

Revaluation 2023

Public Buildings Committee

Practice Note 20 Valuation of Waste Water Treatment Works

1.0 Introduction

- 1.1 This Practice Note deals with the valuation of Waste Water Treatment Works (WWTW), including septic tanks, which serve areas with a Design Population Equivalent (DPE) not exceeding 8 000. DPE figures are calculated using the “notional population” comprising resident population, a percentage of transient population, liquor input and trade waste and are provided by Scottish Water on a central basis. Guidance is also given on the valuation of WWTW carried out using a full Contractor’s Basis.

2.0 Basis of Valuation

- 2.1 Subjects covered by this Practice Note should be valued on the Contractor’s Basis. An abbreviated Contractor’s Basis valuation can be carried out using the table of rates in Appendix A where no information is readily available on file to enable a full Contractor’s Basis valuation.
- 2.2 All WWTW where the DPE exceeds 8,000 should be valued on a full Contractor’s Basis using costs appropriate for the tone date of 1st April 2022 having regard to Basic Principles Committee Practice Note 2 and Public Buildings Committee Practice Note 4, where appropriate.

3.0 Survey and Measurement

- 3.1 If carrying out a full Contractor’s Basis valuation, details of all rateable items will be required.
- 3.2 Building areas should be calculated on a gross external basis (GEA) for each main floor.
- 3.3 Site area should be calculated together with the areas of any car parks, roadways and other paved or landscaped surfaces. Measurements and details of boundary walls, fences and any other items in the nature of external works, civil works and plant and machinery should also be noted.

4.0 Building and External Works Costs

The unit cost rates contained in the Rating Cost Guide Scotland have been derived to reflect a £4,000,000 contract size and tone date of 1 April 2022.

5.0 Valuation

5.1 Full Contractor's Basis Valuations should be carried out in accordance with SAA Basic Principles Committee Practice Note 2 (Contractor's Basis Valuations). See 6.0 below.

5.2 Where insufficient detail is available, the DPE may be used, if below 8,000, as the unit of measurement to determine Estimated Replacement Cost using the table of rates shown in Appendix A. The rates detailed include all common rateable items at the subject exclusive of land value, and include contract size and fees adjustments.

5.3 For External Works see 6.2.

5.4 Classifications

WWTW are classified according to the level of treatment which is provided – broadly tertiary, secondary and primary treatment, and septic tanks. Descriptions of the various types of treatment are at Appendix D of this practice note.

If valuing under a full contractor's basis then the classification will be of little relevance in constructing the valuation by reference to specific rateable items.

If valuing by reference to DPE under 5.2 above the broad classification will be required in order to determine the appropriate table to apply.

6.0 Estimated Replacement Cost (ERC)

6.1 Unit Cost Rates (Buildings)

Recommended unit cost rates excluding professional fees for rateable items are available from the Rating Cost Guide.

6.2 Unit Cost Rates (External Works)

External Works should be valued in accordance with SAA Public Buildings Committee Practice Note 4 (Valuation of Contractor's Basis Subjects, Areas Adjustment, External Works' Costs and Land) and/or the Rating Cost Guide Scotland.

6.3 Adjustments to ERC

Adjustments in respect of contract size and fees should be made in accordance with the recommendations contained in SAA Basic Principles Committee Practice Note 2 (Contractor's Basis Valuations) if a full Contractor's Basis valuation is carried out.

7.0 Adjusted Replacement Cost (ARC)

7.1 In applying age and obsolescence allowances where valuing on a full contractor's basis approach reference should be made to guidance in SAA Basic Principles Committee Practice Note 2 (Contractor's Basis Valuations) and the scales of age and obsolescence therein. In particular it should be noted that allowances in respect of age in excess of 50% should only be given to buildings and plant in exceptional circumstances, and that in carrying out a full contractor's valuation, any buildings on waste water treatment works should be considered under table A of Appendix 1 of Practice Note 2 – Contractor's Basis Valuations.

However, if valuing WWTW with DPE up to 8 000 using the rates set out in Appendix A then the scales of age and obsolescence detailed in Appendix B should be adopted. Valuers should ensure that the appropriate age and obsolescence scale is applied having reference to the broad classification of the treatment carried on at the subject at 5.4.

7.2 Further allowances of a functional and technical nature should be considered in accordance with SAA Basic Principles Committee Practice Note 2 (Contractor's Basis Valuations) and SAA Public Buildings Committee Practice Note 4 (Valuation of Contractor's Basis Subjects, Areas Adjustment, External Works' Costs and Land).

8.0 Plant and Machinery

8.1 Buildings' unit cost rates may be inclusive of service plant typically found at WWTW. Some buildings' unit cost rates will need enhanced according to guidance in the Rating Cost Guide Scotland where service plant or other item is not included in the unit cost rate stated. Other rateable items of plant and machinery not already reflected in the rates or stated as an enhancement to the unit cost rate should be dealt with in terms of the Valuation for Rating (Plant & Machinery (Scotland) Regulations 2000 (as amended) and valued with reference to the Rating Cost Guide Scotland.

9.0 Land

9.1 Land value should be determined by reference to local evidence and SAA Public Buildings Committee Practice Note 4 (Valuation of Contractor's Basis Subjects, Areas Adjustment, External Works' Costs and Land).

10.0 Decapitalisation Rate

10.1 The appropriate statutory decapitalisation rate should be used.

11.0 End Allowance

11.1 Over-capacity

An adjustment may be required where the DPE of the WWTW is greater than the Actual Population Equivalent (APE) it serves. The APE is a notional figure calculated with regard to resident population; transient population and cesses liquor input and trade effluent expressed in terms of population.

If a WWTW serves an area where there is a local tourist industry which may produce different throughput at different times of the year the WWTW will have been designed to be capable of dealing with the quantity of flow at peak holiday times. In comparison the flow at off peak times will be considerably reduced.

No over-capacity allowance should be given for tourist season fluctuations.

However where a waste water treatment works has been built with a capacity which reflects a projected population increase which has not been reached, and is not likely to be reached between the years of revaluation, or for the treatment of a trade effluent process which may now have ceased, then it may be necessary to make an allowance.

The figure for "Used Capacity" is derived by taking the APE as a percentage of the DPE: i.e. $\frac{APE}{DPE} \times 100$.

The table of allowances is detailed in Appendix C

It should be noted a WWTW may receive sludge from other sources or WWTW. The facilities to treat or handle such sludge are not directly connected to the determination of DPE. Accordingly, where there is such sludge treatment or handling facilities on a WWTW, the overcapacity allowance should not be applied to this part of the valuation unless the waste water treatment works only stores or treats sludge drawn from its own received effluent. In these circumstances the allowance should also be granted to the sludge treatment items.

11.2 Any other factors or circumstances which might affect the value of the occupation of the lands and heritages as a whole should also be reflected at this stage. An adjustment under this head should not duplicate adjustments made elsewhere.

TABLE OF RATES PER HEAD OF DESIGN POPULATION EQUIVALENT (DPE)

TO ESTIMATED REPLACEMENT COST (EXCL SITE)

	Septic Tanks	Primary	All Other
DPE	£/Head	£/Head	£/Head
0	£1,600	£1,100	£1,800
50	£1,600	£1,100	£1,800
100	£1,140	£800	£1,500
150	£950	£600	£1,300
200	£875	£500	£1,250
300	£800	£400	£1,100
400	£700	£350	£1,000
500	£600	£330	£825
750	£445	£280	£675
1000	£340	£250	£575
1250	£275	£225	£550
1500	£240	£200	£525
1750	£220	£180	£510
2000	£185	£160	£450
2250	£180	£150	£420
2500	£180	£150	£390
2750	£180	£150	£375
3000	£180	£135	£360
3250	£180	£130	£350
3500	£180	£120	£325
3750	£180	£110	£315
4000	£180	£110	£300
4250	£180	£110	£290
4500	£180	£110	£280
4750	£180	£110	£275
5000	£180	£110	£270
8000	£180	£110	£240

Note – Subjects identified as “screening” are still operating in some cases. Where these are correctly identified as such in Scottish Water’s asset register they should, in accordance with the analysis, be valued at a 20% discount on the rate applicable to primary works. Age and obsolescence should be applied in line with the “Other Categories” table at Appendix B below.

Interpolate rates for DPE between points on the scale.

TABLE OF AGE & OBSOLESCENCE

Year	Septic Tanks and Primary	Other Categories
2023	0	0%
2022	0	0%
2021	0	0%
2020	0	0%
2019	0	0%
2018	0	0%
2017	0	0%
2016	0	0%
2015	0	0%
2014	0	0%
2013	0	1%
2012	0.50%	1%
2011	1%	2%
2010	1.50%	2%
2009	2%	3%
2008	2.50%	4%
2007	3%	4%
2006	3.50%	5%
2005	4%	6%
2004	4.50%	6%
2003	5%	7%
2002	5.50%	8%
2001	6%	9%
2000	6.50%	9%
1999	7%	10%
1998	7.50%	11%
1997	8%	11%
1996	8.50%	12%
1995	9%#	13%
1994	9.50%	13%
1993	10%	14%
1992	10.50%	15%
1991	11%	15%
1990	11.50%	16%
1989	12%	16%
1988	12.50%	17%
1987	13%	17%
1986	13.50%	18%
1985	14%	19%

1984	14.50%	19%
1983	15% (Max)	20%
1982		20%
1981		20%
1980		20%
1979		21%
1978		21%
1977		21%
1976		21%
1975		21%
1974		21%
1973		21%
1972		21%
1971		22%
1970		22% Max

TABLE OF ALLOWANCES FOR OVER – CAPACITY

Used Capacity	Percentage Reduction
80% or more	0%
At 75%	5%
At 70%	10%
At 65%	15%
At 60%	20%
At 55%	25%
At 50%	30%
At 45%	35%
At 40%	40%
At 35%	45%
At 30%	50%
At 25%	52.5%
Under 25%	55%

Tertiary Treatment Stages

- Tertiary A1** WWTW with a secondary activated sludge process where treatment methods also include prolonged settlement in conventional lagoons or raft lagoons, irrigation over grassland, constructed wetlands, root zone treatment (where used as a tertiary stage), drum filters, micro-strainers, slow sand filters, tertiary nitrifying filters, wedge wire clarifiers or Clariflow installed in humus tanks, where used as a tertiary treatment stage.
- Tertiary A2** WWTW with a secondary activated sludge process where treatment methods also include rapid-gravity sand filters, moving bed filters, pressure filters, nutrient control using physico-chemical and biological methods, disinfection, hard Chemical Oxygen Demand (COD) and colour removal, where used as a tertiary treatment stage.
- Tertiary B1** WWTW with a secondary stage biological process where treatment methods also include prolonged settlement in conventional lagoons or raft lagoons, irrigation over grassland, constructed wetlands, root zone treatment (where used as a tertiary stage), drum filters, microstrainers, slow sand filters, tertiary nitrifying filters, wedge wire clarifiers or Clariflow installed in humus tanks, where used as a tertiary treatment stage.

Tertiary B2 WWTW with a secondary biological process where treatment methods also include rapid gravity sand filters, moving bed filters, pressure filters, nutrient control using physico-chemical and biological methods, disinfection, hard COD and colour removal, where used as a tertiary treatment stage.

Secondary Treatment Stages

Secondary Activated Sludge WWTW where treatment methods include preliminary and primary treatment (screening, comminution, maceration, grit and detritus removal, pre-aeration and grease removal, storm tanks, plus primary sedimentation, including where assisted by the addition of chemicals and where treatment methods include activated sludge (including diffused air aeration, coarse bubble aeration, mechanical aeration, oxygen injection, submerged filters) and other equivalent techniques including deep shaft process, extended aeration (single, double and triple ditches) and biological aerated filters as secondary treatment.

Secondary Biological WWTW where treatment methods include preliminary and primary treatment (screening, comminution, maceration, grit and detritus removal, pre-aeration and grease removal, storm tanks, plus primary sedimentation, including where assisted by the addition of chemicals and where treatment methods include rotating biological contactors and biological filtration (including conventional filtration, high rate filtration, alternating double filtration and double filtration), root zone treatment (where used as a secondary treatment stage).

Primary Treatment Stages

Primary WWTW where treatment methods are restricted to preliminary and primary treatment (screening, comminution, maceration, grit and detritus removal, pre-aeration and grease removal, storm tanks, plus primary sedimentation, including where assisted by the addition of chemicals.

Septic Tanks A tank, usually below ground, into which sewage flows and is decomposed by anaerobic digestion.

Preliminary screening – the simple removal of solids and grits from wastewater before they enter the treatment process proper. Such works, as standalone subjects are rare as but they do still exist in the Scottish Water asset lists.