

SA Water  
Regulatory  
Business  
Proposal  
2016-2020

# **Attachment K**

## **Required Revenue data tables, SA Water**

# Required Revenue Supporting Information

## 1. Weighted Average Depreciation

### Support for our approach

We updated the regulatory and tax useful lives of each asset class to 1 July 2016 based on a weighted average approach. Other approaches considered were treating the second regulatory period as years 4-7 of the first regulatory period, applying the same average remaining lives for 1 July 2016 as for 1 July 2013, applying revised accounting asset lives for 1 July 2016 or back solving average remaining lives for 1 July 2016 to maintain the previous level of depreciation.

The weighted average approach was preferred as it:

- Provides the most reasonable outcome for customers in terms of price impacts
- Is fairer on customers over time by avoiding intergenerational bias in payments for assets utilised to provide services
- Provides a stable depreciation path (annual growth in depreciation is brought closer in line with annual growth in customers)
- Is consistent with interstate regulatory practice
- Is relatively simple to calculate and replicate
- Can apply to determination periods of any length, and
- Was supported by external advice.

The weighted average approach rolls each year's capital expenditure into the value of initial assets from the first regulatory period, to create a new initial asset base for the start of the second regulatory period. A worked example for water corporate depreciable assets is provided below.

### Worked example

Water corporate depreciable assets are broken up into 4 groups:

1. initial assets (existing at 1 July 2013)
2. capital additions made in 2013-14
3. capital additions made in 2014-15
4. capital additions made in 2015-16.

Each of these groups has a different value (D) and remaining useful life (G) at the close of the first regulatory period.

- The closing value of each group is calculated by subtracting disposals and depreciation from the opening value ( $A - B - C = D$ ).

- The proportion of the group closing value to the total closing value is then calculated (e.g.  $1D \div 5D \times 100 = 1H$ ).
- The closing remaining life is calculated by subtracting the number of years passed from the opening life ( $E - F = G$ ).
- The proportion of the total closing value is then multiplied by the closing remaining life resulting in a weighted closing remaining life for each asset group at the end of the first regulatory period ( $H \times G = I$ ).

The closing values and the weighted closing remaining lives of each group are then summed to reach the total closing value (5D) and the total closing remaining life (5I). These closing values become the opening values for initial water corporate depreciable assets for the second regulatory period.

	Opening value*	Depreciation for first regulatory period*	Disposals*	Closing value*	Proportion of total closing value	Opening remaining life**	Years passed	Closing remaining life**	Weighted closing remaining life**
	(A)	(B)	(C)	(D)	(H)	(E)	(F)	(G)	(I)
1. Initial assets	95.4	41.6	1.4	52.4	58%	6.8	3.0	3.8	2.2
2. Capital additions 2013-14	20.8	3.5	N/A	17.2	19%	14.7	2.5***	12.2	2.3
3. Capital additions 2014-15	10.1	1.0	N/A	9.1	10%	14.7	1.5***	13.2	1.3
4. Capital additions 2015-16	12.6	0.4	N/A	12.1	13%	14.7	0.5***	14.2	1.9
5. Total	138.8	46.6	1.4	90.9	100%				7.7

\*Dec 2014 real \$ ('million)

\*\*years

\*\*\*All capital assumed to be incurred 31 December

## 2. Our Water Service

### Indexation of initial water RAB value to December 2014 dollars - by asset class

Supports the opening value in Table 7.3 of the Regulatory Business Proposal 2016

Water asset class	Initial RAB value Dec 2012 real \$ (million)	Initial RAB value Dec 2014 real \$ (million)*
Pipes	4,211.2	4,441.7
Non-pipes	1,724.8	1,819.2
ADP	1,437.6	1,516.3
ADP shorted lived assets	0.0	0.0
Corporate depreciable	90.4	95.4
Corporate non-depreciable	303.0	319.6
<b>Total water RAB</b>	<b>7,767.1</b>	<b>8,192.1</b>

\* CPI (weighted average of 8 capital cities) is applied on a 9 month lag. We converted the values from December 2012 to December 2014 based on observed CPI from March 2012 to March 2014, which was 5.5%.

## Roll forward of water RAB values - by asset class

Provides further detail by asset class for Tables 7.3, 7.4 and 7.6 of Regulatory Business Proposal 2016.

Asset Class*/**	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20
<b>Water Pipes</b>							
Opening value	4,441.7	4,434.5	4,419.0	4,401.2	4,401.8	4,422.3	4,426.7
Capital expenditure	66.2	58.5	56.8	74.8	95.6	80.2	75.3
Disposals	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Depreciation	-73.4	-74.0	-74.6	-74.2	-75.0	-75.9	-76.6
<b>Closing value</b>	<b>4,434.5</b>	<b>4,419.0</b>	<b>4,401.2</b>	<b>4,401.8</b>	<b>4,422.3</b>	<b>4,426.7</b>	<b>4,425.3</b>
<b>Water Non-pipes</b>							
Opening value	1,819.2	1,823.6	1,848.1	1,889.8	1,916.9	1,968.3	1,981.0
Capital expenditure	61.0	82.2	100.8	84.0	109.8	72.5	55.2
Disposals	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Depreciation	-56.6	-57.7	-59.1	-56.9	-58.5	-59.8	-60.8
<b>Closing value</b>	<b>1,823.6</b>	<b>1,848.1</b>	<b>1,889.8</b>	<b>1,916.9</b>	<b>1,968.3</b>	<b>1,981.0</b>	<b>1,975.4</b>
<b>Water ADP</b>							
Opening value	1,498.4	1,572.5	1,576.7	1,565.5	1,535.8	1,506.1	1,476.4
Capital expenditure	101.9	33.3	18.3	0.0	0.0	0.0	0.0
Disposals	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Depreciation	-27.9	-29.1	-29.5	-29.7	-29.7	-29.7	-29.7
<b>Closing value</b>	<b>1,572.5</b>	<b>1,576.7</b>	<b>1,565.5</b>	<b>1,535.8</b>	<b>1,506.1</b>	<b>1,476.4</b>	<b>1,446.7</b>
<b>Water ADP short-lived</b>							
Opening value	17.8	17.5	17.2	19.1	17.8	9.6	11.0
Capital expenditure	0.0	0.0	2.3	3.9	3.7	6.0	12.4
Disposals	0.0	0.0	0.0	0.0	-7.1	0.0	0.0
Depreciation	-0.3	-0.3	-0.3	-5.2	-4.8	-4.6	-5.6
<b>Closing value</b>	<b>17.5</b>	<b>17.2</b>	<b>19.1</b>	<b>17.8</b>	<b>9.6</b>	<b>11.0</b>	<b>17.9</b>
<b>Water Corporate Depreciable</b>							
Opening value	95.4	100.1	94.7	90.9	95.3	97.3	99.3
Capital expenditure	20.8	10.1	12.6	16.8	15.4	16.6	8.9
Disposals	-1.4	0.0	0.0	0.0	0.0	0.0	0.0
Depreciation	-14.6	-15.6	-16.4	-12.4	-13.4	-14.5	-15.4
<b>Closing value</b>	<b>100.1</b>	<b>94.7</b>	<b>90.9</b>	<b>95.3</b>	<b>97.3</b>	<b>99.3</b>	<b>92.9</b>
<b>Water Corporate Non-depreciable</b>							
Opening value	319.6	311.0	325.9	324.8	323.9	325.9	327.8
Capital expenditure	0.0	16.0	0.0	0.1	3.1	3.0	3.0
Disposals	-8.7	-1.1	-1.1	-1.1	-1.1	-1.1	-1.1
Depreciation	0.0	0.0	0.0	0.0	0.0	0.0	0.0
<b>Closing value</b>	<b>311.0</b>	<b>325.9</b>	<b>324.8</b>	<b>323.9</b>	<b>325.9</b>	<b>327.8</b>	<b>329.8</b>
<b>TOTAL</b>							
Opening value	<b>8,192.1</b>	<b>8,259.2</b>	<b>8,281.6</b>	<b>8,291.4</b>	<b>8,291.6</b>	<b>8,329.5</b>	<b>8,322.2</b>
Capital expenditure	<b>249.9</b>	<b>200.1</b>	<b>190.8</b>	<b>179.6</b>	<b>227.6</b>	<b>178.2</b>	<b>154.9</b>
Disposals	<b>-10.0</b>	<b>-1.1</b>	<b>-1.1</b>	<b>-1.2</b>	<b>-8.1</b>	<b>-1.2</b>	<b>-1.1</b>
Depreciation	<b>-172.8</b>	<b>-176.6</b>	<b>-179.9</b>	<b>-178.4</b>	<b>-181.4</b>	<b>-184.5</b>	<b>-188.1</b>
<b>Closing value</b>	<b>8,259.2</b>	<b>8,281.6</b>	<b>8,291.4</b>	<b>8,291.6</b>	<b>8,329.5</b>	<b>8,322.2</b>	<b>8,287.9</b>

\* Dec 2014 real \$ ('million)

\*\* Numbers in this table may not add due to rounding

### Return on asset calculation

Supports section 7.5.1 of Regulatory Business Proposal 2016.

Return on Asset*	2016-17	2017-18	2018-19	2019-20
Value of assets on which year-end return is given**	8,380.7	8,401.2	8,418.1	8,399.1
Regulatory rate of return	4.2%	4.2%	4.2%	4.2%
Year-end return***	352.0	352.9	353.6	352.8
Mid-year return****	344.8	345.6	346.2	345.5

\* Dec 2014 real \$ ('million)

\*\* The value of assets on which year-end return is given is calculated by taking the opening value of assets plus half of the capital additions and less half of the disposals for that year

\*\*\* The year-end return is calculated by multiplying the value of assets on which year-end return is given by the regulatory rate of return

\*\*\*\* The mid-year return is calculated by discounting the year-end return by half a year's regulatory rate of return. This is the value of return allowed for in the building blocks revenue calculation.

### 3. Our Sewerage Service

#### Indexation of initial sewerage RAB value to December 2014 dollars- by asset class

Supports the opening value in Table 11.3 of the Regulatory Business Proposal 2016

Sewerage asset class	Initial RAB value Dec 2012 real \$ (million)	Initial RAB value Dec 2014 real \$ (million)*
Pipes	2,240.5	2,363.1
Non-pipes	1,151.1	1,214.1
Corporate depreciable	91.9	96.9
Corporate non-depreciable	101.1	106.6
<b>Total sewerage RAB</b>	<b>3,584.5</b>	<b>3,780.7</b>

\* CPI (weighted average of 8 capital cities) is applied on a 9 month lag. We converted the values from December 2012 to December 2014 based on observed CPI from March 2012 to March 2014, which was 5.5%.

#### Roll forward of sewerage RAB values - by asset class

Provides further detail by asset class for Tables 11.3, 11.4 and 11.6 of Regulatory Business Proposal 2016.



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Asset Class*/**	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20
<b>Sewerage Pipes</b>							
Opening value	2,363.1	2,338.2	2,321.2	2,311.1	2,292.8	2,275.0	2,259.5
Capital expenditure	11.3	19.3	26.5	18.2	18.9	21.4	24.6
Disposals	-	-	-	-	-	-	-
Depreciation	-36.2	-36.4	-36.6	-36.5	-36.7	-36.9	-37.1
<b>Closing value</b>	<b>2,338.2</b>	<b>2,321.2</b>	<b>2,311.1</b>	<b>2,292.8</b>	<b>2,275.0</b>	<b>2,259.5</b>	<b>2,246.9</b>
<b>Water Non-pipes</b>							
Opening value	1,214.1	1,236.6	1,280.4	1,334.3	1,361.8	1,412.0	1,481.5
Capital expenditure	66.1	89.0	101.2	74.2	98.7	120.3	103.4
Disposals	-	-	-	-	-	-	-
Depreciation	-43.6	-45.3	-47.3	-46.7	-48.5	-50.8	-53.2
<b>Closing value</b>	<b>1,236.6</b>	<b>1,280.4</b>	<b>1,334.3</b>	<b>1,361.8</b>	<b>1,412.0</b>	<b>1,481.5</b>	<b>1,531.7</b>
<b>Sewerage Corporate Depreciable</b>							
Opening value	96.9	96.8	91.4	87.7	92.0	93.9	96.0
Capital expenditure	15.2	10.1	12.6	16.8	15.4	16.6	8.9
Disposals	-0.6	-	-	-	-	-	-
Depreciation	-14.7	-15.5	-16.3	-12.4	-13.5	-14.6	-15.4
<b>Closing value</b>	<b>96.8</b>	<b>91.4</b>	<b>87.7</b>	<b>92.0</b>	<b>93.9</b>	<b>96.0</b>	<b>89.5</b>
<b>Sewerage Corporate Non-depreciable</b>							
Opening value	106.6	106.6	106.1	105.7	105.2	104.7	104.2
Capital expenditure	-	-	-	-	-	-	-
Disposals	-	-0.4	-0.5	-0.4	-0.5	-0.5	-0.5
Depreciation	-0.0	-0.0	-0.0	-0.0	-0.0	-0.0	-0.0
<b>Closing value</b>	<b>106.6</b>	<b>106.1</b>	<b>105.7</b>	<b>105.2</b>	<b>104.7</b>	<b>104.2</b>	<b>103.8</b>
<b>TOTAL</b>							
Opening value	3,780.7	3,778.2	3,799.1	3,838.7	3,851.8	3,885.7	3,941.1
Capital expenditure	92.7	118.5	140.3	109.1	133.1	158.2	136.9
Disposals	-0.6	-0.4	-0.5	-0.4	-0.5	-0.5	-0.5
Depreciation	-94.6	-97.2	-100.2	-95.6	-98.7	-102.3	-105.7
<b>Closing value</b>	<b>3,778.2</b>	<b>3,799.1</b>	<b>3,838.7</b>	<b>3,851.8</b>	<b>3,885.7</b>	<b>3,941.1</b>	<b>3,971.8</b>

\*Dec 2014 real \$ ('million)

\*\* Numbers in this table may not add due to rounding

### Return on asset calculation

Supports section 11.5.1 of Regulatory Business Proposal 2016.

Return on Asset*	2016-17	2017-18	2018-19	2019-20
Value of assets on which year-end return is given**	3,893.0	3,918.1	3,964.5	4,009.3
Regulatory rate of return	4.2%	4.2%	4.2%	4.2%
Year-end return***	163.5	164.6	166.5	168.4
Mid-year return****	160.2	161.2	163.1	165.0

\* Dec 2014 real \$ ('million)

\*\* The value of assets on which year-end return is given is calculated by taking the opening value of assets plus half of the capital additions and less half of the disposals for that year

\*\*\* The year-end return is calculated by multiplying the value of assets on which year-end return is given by the regulatory rate of return

\*\*\*\* The mid-year return is calculated by discounting the year-end return by half a year's regulatory rate of return. This is the value of return allowed for in the building blocks revenue calculation.