default SUDF was reassessed from 70% to 78% based on an analysis of the total wastewater discharge to sewer and total water usage of non-residential customers with an assessed or reviewed discharge factor.

The default SUDF of 78% took effect from 1 January 2007 and is applied to a segment of Sydney Water's non-residential customers:

- as a starting discharge factor for a new customer that is subsequently changed to a business-specific SUDF following a site inspection and discharge assessment, and
- where Sydney Water has no information of the type of business.

### 3.2 Setting discharge factors

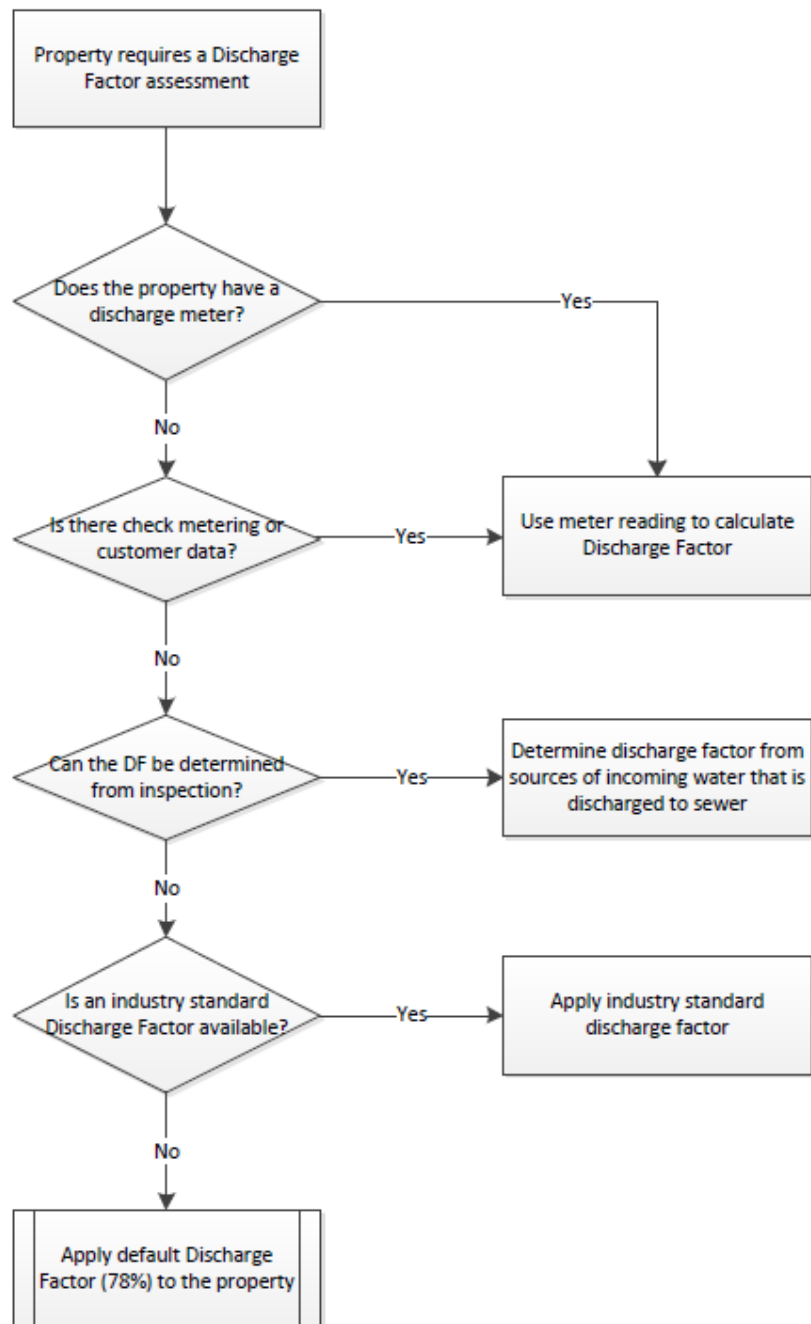
Discharge factors are assigned by Sydney Water using the hierarchy shown in Table 4.

**Table 4 Sydney Water's approach to assessing and setting SUDFs**

	Approach	Information used to assess SUDF
1	Customer installs a discharge meter. Sydney Water uses meter readings to calculate the discharge factor	This approach is used where there is a significant seasonal fluctuation, or no fixed correlation between the volume discharged to the wastewater system and the water supplied to the site (for example, due to onsite reuse, stormwater harvesting, sewer mining, importing liquids from other sites or use of bore water). The discharge factor may exceed 100%.
2	Site specific data provided by the customer	Sydney Water must agree in advance that the data collection method is valid. Sydney Water generally requires twelve months of data, but in some cases three months of data is sufficient. Examples of acceptable data include: <ul style="list-style-type: none"><li>– records of water used in the product. e.g. manufacturing data</li><li>– check meters installed to measure water use on site</li><li>– a site water balance.</li></ul>
3	Site specific calculation determined by Sydney Water	Sydney Water does site inspection(s) to determine the sources of incoming water discharged to sewer.
4	Industry standard discharge factor	Discharge factor estimated from reviews of discharge levels by similar businesses/properties.
5	Default discharge factor of 78%	Applied where the discharge factor cannot be determined by any of the above methods or Sydney Water has no details on the type of business at the property.

Figure 2 depicts a flow chart summarising this process.

Figure 2 Sydney Water's process of assessing and setting SUDFs



### 3.3 SUDFs by customer segment

Table 5 shows the current number of non-residential customer properties that have been assessed for wastewater discharge levels and assigned either a business specific or industry standard discharge factor, or a default SUDF.

**Table 5 Number of customers with assessed and default SUDFs and flow weighted SUDF by customer segment**

Non-residential customer segment	SUDF type	No. of customers	Water usage (2012-13 kL)	Discharge (2012-13 kL)	Average SUDF
<b>Non trade waste</b>	Assessed	11,620	13,818,004	9,270,570	67%
	Default	44,240	14,639,297	11,405,797	78%
<b>Commercial</b>	Assessed	11,210	40,913,768	34,036,349	83%
	Default	2,615	7,623,235	5,946,123	78%
<b>Industrial</b>	Assessed	622	19,733,879	13,553,434	69%
	Default	11	264,209	205,712	78%
<b>Total</b>		70,318	96,988,392	74,417,985	77%

Source: Sydney Water, BI(Prop&Consumption), Corporate billing system

Sydney Water has assessed 33% of its non-residential customers to assign business specific or an industry average SUDF. As shown in Table 6, these customers account for an estimated 76% of non-residential wastewater flows. Customers on the default SUDF account for less than a quarter of flows.

**Table 6 Number of customer with assessed SUDFs and percentage of flows**

SUDF type	No. of customers	Percentage of customers assessed	Water usage (2012-13 KL)	Discharge (2012-13 KL)
<b>Assessed</b>	23,452	33%	77%	76%
<b>Default</b>	46,866	67%	23%	24%

Source: Sydney Water, BI(Prop&Consumption), Corporate billing system

Sydney Water monitors water usage against calculated discharge flows for industrial customers on a quarterly and annual basis to identify where changes to flows may be occurring and SUDFs may need to be reviewed.

### 3.4 Case studies – Assessing industry standard discharge factors

#### Case study 1 - Industry SUDFs for commercial buildings and accommodation hotels

In 2004-05, Sydney Water completed a project to determine industry standard discharge factors for commercial buildings and accommodation hotels.

At that time, Sydney Water had received several requests to review discharge factors for large commercial buildings. These developments had evaporative cooling towers that consume large quantities of water. As a result, a significant proportion of incoming water is lost to the atmosphere and not discharged to sewer. Prior to this study, Sydney Water used a customer's cooling tower design calculations to vary the discharge factor. However, initial investigations found that cooling towers are unlikely to operate at optimum design conditions and tend to have leaks and overflows.

For the review, a commercial office building was defined as an air conditioned office building, with retail and food outlets accounting for no more than 10% of the total area, and having no residential accommodation.

A hotel was defined as an accommodation hotel and not a pub or bar, with the majority of water use associated with the accommodation of guests. At least one restaurant or food outlet and a bar were assumed to be located at the site.

Sydney Water selected five commercial building and five accommodation hotels based on the following criteria:

- location – buildings were chosen across Sydney to account for geographical variations
- water use and property size – building and hotels of various sizes and water consumption
- cost of modifying pipework for the installation of meters
- type and number of cooling towers on the property
- variety of hotels – some contained laundries, indoor and outdoor pools and extensive irrigation.

The review included the installation of check meters and data loggers for a minimum monitoring period of twelve months. This was necessary as the discharge factor varies with the wet bulb temperature (the lowest temperature that can be reached by evaporating water into the air) and it was important to account for seasonal variations. Discharge meters were also installed (where possible) on some buildings. Throughout the monitoring period results were calculated on the data collected from the meters.

### Review findings

The review found that the discharge factor for commercial office buildings varied between 63% and 86% across the customer sample. The percentage discharge was found to be highly dependent on the water usage practices of the building. No significant relationship was identified between the type of cooling tower and the discharge factor for the property. The wet bulb temperature was found to have a significant impact on the discharge factor. However, wet bulb temperatures across Sydney Water's area of operations did not differ sufficiently to justify industry standard discharge factors based on geographic areas.

For accommodation hotels, the measured discharge factor varied between 86% and 96%. The discharge factor was affected by outdoor pools in full sun, heated indoor pools and irrigation. The use of an in-house laundry had no significant effect on the discharge factor. There was also no significant relationship between the water consumed per room and the discharge factor.

This detailed review resulted in Sydney Water establishing an industry standard discharge factor for commercial buildings of 74% and 90% for accommodation hotels.

### Case study 2 - Industry SUDF for shopping centres

In 2008, Sydney Water investigated setting an industry standard discharge factor for shopping centres. At that time, there were over 280 shopping centres located within Sydney Water's area of operations, with 66% having a discharge factor of 90% or higher.

For this review, a shopping centre was defined as a group of stores within a complex that typically contained supermarkets, retail and food outlets. These complexes vary from small neighbourhood arcades to multi-level centres containing over 100 stores.

Sydney Water utilised fourteen comprehensive water audits of shopping centres that had been completed as part of its water efficiency program. The selected shopping centres ranged from 5,700 to 117,000 square metres of gross lettable area with an average of 33,000 patrons a day.

The water audits had required the installation of check meters and data loggers on the water supply to cooling towers, amenities, food preparation areas, shops and irrigation.

A review of these comprehensive water audits enabled Sydney Water to set an industry standard discharge factor of:

- 98% for shopping arcades with negligible water losses, that is, no cooling towers, irrigation, fountains or water displays, and
- 86% for shopping centres with evaporative cooling towers and/or irrigation losses.

### 3.5 Customers querying their SUDF

Only a very small percentage of customers contact Sydney Water to query their SUDF. In 2012-13 24 customers requested an assessment of their discharge factor. This indicates that the majority of some 24,000 customers who currently pay sewerage usage charges consider their assigned SUDF to be reasonable.

Sydney Water's general response to a customer query about their SUDF is to assess the existing factor based on our knowledge of discharge levels for similar businesses. If the customer objects to the SUDF proposed by Sydney Water following this assessment, we:

- agree with the customer the data that is needed to assess a business specific SUDF, and
- leave the decision to the customer as to how they will provide this data. This could be by installing discharge meters, or as a lower cost option, installation of check meters to measure water usage eg. for external watering.

This approach places the responsibility on the customer to demonstrate discharge levels by objective measurement. Importantly, this ensures that customers accept results that are gained independently to Sydney Water.

### 3.6 Customer refunds

When Sydney Water reviews and subsequently reduces a customer's SUDF, we may provide a refund. Refunds can be significant. This provides a strong incentive for Sydney Water to regularly review and validate the standard SUDFs.

IPART's Discussion Paper does not consider whether its proposed list of SUDFs would over-ride the current practice of refunding customers where a customer's SUDF is shown to have been too high.

### 3.7 Disputes

Where a customer is not satisfied with Sydney Water's response, the customer can lodge a complaint with the Energy and Water Ombudsman (EWON) for external dispute resolution.

### 3.8 NSW Office of Water list

The NOW list of SUDFs in IPART's Discussion Paper was in part sourced from Sydney Water prior to our review of discharge factors that commenced in 2004-05. Since that time, Sydney Water has expended considerable resources on improving its processes to assess and set discharge factors. This work has included quantifying SUDFs for a number of customer/property types and building an information base on customer discharge levels. We therefore consider that Sydney Water's original data that may have informed the NOW list is out-dated based on the more up-to-date information we have obtained.

### 3.9 SUDFs in other regulatory jurisdictions

Where sewerage usage charges apply in the pricing structure of other major water utilities, the SUDFs are not determined by the regulators. Similar to Sydney Water, assessment and application of SUDFs is the responsibility of the water utility. For example, City West Water Corporation (Victoria) and Water Corporation of Western Australia apply either a default SUDF or a business specific SUDF based on their assessment of a customer's discharge levels.

## 4 Issues with IPART's proposed approach

### 4.1 Customer feedback

IPART's proposal was considered at Sydney Water's Business Customer Forum. The members of this Forum, who represent a range of industry associations, are shown in Appendix 1.

The predominant concern of members was that the costs of additional regulation, which are ultimately met by customers, do not appear to be justified. The members were interested to know IPART's rationale for considering regulation of discharge factors as a priority and questioned the efficiency of trying to measure and monitor the discharge levels of many business types.

### 4.2 Can one list be applied to different geographic areas?

IPART's proposed prescriptive approach to setting SUDFs for an extensive list of business types assumes homogeneity in property configuration of businesses and property usage across the four metropolitan water utilities.

However, we do not believe this to be the case. Sydney has a higher density development than the Central Coast and the Hunter Water regions. Property types are more varied and complex and discharges need to be assessed accordingly. For instance, there are more properties in Sydney that have cooling towers which affect discharge percentages. However, where large buildings change from cooling towers to chilled beam technology, the discharge factor alters. A further difference in Sydney is the large number of commercial developments that accommodate multiple business tenants.

### 4.3 Assessment of flows

IPART is seeking feedback on whether the customer should pay to have a discharge factor assessed. Sydney Water is not in favour of imposing a set fee and considers that its current process outlined in section 3.2 is effective.

Issues relevant to charging customers include that a site inspection by Sydney Water may not be sufficient to gather evidence to support a change in a customer's SUDF. We also note that customers may not accept Sydney Water's assessment.

Sydney Water's current approach is more flexible. Customers who do not accept a discharge factor based on a standard SUDF can choose to provide evidence of discharge levels.

### 4.4 The need for a default SUDF

As discussed in section 3, Sydney Water has information on the business type of some customer segments, such as trade waste customers. However, we do not receive information on the business type of the majority of small and medium businesses. It is not practical or feasible to list or verify a discharge factor for every business type. An average SUDF is therefore needed to apply to these businesses. A default rate is also needed to apply to new customers until such time as an assessment may be completed.

Sydney Water's default SUDF is 78%. IPART has questioned whether this figure can be justified and has suggested that the figure may be closer to 90%. We note that IPART does not have data to support this view, whereas Sydney Water's default SUDF was based on an assessment of customers' average flows. In the next section of this submission we outline a plan to review and validate the current default SUDF.

### 4.5 A guideline or increase in regulation?

To-date, IPART has not regulated discharge factors, but has left these to the discretion of the water utilities. It is not clear from IPART's discussion paper how the water utilities would comply

with a regulated list of SUDFs and whether these would over-ride water utilities' customer assessments.

Sydney Water questions whether this prescriptive regulatory approach can be justified on the grounds of business efficiency or customer benefits given the potential costs it would impose on Sydney Water. We also note the practical considerations of regulating SUDFs specific to an extensive range of business types where:

- the SUDF is an estimate of the level of discharge, not a precise measure
- the level of discharge for customers varies over time (eg. due to seasonality, technology changes)
- utilities do not receive information on all customers' business types, and
- changes in a customer's business type may result in discharge levels varying slightly.

In Sydney Water's view, further consideration needs to be given to the practical issues of regulating SUDFs and whether the benefits of the proposed changes outweigh the costs of imposing more prescriptive regulation. A possible more effective and less prescriptive approach may be for IPART to provide a guide for water utilities to develop standard SUDFs relevant to their business customers.

#### 4.6 Average discharge factors in a postage stamp pricing regime

The cost of servicing customers differs greatly across wastewater systems and there are significant cross subsidies between customers under the postage stamp pricing regime. This raises the issue of balancing precision – that is, fine tuning prices for individual customers or customer segments – against the costs of doing so.

A non-residential customer's discharge levels may vary slightly to their assigned standard or default SUDF. In the context of postage stamp pricing, this potential variation does not seem unreasonable provided that the discharge factor is based on the average flows of a representative customer segment.

#### 4.7 Cost reflective pricing

In its 2011 review<sup>2</sup>, IPART stated goal was to continue to move toward cost reflective pricing and to remove cross subsidies between customer groups. However, in its analysis of pricing options IPART noted that,

*Cost-reflective price structures are harder to achieve for non-residential properties because of the disparate nature of businesses compared to residential properties. (p36)*

However, a prescriptive, uniform solution to SUDFs as proposed by IPART could have the opposite effect to that intended by imposing charges on NSW business customers that are not cost reflective.

#### 4.8 Risks of IPART's proposed approach

##### Revenue risk

Sydney Water seeks to ensure that it can justify the SUDF used to calculate a customer's sewerage usage charges. Where SUDFs are not based on verifiable assessments, Sydney Water considers its sewerage usage revenues may be at risk.

##### Credibility of SUDFs applied

Sydney Water has very strong existing incentives to ensure that the sewerage usage charges levied on non-residential customers are defensible. We anticipate a significant increase in

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<sup>2</sup> IPART, *Review of price structures for metropolitan water utilities*, Water — Discussion Paper, June 2011.

customer complaints and queries if we are required to increase SUDFs to levels that have not been verified.

The number of complaints and associated administration costs would also increase if customers are no longer confident that SUDFs are based on average flows of a representative sample of businesses.

A further consideration is that business processes change over time. Through its process of monitoring and reviewing SUDFs, Sydney Water is able to demonstrate to customers that SUDFs are based on current customer and industry assessments.

#### Customer refunds

A list imposed by IPART may create a contingent liability for Sydney Water. Based on previous practice, customers able to demonstrate that their discharge factor has been overstated were able to seek a refund from Sydney Water.

The question that arises is, how would customers be treated if they could demonstrate that IPART's discharge factors overstated their discharge levels? As with our past practice, could customers seek a refund from Sydney Water on the basis of a prescribed measure set by the regulator? Such an outcome highlights the regulatory risk associated with the proposal.

### 4.9 IPART's proposed approach to charging businesses with a large water meter, but low water usage

IPART is proposing a new formula to be applied to business customers that have a large meter, but low water usage. The example given by IPART has arisen because the customer's service includes capacity for fire fighting.

Sydney Water has 17 customers connected to the wastewater system who have large water meters but low water usage. Fifteen of these properties have a site specific discharge factor.

Sydney Water's connection policy allows for unmetered water connections for fire services as long as this supply is only used for fire fighting, system testing and servicing. Unmetered water connections that supply fire sprinklers, hydrants or drenchers must not be connected to any other domestic or commercial water-using fixture, including fire hose reels. Water used by fire hose reels must be metered.

For properties under development where a large water meter remains on site to maintain fire services during construction, Sydney Water applies a discharge factor of 1%. This discharge factor is reassessed when the development is finished and resumes water use.

Sydney Water does not support IPART's approach of setting a new tariff for a very small number of customers. Sydney Water's existing approach of applying a site specific SUDF ensures that these customers wastewater charges are cost-reflective.

## 5 Proposed review of standard discharge factors

### 5.1 Opportunity for business improvement

Sydney Water has carefully considered IPART's discussion paper and its proposed approach to prescribe an extensive, standard list of discharge factors in its water utility pricing determinations.

Sydney Water agrees with IPART that it is important that, as far as practically possible, customers' charges are cost reflective. It is also important that customers can be confident that the components of their wastewater charges are equitable and can be justified by the utility calculating their bills. We have strong existing incentives to ensure these measures are correct.

IPART's proposed approach is not based on any empirical evidence and if implemented could impose costs for very little, if any, demonstrated customer benefit. It could ultimately result in Sydney Water receiving a large number of ongoing customer complaints about discharge factors.

Sydney Water has therefore considered how its current approach to setting discharge factors could be improved so that IPART can be confident that customers' charges are equitable and cost reflective.

Sydney Water's plans to achieve this outcome are outlined below.

### 5.2 Proposed review of industry standard discharge factors

As we transition to IPART's target wastewater pricing structure, an increasing number of non-residential customers will pay usage charges. Sydney Water estimates that additional 10,000 small business customers will be paying sewerage usage charges by the time the discharge allowance is reduced to 150kL a year.

Sydney Water is reviewing its current approach to setting standard SUDFs with a view to updating data and identifying process improvements. This may include expanding the current list of industry standard discharge factors. The objective of the review is to demonstrate that:

- industry standard discharge factors have been derived from a robust assessment process
- the latest data on water usage and sewage flows has been used, including to estimate total non-residential flows and cross check flow assumptions
- discharge factors for different customer segments are equitable
- Sydney Water will continue to be customer responsive in assessing and reviewing discharge factors.

### 5.3 Proposed review of the default SUDF

Sydney Water's current default SUDF of 78% is an estimated average rate that is applied to a large number of small and medium business customers. We accept that there is a variation in actual discharges for the customers to whom this rate is applied.

Sydney Water is therefore proposing to investigate refining its default SUDF and potentially estimating separate default ratios for commercial and industrial customers. This will involve assessing the volume of discharge to sewer for a sample of customers in each category. Sydney Water is not planning to change its approach during the current determination period, but will detail its findings and proposed SUDFs in its next pricing submission.

## 6 Responses to IPART's Discussion Paper

Table 7 IPART's questions

Question	Sydney Water response
1	<p><i>Do you consider that small business discharge factors should be standardised across the metropolitan water utilities?</i></p> <p>Sydney Water acknowledges that IPART sees value in harmonising charging regimes across NSW water utilities. Sydney Water has generally supported IPART's pricing reforms, but believes that the assumptions in IPART's Discussion Paper will not result in fair SUDF assessments for all NSW non-residential customers.</p> <p>Sydney Water has validated assessments for many business processes and has reliable and objectively justified data for determining 'default' SUDFs. We believe that a better approach is for IPART to provide a guide for water utilities to develop:</p> <ul style="list-style-type: none"> <li>• a default SUDF for commercial properties</li> <li>• a default SUDF for industrial properties</li> <li>• a list of standard discharge factors for business processes where verified data is available to validate the factor.</li> </ul> <p>Sydney Water is willing to provide its data to IPART to develop the guidance material.</p>
2	<p><i>If so, what are your views on the proposed two-part approach to discharge factors?</i></p> <p>Sydney Water does not support an extensive list of discharge factors being set for the four metropolitan utilities. Sydney Water can see no evidence that the customer benefits justify the increased costs of this additional pricing regulation. We believe it represents more prescriptive regulation being imposed for little, if any, customer benefit. IPART's proposed two-tier system also has a number of practical challenges, including that:</p> <ul style="list-style-type: none"> <li>• Sydney Water does not hold information on the business type of many of its customers, that is, non-trade waste customers with small meters</li> <li>• A default discharge factor is still required to apply to these smaller customers and also to new customers until such time as an assessment may be completed</li> <li>• IPART's proposal to set a list of SUDFs, but still allow Sydney Water to set business specific SUDFs could create uncertainty and cause confusion for customers resulting in increased customer complaints.</li> </ul>
3	<p><i>Is the NSW Office of Water list of small business discharge factors suitable?</i></p> <ul style="list-style-type: none"> <li>– <i>What Discharge Factors would you change?</i></li> <li>– <i>Which would you add or consolidate?</i></li> </ul> <p>In Sydney Water's view, the NOW list of SUDFs is not suitable to be applied across the four regions and has not been validated for Sydney Water's customer base.</p> <p>We question the assumption that development in regional centres is similar for charging purposes to the high density non-residential development in the Sydney metropolitan area. For example, in Sydney, a higher percentage of properties accommodate multiple businesses.</p>

4	<p><i>Do you agree the requesting customer should pay for individual assessments or should these be borne by the rest of the customer base through period charges?</i></p> <p>Sydney Water is not in favour of imposing a set fee for customer assessments and considers that its current process is efficient and is generally accepted by customers. See section 3.2 for details.</p>
5	<p><i>Is the 10% variance threshold suitable?</i></p> <p>As noted above, Sydney Water does not support IPART's proposal to set specific discharge factors for a range of businesses. Sydney Water is also not in favour of applying a broad band of variance to determine whether it will consider changing a customer's discharge factor to a more representative level.</p> <p>Varying SUDFs only where a 10% variance applies is unlikely to be accepted as equitable by our customers and would not be consistent with efforts to base SUDFs on objective justified data.</p>
6	<p><i>Do you propose any alternative approach to discharge factors? If so, why?</i></p> <p>The low number of customer requests for review indicates that Sydney Water's current process for assessing and setting SUDFs is generally regarded as equitable and does not require major change.</p> <p>As noted in our response to Question 1, a better approach to achieve consistency in the pricing structures of the four water utilities may be for IPART to provide a guide on developing standard industry and default SUDFs. These SUDFs would need to be based on verified data relevant to the utilities' respective customer bases.</p>
7	<p><i>Do you agree with the formula being considered for customers in this situation, or do you have an alternative solution?</i></p> <p>IPART's proposed formula would be a new tariff and would be costly to implement. Sydney Water does not believe that this regulation is justified to address the circumstances of a small number of customers as described by IPART. It is also noted that the example given by IPART is not in Sydney Water's area of operations.</p> <p>Sydney Water has 17 customers with large water meters and low water usage. Fifteen of these customers have already been assessed and assigned a site specific discharge factor. Sydney Water's existing approach of using site specific SUDF ensures that a customer's charges are cost-reflective.</p>
8	<p><i>Should IPART specify a formula in subsequent determinations or leave it to the utilities to come up with one of their own?</i></p> <p>See response to Question 7 above.</p>
9	<p><i>Are you aware of other cases that breach IPART's price structure principles?</i></p> <p>No.</p>

# Appendix 1    Sydney Water Business Customer Forum

## Membership

- NSW Business Chamber
- Australian Industry Group
- Restaurant and Catering, NSW
- Shopping Centre Council of Australia
- Australian Institute of Metal Finishing & Master Electroplaters Association
- Plastic and Chemicals Industries Association (PACIA)
- Australian Pulp and Paper Industry and Trades Association
- Australian Sustainable Business Network
- University of Western Sydney
- Waste Contractor & Recyclers Association of NSW
- Property Council of Australia - NSW
- Australian Beverages Council
- Accommodation Association of Australia
- Australian Food and Grocery Council