

**S149 CERTIFICATE ATTACHMENT**

Sydney Water Corporation

**Sewage Treatment Plant (STP) Buffer Zone Policy**



<b>Table of Contents</b>		
1.0	Title	1
2.0	Objectives	1
3.0	Scope	1
4.0	Definitions	1
5.0	Policy Statement	1
6.0	Implementation Procedures	2
6.1	Responses to Planning Proposals	2
6.2	New Sewage Treatment Plants	2
6.3	Existing Sewage Treatment Plants	2
	i Individual Site Assessment	3
	ii Width of Buffer Zone	3
	iii Provision of Buffer Zones in Planning Instruments	3
	iv Compatible/Incompatible Buffer Zone Land Uses	3
	v Provision of Information for Land Owners	3
	vi Financial Contributions from Developers	3
	vii Possible Purchase of Buffer Zone Land	4
7.0	List of Related Policies/Guidelines/Legislation	4
8.0	Customer Contact	4
9.0	Policy Development Contact	4
10.0	Approval Details	4
Attachment 1	DUAP's Circular E3 – Guidelines for Buffer Areas Around STPs	4
Attachment 2	EPA's Letter Regarding the Preservation of Buffer Zones Around STPs	5
Attachment 3	Procedure for Responding to Landuse Planning Proposals Affecting STP Buffer Zones	5
<b>1</b>	<b>TITLE</b>	
	Sewage Treatment Plant (STP) Buffer Zone Policy.	
<b>2</b>	<b>OBJECTIVES</b>	
	i) To provide appropriate buffer zones around Sydney Water's Sewage Treatment Plants (STPs) in order to minimise the impact of odour, noise, appearance and hazards on nearby residents.	
	ii) To ensure that adjacent development does not encroach inappropriately into STP buffer zones.	
	iii) To assist the Corporation in meeting future Environment Protection Authority (EPA) licence requirements for odour and noise control at STPs.	
	iv) To identify procedures for responding to requests from planning authorities and/or developers regarding development of land near or within STP buffer zones.	
<b>3</b>	<b>SCOPE</b>	
	The policy will apply to all of Sydney Water's existing STPs, and should be applied during the planning, design, construction and operation of new STPs in accordance with the implementation procedures outlined below.	
<b>4</b>	<b>DEFINITIONS</b>	
	Buffer Zone: An area of land or water surrounding a STP which is used in a way which is compatible with its operation and minimises odour, noise, visibility or other adverse environmental impacts on the community. The buffer zone plays an integral role in reducing the potential impacts of STPs to acceptable levels.	
	The term "Buffer Zone" should not be confused with the word "zoning or zoning" used in a statutory planning context, under the Environmental Planning and Assessment (EP&A) Act 1979.	
	Residual Air Emissions: Airborne emissions, such as Volatile Organic Carbons (VOCs) and Hydrogen Sulphide, that remain after appropriate control methods have been employed within the plant.	
<b>5</b>	<b>POLICY STATEMENT</b>	
	i) <i>The buffer zone shall consist of a designated area of land or water surrounding STPs, being at least 400 metres wide and should be created through local Environmental Plans (LEPs) or other environmental planning instruments which zone land, ie. Regional Environmental Plans (REPs) and State Environmental Planning Policies (SEPPs).</i>	
	ii) <i>Buffer zones should be used for compatible purposes such as industry, open space, agriculture, public roads, and flora and fauna reserves. Individual cases may need to be</i>	

## S149 CERTIFICATE ATTACHMENT

Sydney Water Corporation

### Sewage Treatment Plant (STP) Buffer Zone Policy



*assessed on their merits.*

- iii) *The Corporation shall consult with Councils and the Department of Urban Affairs and Planning (DUAP) before any extension, amplification or construction of STPs. Similarly, Councils shall also consult with Sydney Water and DUAP before drafting plans affecting STPs or in the vicinity of STPs.*

- iv) *Buffer distances should be measured from the existing plant boundary.*

The above policy is based on and is consistent with the Department of Urban Affairs and Planning's (DUAP's) Circular No E3 – *Guidelines for Buffer Areas Around STPs*, and the EPA's recommendation regarding the preservation of buffer zones around STPs (see Attachments 1 & 2).

## 6 IMPLEMENTATION PROCEDURES

The actual buffer zone requirement for STPs is influenced by the nature and size of the plant, the topography, micro climate and the sensitivity of neighbouring land uses.

Although the policy provides a general framework for decision making in these circumstances, a standard solution will not always be possible for all STPs.

Investigations (including odour studies and risk analysis) may need to be carried out on a case by case basis, in order to determine the Corporation's business needs and respond to development pressures for the use of land affected by STP buffer zones, which is vacant or surplus to the needs of its owners. If there are any problems of perceived bias, Sydney Water may consider it an advantage to have the studies carried out by independent consultants.

The Buffer Zone Policy should be implemented taking into consideration the need for preventing residential development encroaching on existing STPs as well as the adverse impacts of new STPs on residential areas.

### 6.1 Responses to Planning Proposals

- Responses to all future inquiries affecting STP buffer zones should be coordinated by the business area receiving the proposal.
- Final responses must be agreed to by all relevant areas of Sydney Water (see Attachment 3).
- Any comment by a Sydney Water representative(s) in external committees must reflect this agreed position, be confirmed in minutes or a letter, and forwarded to relevant areas for information and/or further action.

### 6.2 New Sewage Treatment Plants

Relevant Sydney Water staff, in conjunction with planning authorities, should use the Buffer Zone Policy and Circular E3 as planning tools for the location and design of new STPs. Sydney Water's current policy regarding new STPs is to achieve a 400 metre buffer zone from the boundary of the plant.

The need for and use of buffer zones must, however, be considered in the context of other methods of noise and odour control to determine, through appropriate studies by the Corporation, the extent of the buffer zone required.

### 6.3 Existing Sewage Treatment Plants

The corporation can expect to continue to receive requests from planning authorities and developers to rezone land for residential purposes in the buffer zone areas around existing STPs.

Following are some key points to consider when responding to individual proposals to rezone land within STP buffer zones:

- i) *Individual Site Assessment*

In principle, Sydney Water would prefer to maintain the maximum width of a buffer zone; ie. 400 metres. However, in practice there may be considerable pressure from planning authorities and developers to allow some development. A reduction of the buffer zone could be considered after an appropriate micro-climate (odour) study and risk analysis has been carried out.

If a development is proposed within an existing STP buffer zone, the area receiving the proposal should establish whether the relevant planning authority is willing to consider the proposal. If the planning authority will consider the application and if the STP is a constraint to the proposal, it would generally be the responsibility of Sydney Water to undertake any investigations necessary to support its assessment of the impacts of the development on the STP operations. These investigations could include studies on odour, noise, risk analysis and visual impact. Other matters for consideration need to be taken into account in determining development applications affecting STP buffer zones.

S149 CERTIFICATE ATTACHMENT

Sydney Water Corporation



Sewage Treatment Plant (STP) Buffer Zone Policy

<p>ii)</p>	<p><i>Width of Buffer Zone</i> It is generally agreed that the buffer width should be measured from the existing plant boundary. However, in many cases, adjoining development already encroaches on the 400 metre zone, if measured from the plant boundary. Several STPs have residential development, which was permitted prior to current policy standards, within 400 metres of their boundaries. The Corporation needs to avoid further encroachment into STP buffer zones to the extent possible.</p> <p>iii) <i>Provision of Buffer Zones in Planning Instruments</i> TransWater and the Regions should check, and as appropriate work with councils to ensure that designated buffer areas for STPs are created through relevant Local Environmental Plans (LEPs) or other environmental planning instruments which zone land, before they are finalised. This should be done in consultation with Development Services and Product Planning.</p> <p>iv) <i>Compatible/Incompatible Buffer Zone Land Uses</i> When commenting on draft planning instruments, rezoning and development proposals, the relevant Sydney Water staff should recommend compatible development within the buffer zone area and should encourage councils to avoid residential and most commercial development within the buffer zone. Although there is no official DUAP or Sydney Water list of compatible and/or incompatible land uses, generally it is believed that the compatible buffer land uses are those land uses which do not warrant a high level of protection from any residual air emissions or other adverse impacts from the STP. The following uses are generally considered by Sydney Water as compatible to STP operations: open space, recreation areas, public roads, drainable basins, natural bush/forest, constructed wetlands, flora and fauna reserves, <u>certain industries</u> (eg. a food processing industry may not be compatible but a tannery or abattoir is likely to be), and agricultural use.</p>
<p>v)</p>	<p>However, other land uses may be considered compatible <u>in certain circumstances</u> and individual cases will need to be assessed on their merits. This should specifically take into account such factors as the nature and size of the plant, the topography and the sensitivity of neighbouring land uses, ie site specific application of the Policy.</p> <p><i>Provision of Information for Land Owners</i> Relevant staff of the Corporation should request that councils make end purchasers, potential developers and owners aware of potential odour problems which might occur as a result of their proximity to STPs. This advice should be given at the planning stage (rezoning and subdivision) and /or when land within a buffer zone is sold to a new owner. This could also be achieved by providing this information, if appropriate, on the Council's s149 certificates. Councils should be advised of this requirement, by relevant Sydney Water staff, when commenting on draft planning instruments such as LEPs. Whilst such a strategy would ensure prospective purchasers were not taken by surprise, it would not be a substitute for buffer zone requirements. <b>It is important that Sydney Water advise of its requirements at the earliest stage of planning and rezoning processes which affect land in STP buffer zones. TransWater and the Regions, in consultation with Development Services and Product Planning, should take the initiative to facilitate negotiations between planning authorities, developers and the community to prevent potential future odour and noise problems and obtain a reasonable planning outcome.</b></p> <p>vi) <i>Financial Contributions from Developers</i> The Corporation may negotiate, in exceptional circumstances, with the potential developers/land owners for payment of a financial contribution towards odour control works within the STP to facilitate a reduction in the width of the buffer zone. However, there may still be significant costs for Sydney Water, and the use of this option needs very detailed and careful consideration in the future. In particular, consideration would need to be given to the legal basis of such a contribution, and the total cost of odour mitigation and ongoing maintenance costs, in the face of changing regulations and community expectations.</p>
<p>vii)</p>	<p><i>Possible Purchase of Buffer Zone Land</i> Sydney Water generally does not own the existing buffer land around its STPs. It is therefore unable to directly control land uses and restrict further development within buffer zones. In cases where it is considered critical to minimise the odour complaints at a particular plant, which is likely to be operational for the long term, Sydney Water may consider purchasing some buffer land around that plant. The Corporation may be able to utilise purchased buffer land for part of its effluent or solids disposal strategies. Some consideration might also be given to the likelihood of a plant being</p>

## S149 CERTIFICATE ATTACHMENT

Sydney Water Corporation

### Sewage Treatment Plant (STP) Buffer Zone Policy



decommissioned in the future, which would enable development to occur within the buffer zone as a long term option. If it is not cost-effective to acquire buffer zone land as a means of managing odour impacts, then the costs and benefits of alternative measures for control of noise and odour emissions will need to be considered on a case by case basis.

#### 7 RELATED POLICIES/GUIDELINES/LEGISLATION

- Guidelines for Buffer Areas Around STPs, Circular No E3 (formerly DEP 148), Department of Urban Affairs and Planning, March 1989.
- *Clean Air Act* 1961 (Sections 15A, 19, 23 and 25).
- *Environmental Planning and Assessment Act* 1979.
- *Environmental Offences and Penalties Act* 1989.
- Water Board (Corporatisation) Act 1994.
- Environment Protection Authority's Letter to Sydney Water Recommending Preservation of STP Buffer Zones, (SPCC, 3 January 1985).
- Memorandum of Understanding between Sydney Water Corporation and Environment Protection Authority, EPA, NSW, December 1996.
- *Procedures for Dynamic Olfactometry*, NSW Environment Protection Authority and the Sydney Water Corporation, May 1995.

#### 8 CUSTOMER CONTACT

Regional Urban Development and Systems Planning Managers, Plant Managers and Sewage Treatment Planning Managers.

#### 9 POLICY DEVELOPMENT CONTACT

Manager, Development Services. Level 16, Head Office, Tel: 9350 5280

#### 10 APPROVAL DETAILS

The Corporation's revised buffer zone policy and implementation procedures, as outlined above, were approved by the Group General Manager, Utilities, and the Group General Manager, TransWater on 15 December, 1995.

Sydney Water's Environment Plan (1995) Objective 29 required the review of the buffer zone policy and response to land use planning proposals in accordance with the revised policy.

The implementation procedures were amended in March 1997 as a result of the review of the effectiveness and appropriateness of the policy in January 1997, in light of a case study. The review recommended certain changes in the procedures, which were approved by the Sydney Water Executive on 24 March 1997.

#### DEPARTMENT OF PLANNING

##### E3

Remington Centre, 175 Liverpool Street Sydney 2000 148)

Box 3927 G.P.O. Sydney 2001. DX 15 Sydney.

Telephone: (02) 266 7111. Fax No: (02) 266 7599

All City, Municipal and Shire Councils

Guidelines for buffer areas around sewage treatment (water pollution control) plants.

This circular describes a general policy on buffer areas for sewage treatment (water pollution control) plants.

2. A buffer area is an area of land or water near a sewage treatment plant which, together with pollution control measures, reduces odour, noise, visibility, or other adverse environmental impact to more acceptable levels. Acquisition of all affected lands is usually too costly. Although technical solutions are also costly, the design of buffer areas should be used on the best engineering practice and design available.
3. Ideally, buffer areas should be created through local environmental plans, and be at least 400 metres wide, but this may vary to suit local conditions. Meteorological advice should be obtained to work out the most likely movement of air flows so that the widest buffer areas can be established in that direction.
4. To obtain the most efficient use of the land possible, buffer areas should also be used for compatible purposes. Possibilities include: flora and fauna reserves; grazing; agricultural use; forestry; commercial plant nurseries; recreation; effluent disposal; or public road reserves.
5. Land near sewage treatment plants may not form part of a buffer area, but ideally should be included. Councils should avoid rezonings that permit more intensive development and take advantage of any opportunities to extend the buffer area. Public authorities may need to acquire properties in the immediate proximity of plants.

#### CIRCULAR NO

(formerly DEP

S149 CERTIFICATE ATTACHMENT

Sydney Water Corporation

Sewage Treatment Plant (STP) Buffer Zone Policy



Contact Assessments Branch Our reference F 5/1(z)4

- 6. When considering development applications for proposals located near sewage treatment plants, councils should aim to limit structures to the minimum required for acceptable uses. Councils should also take into account the interests of public authorities.
- 7. New local environmental plans should not permit development to encroach on existing buffer areas. There should not be any rezoning of buffer areas, except to allow additional compatible uses, or to restrict the existing range of permitted uses.
- 8. Councils should consult with the relevant Water Board, or the Public Works Department, as well as the State Pollution Control Commission and any other appropriate organisation before drafting plans affecting sewage treatment plants. This meets the consultation requirements of section 62 of the Environmental Planning and Assessment Act 1979. Similarly, the responsible State agencies should consult with councils on proposals involving sewage treatment plants.
- 9. For further technical information or advice contact:
  - Sydney/Illawarra Regions:  
The Secretary, Water Board, Cnr. Pitt and Bathurst Streets, Sydney; or  
Sewage Treatment Planning Manager, Mr. B. Nelson, (02) 269 6969 Ext. 6212.
  - Hunter Region:  
The Secretary, Hunter District Water Board, P.O. Box 517B, Newcastle West, N.S.W. 2302 (for those areas serviced by the Board); or  
Waste Water Investigations and Planning Engineer, Mr. D. McRae, (049) 267267 Ext. 277 (or the local office).
  - Additional Advice:  
The Secretary, State Pollution Control Commission, G.P.O. Box 4036, Sydney 2001; or  
Principal Engineer – Noise, Mr Tony Hewett (02) 265 8919  
Principal Engineer – Water, Mr Warren Hicks (02) 265 8917.
- 10. For further information please contact the Department's Regional Manager for the Council's area.

ATTACHMENT 2

48 7774

New South Wales Government

**State Pollution Control Commission**

157-167 Liverpool Street  
Sydney 2000  
G.P.O. Box 4036  
Sydney 2001

Our telephone: 207696 PB:RS  
Your reference: 48-99140-2  
Telephone: 3660681 265 8888  
Telex Head Office: AA 72234

The Secretary,  
Metropolitan Water, Sewerage and  
Drainage Board,  
Cnr. Pitt and Bathurst Streets,  
SYDNEY N.S.W. 2000 OD

ATTENTION: Mr. B. Nelson,  
Sewerage Investigations Branch

Dear Sir,

WATER POLLUTION CONTROL PLANT BUFFER ZONES

JAN 1985

Thank you for your letter of 5 November 1984, to the Commission's Director, concerning the above matter. We have noted the points made, both in your letter and in Dr. Crawford's submission of 17 July 1984 on the subject, to Mr. R. B. Smyth, Director of the Department of Environment and Planning.

We confirm our verbal advice that, unless precluded by longstanding prior development, it is essential that adequate buffer zones be preserved around the Board's water pollution control plants. There is no odour or noise control technique as reliable as an effective buffer zone, since this provides for dilution and dispersion of any offensive odours, and for reduction of offensive noise levels, without reliance on operational controls.

Specifically, so as to provide the most effective control over both offensive odours and noise, we recommend that, where practicable, buffer zones around water pollution control plants be provided, maintained or increased in width according to the principles set out below.

So that offensive noise is not received at the nearest premises, we recommend that a minimum buffer zone of 500 metres width be maintained between the noise-generating facilities of the plant, eg, pumps, blowers, compressors, etc, and the premises.

For control of offensive odours, we recommend that a minimum buffer zone of 400 metres width be maintained between sewage treatment process units or open reticulation headworks and any development.

We point out however, that the provision of the above specified buffer zones might not preclude the necessity to also provide ancillary noise and/or odour control measures in some instances. However, in other cases, wider buffer zones may be required, notwithstanding the provision of ancillary control measures. It is recommended that the need for buffer zone widths in excess of 500 metres for noise control, or 400 metres for odour control, be

Correspondence  
Number: 039,95999 2277333  
Final Reply by:   
Branch  
Permitted:

determined in each case on the basis of meteorological advice concerning the most likely movement of stable drainage flows, having regard for the site topography.

We trust that this information will be of assistance to you. If you have any enquiries please do not hesitate to contact either the Commission's Principal Engineer - Noise, Mr. Tony Hewett, on telephone 265 8918, or Principal Engineer - Water, Mr. Peter Yates, on telephone 265 8917.

Yours faithfully,  
*W. G. Hicks*  
W. G. HICKS  
for Secretary

