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SPECIAL

Environment Protection Act 1970

VARIATION OF THE STATE ENVIRONMENT PROTECTION POLICY (WATERS OF VICTORIA) - INSERTION OF SCHEDULE F7. WATERS OF THE YARRA CATCHMENT

The Governor in Council under section 16(2) of the **Environment Protection Act 1970** and on the recommendation of the Environment Protection Authority declares as follows:

Dated 22 June 1999.

Responsible Minister:
MARIE TEHAN
Minister for Conservation and Land Management

SHANNON DELLAMARTA
Acting Clerk of the Executive Council

1. ***Contents***

This Order is divided into parts as follows -

PART 1 - PRELIMINARY

2. ***Purposes***

The purposes of this Order are to -

(a) vary the State environment protection policy (Waters of Victoria) to add to Schedule F a new schedule - Schedule F7. Waters of the Yarra Catchment; and

(b) revoke the State environment protection policy NO. W-29 (Waters of the Yarra River and Tributaries)

3. ***Commencement***

This Order comes into effect upon publication in the Government Gazette.

4. ***The Principal Policy***

In this Order, the State environment protection policy (Waters of Victoria) is called the "Principal Policy".

PART 2 - VARIATION OF THE PRINCIPAL POLICY

5. ***Insertion of new Schedule F7. Waters of the Yarra Catchment***

After Schedule F6. of the Principal Policy insert -

"F7. Waters of the Yarra Catchment

1. Title

This Schedule may be cited as Schedule F7. Waters of the Yarra Catchment, referred to below as the "Schedule".

2. Contents of Schedule

This Schedule is divided into parts as follows -

PART I - PRELIMINARY

3. Definitions

In this Schedule, unless inconsistent with the context or subject matter -

"ambient" means the environmental condition determined by the level of an indicator, measured in a manner and at a location specified by the Authority;

"A.M.G" means the Australian Map Grid;

"aquatic ecosystem" means the community of animals and plants living within or immediately adjacent to a waterway;

"base flow" means a stream flow not sourced predominantly from surface run-off.

"council" has the same meaning as in the **Local Government Act 1989**;

"litter" has the same meaning as in the **Litter Act 1987**;

"N" means there is to be no variation from background level of water quality;

"NTU" means nephlometric turbidity units;

"off-set measures" means measures that -

(i) are undertaken by the occupier of one premises to reduce the discharge of wastes to the environment from another premises; and

(ii) achieve an environmental outcome equivalent to or improved upon that which could be achieved through any measure to reduce the discharge of waste from the first premises;

"permitted diversion" means the harvesting of surface water for any purpose, including for instream storage, pursuant to a licence or a permit under the **Water Act 1989** or the **Melbourne and Metropolitan Board of Works Act 1958**;

"ports and harbour authority" means any body with responsibility for regulating the movements and operations of vessels within the Schedule area;

"protection agency" means any person or body, whether corporate or unincorporate, having powers or duties under any other Act with respect to the environment or any segment of the environment in any part or parts of Victoria;

"SIGNAL" means Stream Invertebrate Grade Number - Average Level, which is an index of water pollution based on tolerance or intolerance of biota to pollution;

"T" means -

(i) the national guideline concentration for toxicants in waters specified for the protection of aquatic ecosystems in the Australian Water Quality Guidelines for Fresh and Marine Waters, published by the Australian and New Zealand Environment and Conservation Council (ANZECC); or

(ii) other criteria specified by the Authority;

"TC" means -

(i) the threshold concentration of chemical compounds in water capable of tainting fish flesh and other aquatic organisms, specified in the Australian Water Quality Guidelines for Fresh and Marine Waters published by the Australian and New Zealand Environment and Conservation Council (ANZECC); or

(ii) other criteria specified by the Authority;

"TH" means -

(i) the minimum risk concentrations in water required to protect consumers from toxicants that may accumulate in the tissue of fish, crustacea and shellfish, specified in the Australian Water Quality Guidelines for Fresh and Marine Waters published by the Australian and New Zealand Environment and Conservation Council (ANZECC); or

(ii) other criteria specified by the Authority;

"waterway" includes a river, creek, stream or watercourse or a natural channel in which water regularly flows, whether or not the flow is continuous or a lake, lagoon, swamp or marsh;

"works" has the same meaning as in the **Planning and Environment Act 1987**.

4. Schedule goals

The goals of this Schedule are to -

(1) protect the beneficial uses of the Schedule area; and

(2) protect the beneficial uses of Port Phillip Bay from the effects of sediment and wastes transported by the Yarra River from the Schedule area.

PART II - BOUNDARIES OF THE AREA AFFECTED

5. Schedule area

This Schedule shall apply to the area represented in Figure 1, being all surface waters within the catchments of the Yarra River and its tributaries upstream of a line drawn across the mouth of the Yarra River (A.M.G. Co-ordinates E 315300 N 5809000) corresponding with the parallel 37° 50' 30", except -

(1) the Maribyrnong River and its catchment north of a line from the eastern end of Lyell Street, Yarraville to the southern-most point of Coode Island; and

(2) Stony Creek and its catchment west of Hyde Street, Yarraville.

6. Segments

(1) Clause 6 of the Principal Policy does not apply to this Schedule.

(2) For the purpose of this Schedule, the following segments of the environment, represented in Figure 1, are classified within the Schedule area -

(a) *Aquatic Reserves Segment,* consisting of the surface waters of -

(i) the catchments upstream of the water supply off-takes at Upper Yarra Reservoir, O'Shannassy Weir, Armstrong Creek Weirs (east and west branches), Starvation Creek Weir, Big Flume Weir, Cement Creek (east branch) Weir, Coranderrk Creek Weir, Graceburn Creek Weir, Maroondah Reservoir, Sawpit Creek Weir, Donnelly's Creek Weir, Torrourrong Reservoir, Yan Yean Reservoir, Silvan Reservoir and Greenvale Reservoir (not including catchment upstream of diversion drains);

(ii) the catchments upstream of O'Shannassy Aqueduct from which waters drain directly into the aqueduct;

(iii) the Yarra Ranges National Park, except for tributaries to the Yarra River from the north of the Yarra River between O'Shannassy River and Armstrong Creek;

(iv) Watsons Creek and its catchment within Kinglake National Park;

(v) Dry Creek and its catchment within Kinglake National Park upstream of A.M.G. Easting E 355000 (approximately 1 kilometre upstream of the crossing of Dry Creek by Jerusalem Track); and

(vi) the un-named creek and its catchment on the north-west side of Mt Everard upstream of the point where that creek crosses the Kinglake National Park Boundary (A.M.G. Co-ordinates E 350850 N 5839900).

(b) *Parks and Forests Segment,* consisting of the surface waters of -

(i) Yarra River and Cement Creek and their catchments upstream of their junction;

(ii) the southern catchments of the Yarra River contained in the Yarra State Forest east of Hoddles Creek;

(iii) Black Sand Creek and its catchment upstream of its junction with Taylor Creek;

(iv) Wombat Creek and its catchment upstream of Hoddles Creek, and Hoddles Creek and its catchment upstream of A.M.G. Northing N 5809000;

(v) McCrae Creek and its catchment upstream of A.M.G. Easting E 378250;

(vi) Tomahawk Creek and its catchment upstream of its junction with Shepherd Creek;

(vii) the catchments upstream of the O'Shannassy Aqueduct which cross the aqueduct or its reticulated sections, between the Don River and Cement Creek catchments;

(viii) Don River and its catchment upstream of A.M.G. Northing N 5824000;

(ix) Ure Creek and its catchment upstream of its intersection with McMahons Road;

(x) the Coranderrk Aqueduct reserve and the catchments upstream of the Coranderrk Aqueduct which cross the aqueduct or its reticulated sections, between Donna Buang Road and A.M.G. Northing N 5821800;

(xi) Myers Creek and its catchment upstream of A.M.G. Northing N 5835000, near the junction of Forty Nine Road and Myers Creek Road;

(xii) New Chum Creek and its catchment upstream of A.M.G. Northing N 5838300 near Joshua Road;

(xiii) Watsons Creek and Reedy Creek and their catchments upstream of their junction;

(xiv) the catchments within and upstream of Kinglake National Park;

(xv) Happy Valley Creek and its catchment;

(xvi) Stevensons Creek and its catchment upstream of A.M.G. Northing N 5826600;

(xvii) Scrubby Creek and its catchment upstream of the intersection of Scrubby Creek and Humevale Road immediately upstream of Humevale, near Parkers Road;

(xviii) Mt Disappointment State Forest;

(ixx) Lyrebird Gully and its catchment within Dandenong Ranges National Park;

(xx) Yarraloch Wildlife Reserve, Warramate Hills; and

(xxi) Sugarloaf Creek and its catchment upstream of Winneke Dam -

but not including any of the surface waters of the Aquatic Reserves Segment.

(c) *Rural Eastern Waterways Segment,* consisting of the surface waters of -

(i) Yarra River and its catchment upstream of the Sugarloaf Reservoir diversion at Yering Gorge, but not including Olinda Creek and its catchment downstream from York Road to Stringybark Creek;

(ii) the northern catchments of the Yarra River from the Sugarloaf Reservoir diversion at Yering Gorge to, and including, Watsons Creek; and

(iii) Diamond Creek and its catchment upstream of the junction of Diamond Creek and Arthurs Creek -

but not including any of the surface waters of the Aquatic Reserves Segment and the Parks and Forests Segment.

(d) *Rural Western Waterways Segment,* consisting of the surface waters of-

(i) Plenty River and its catchment upstream of the intersection of Gorge Road and the Plenty River;

(ii) Darebin Creek, its tributaries and their catchments upstream of their intersection with Findon Road, Epping;

(iii) Edgars Creek and its catchment upstream of O'Herns Road; and

(iv) Merri Creek and its catchment immediately upstream of its junction with Malcolm Creek and the eastern tributaries to Merri Creek and their catchments upstream of O'Herns Road, Somerton -

but not including any of the surface waters of the Aquatic Reserves Segment and the Parks and Forests Segment.

(e) *Urban Waterways Segment*, consisting of the surface waters of-

(i) the Yarra River from the Sugarloaf Reservoir diversion at Yering Gorge to Dights Falls;

(ii) Olinda Creek and its catchment downstream from York Road, Mt Evelyn to Stringybark Creek;

(iii) the catchments of the southern tributaries to the Yarra River downstream from the Sugarloaf Reservoir diversion at Yering Gorge; and

(iv) the catchments of the northern tributaries to the Yarra River downstream of its junction with Watsons Creek, but not including Railway Canal or Moonee Ponds Creek south of Macaulay Road, Flemington -

but not including any of the surface waters of the Aquatic Reserves Segment, the Parks and Forests Segment, the Rural Eastern Waterways Segment and the Rural Western Waterways Segment.

(f) *Upper Estuary Segment,* consisting of the surface waters of -

(i) the Yarra River between Dights Falls and A.M.G. Easting E 3178000 (to the west of Victoria Dock); and

(ii) Victoria Dock.

(g) *Yarra Port Segment,* consisting of the surface waters of -

(i) the Yarra River between A.M.G. Easting E 3178000 (to the west of Victoria Dock) and a line drawn across the mouth of the Yarra River (A.M.G. Co-ordinates E 315300 N 5809000) corresponding with the parallel 37° 50’ 30”;

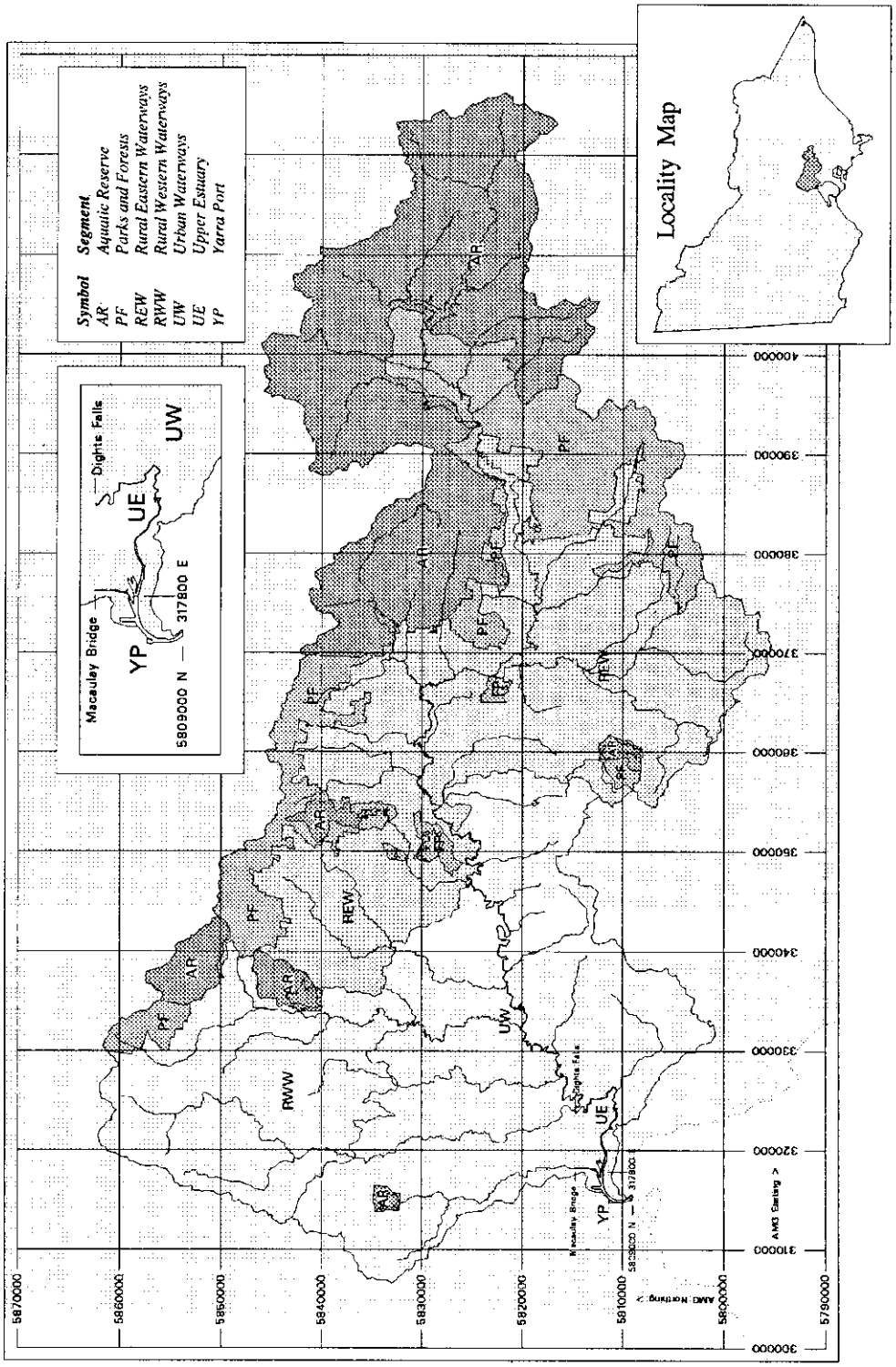
(ii) Stony Creek east of Hyde Street, City of Hobsons Bay;

(iii) Swanson Dock and Appleton Dock; and

(iv) Railway Canal or Moonee Ponds Creek south of Macaulay Road, Flemington -

but not including any of the surface waters of the Maribyrnong River north of a line drawn from the eastern end of Lyell Street, Yarraville to the southern-most point of Coode Island.

FIGURE 1. Schedule F7. Area and Segments



PART III - BENEFICIAL USES TO BE PROTECTED

7. Beneficial uses

(1) Clause 7 of the Principal Policy does not apply to this Schedule.

(2) Subject to sub-clauses (3), (4) and (5), the beneficial uses shown in Table 1 shall be protected in each segment marked with a tick.

(3) For the purposes of Table 1, the letters super-scripted after the allocation of beneficial uses to segments have the following meanings -

"a" means that within the Aquatic Reserves Segment, "Passage of indigenous fish" past the Upper Yarra, Maroondah and Toorourong Reservoirs is not a protected beneficial use;

"b" means that within the Urban Waterways Segment -

(i) until and including 31 December 2002, "primary contact recreation" shall not be a protected beneficial use except in the waters of the Yarra River;

(ii) after 31 December 2002, "primary contact recreation" shall be a protected beneficial use during base flow periods and after a minimum period of five days has elapsed since the occurrence of a rainfall run-off event in those surface waters -

- where primary contact recreation is not prohibited by any law; and
- that are at least one metre in depth during base flow conditions and have at that depth, the shortest surface dimension of at least 6 metres and the longest surface dimension of at least 10 metres;

"c" means that within the Upper Estuary Segment "primary contact recreation" shall not be a protected beneficial use until and including 31 December 2002;

"d" means that within the Aquatic Reserves Segment, "Water based recreation" and "Commercial and recreational use of edible fish and crustacea" are not protected beneficial uses within the water supply areas with restricted public access identified in clauses 6(2)(a)(i) and 6(2)(a)(ii).

TABLE 1. Beneficial Uses to be Protected in Segments

BENEFICIAL USE	SEGMENT						
	Aquatic Reserves	Parks and Forests	Rural Eastern Water-ways	Rural Western Water-ways	Urban Water-ways	Upper Estuary	Yarra Port
Maintenance of natural aquatic ecosystems and associated wildlife							
Natural ecosystems	✓						
Natural ecosystems with occasional disturbance due to human activity		✓					
Substantially natural ecosystems with some modification			✓				
Modified ecosystems				✓	✓		
Highly modified ecosystems with some habitat values						✓	✓
Passage of indigenous fish	✓[a]	✓	✓	✓	✓	✓	✓
Maintenance of indigenous riparian vegetation	✓	✓	✓	✓	✓		
Water based recreation							
Primary contact (eg. swimming, water skiing)	✓[d]	✓	✓	✓	✓[b]	✓[c]	
Secondary contact (eg. boating, fishing)	✓[d]	✓	✓	✓	✓	✓	✓
Aesthetic enjoyment (eg. walking by the waters)	✓[d]	✓	✓	✓	✓	✓	✓
Commercial and recreational use of edible fish & crustacea	✓[d]	✓	✓	✓	✓	✓	✓
Potable water supply							
Untreated	✓						
With treatment (disinfection only)		✓					
With treatment (disinfection & removal of suspended solids)			✓				

Table 1 *continued*

BENEFICIAL USE	SEGMENT						
	Aquatic Reserves	Parks and Forests	Rural Eastern Water-ways	Rural Western Water-ways	Urban Water-ways	Upper Estuary	Yarra Port
Agricultural water supply							
Stock water		✓	✓	✓	✓		
Irrigation (including watering parks and gardens)		✓	✓	✓	✓	✓	
Other Commercial Purposes							
Industrial water use			✓	✓	✓	✓	✓
Navigation and shipping						✓	✓

PART IV - ENVIRONMENTAL QUALITY INDICATORS AND OBJECTIVES

8. Environmental quality indicators and objectives

(1) Clauses 8 and 9 of the Principal Policy do not apply to this Schedule.

(2) *National water quality criteria*
Subject to sub-clauses (3) and (4), the water quality objectives to protect beneficial uses shall be those specified in the Australian Water Quality Guidelines for Fresh and Marine Waters, published by the Australian and New Zealand Environment and Conservation Council (ANZECC).

(3) (a) For the purposes of the Schedule water quality must comply with the objectives specified in Table 2 and water quality is to be maintained as close as practicable to background levels.

(b) For the purposes of Table 2 -

(i) the letters super-scripted after the levels of indicators have the following meanings -

"a" means the value is the objective for the Yarra River main stream;

"b" means the value is the objective for the tributaries of the Yarra River;

"c" means the value is the objective for the urban waterways segment of the Yarra River main stream, upstream of its confluence with Diamond Creek;

"d" means the value is the objective for the urban waterways segment of the Yarra River main stream, downstream of its confluence with Diamond Creek;

"e" means the value is the objective until 31 December 2002, when the objective becomes <200 organisms/100 ml to protect the beneficial use of primary contact recreation;

"f" means objectives have not been specified due to the lack of data and an inadequate understanding of the effects of nutrients on the estuarine environment;

(ii) statistically based objectives may be assessed using monitoring and analytical protocols approved by the Authority.

(iii) where a chemical element or compound is listed as more than one of a toxicant ("T"), a potential taint ("TC") or a bioaccumulator ("TH"), the more stringent value is the environmental quality objective.

(iv) where an objective involves the alternatives of a numerical limit or a numerical limit resulting from a percentage change, the higher number shall apply.

(v) the minimum concentration (mg/l) for dissolved oxygen must be determined over several diurnal cycles, including during summer low flows.

(vi) where the background level of water quality does not comply with the numerical limit in Table 2, maintenance of the background level shall become the objective.

(vii) for those areas of the Aquatic Reserves segment where water quality is affected by activities approved under the **National Parks Act 1978**, the objectives of the Parks and Forests segment shall apply.

TABLE 2. In-stream Environmental Quality Indicators and Objectives

Segments / Indicators (Units)	Aquatic Reserves	Parks and Forests	Rural Eastern Water-ways	Rural Western Water-ways	Urban Water-ways	Upper Estuary	Yarra Port
Temperature (*C increase)	N	<1°C	<2°C	<2°C	<2°C	<2°C	<2°C
pH (pH units) range	N	6.5-8.5	6.0-8.5	6.0-8.5	6.0-8.5	6.5-8.5	6.5-8.5
maximum variation	0	0.5	0.5	0.5	0.5	0.5	0.5
Salinity maximum (mg/l)	N	<200	<200[a]/ <500[b]/	<1500	<500[a]/ <1000[b]		
max. variation (%)	0	10	10	25	10a/20b		
Dissolved oxygen minimum concentration (mg/l)	N	>8.0	>6.0	>6.0	>6.0	>6.0	>6.0
minimum percentage saturation(%)	N	>85	>80	>60	>60	>60	>60
Turbidity annual 50th percentile (NTU)	N	<5	<15	<25	<20[c]/<30[d]/ <25[b]	<30	<20
annual 90th percentile (NTU)	N	<10	<30	<80	<50[c]/<80[d]/ <80[b]	<80	<50

Table 2 *continued*

Segments / Indicators (Units)	Aquatic Reserves	Parks and Forests	Rural Eastern Water-ways	Rural Western Water-ways	Urban Water-ways	Upper Estuary	Yarra Port
Non-filtrable residue (Suspended Solids) annual 50th percentile (mg/l)	N	<5	<20	<25	<25[c]/<50[d]/ <25[b]	<50	<25
annual 90th percentile (mg/l)	N	<10	<40	<90	<60[c]/<90[d]/ <90[b]	<90	<60
Nutrients (during base flows) Total phosphorus (mg/l)	N	<0.03	<0.05	<0.05	<0.08[a]/<0.1[b]	f	f
Total nitrogen (mg/l)	N	<0.2	<0.6	<0.6	<0.9[a]/<1.0[b]	f	f
Toxicants general	N	<0.2T	<T	<T	<T	<T	<T
mercury (μg/l)	N	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05
methylmercury (μg/l)	N	<0.0008	<0.004	<0.004	<0.004	<0.004	<0.004
biomagnification	N	<TH	<TH	<TH	<TH	<TH	<TH
Taints	N	TC	TC	TC	TC	TC	TC
E.coli organisms/100ml geometric mean	N	<200	<200	<200	<200[a] / <1000[b/e]	<1000[e]	<1000
Coprostanol ratio coprostanol : cholestanol	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5

(c) The level of settleable material must not result in deposits that adversely affect beneficial uses or the hydraulic capacity of the drainage infrastructure.

(d) The aesthetic characteristics of the Schedule area must be protected and in particular there must not be any -

(i) litter;

(ii) anthropogenic floatable materials, foams or scums;

(iii) materials causing objectionable colours or odours; or

(iv) visible films of oils, greases and petrochemical products or odours from such products.

(4) Nutrient loads, particularly nitrogen, exported from the Yarra catchment to Port Phillip Bay must be consistent with the Nutrient Reduction Plan developed under clause 12 of Schedule F6 to the Principal Policy.

(5) (a) Levels for specific quantitative ecological indicators of environmental quality for the Segments of this Schedule are shown in Table 3.

TABLE 3. Objectives for Ecological Indicators of Environmental Quality

SEGMENTS	Aquatic Reserves	Parks and Forests	Rural Eastern Water-ways	Rural Western Water-ways	Urban Water-ways	Upper Estuary[e]	Yarra Port[e]
Invertebrate community							
SIGNAL Index Score	7.0	7.0	6.5	5.5	6.0[a]/5.5[b]		
Minimum number of Families[c]	30	30	27	20	26[a]/20[b]		
Key Families (listed in Table 4)	List 1		List 2		List 3		
No. present	19	17	17[a] / 16[b]	10	16[a] / 12[b]		
Fish (presence)[d]							
Freshwater Blackfish *Gadopsis marmoratus*	✓	✓	✓	✓	✓		
Tupong *Pseudaphritis urvillii*	✓[f]	✓	✓	✓	✓	✓	✓
Grayling *Prototroctes mareana*	✓[f]	✓	✓	✓	✓	✓	✓
Spotted Galaxias *Galaxias truttaceous*	✓[f]	✓	✓	✓	✓	✓	✓
Common Galaxias G. maculatus	✓[f]	✓	✓	✓	✓	✓	✓

(b) For the purposes of Table 3 -

(i) assessment of indicators is by the Rapid Bioassessment Method approved by the Authority. Their assessment requires data combined from two sampling occasions (one each in autumn and spring) and, where possible, the sampling of two habitats (riffles and edge/macrophytes);

(ii) the letters super-scripted after the levels of certain indicators in Table 3 have the following meanings -

"a" means the value is the objective for the Yarra River main stream;
"b" means the value is the objective for the tributaries of the Yarra River;

"c" means the taxonomic level of Family excluding families of Acarina, Oligochaeta, Platyhelminthes (Tricladida and Temnocephalidea), Cnidaria, Collembolla, Ostrocoda, Copepoda, Cladocera, Hirudinea, Polychaeta, Nematoda, Nematomorpha, Porifera;

"d" means in streams of appropriate size and within the natural range of the species;

"e" means invertebrate communities have not been specified due to the lack of knowledge of current conditions, of what occurs in undisturbed systems, and what is attainable;

"f" means except in waters upstream of the Upper Yarra, Maroondah and Toorourrong Reservoirs;

(iii) List 1 is a reference to the key families of invertebrates in the Aquatic Reserves Segment and the Parks and Forests Segment, specified in Table 4;

(iv) List 2 is a reference to the key families of invertebrates in the Rural Eastern Waterways Segment and the Rural Western Waterways Segment, specified in Table 4;

(v) List 3 is a reference to the key families of invertebrates in the Urban Waterways Segment, specified in Table 4.

TABLE 4. Lists of key families for segments of this Schedule

	List 1 **Aquatic Reserves Segment & Parks and Forest Segment**	**List 2** **Rural Eastern Waterways Segment and Rural Western Waterways Segment**	**List 3** **Urban Waterways Segment**
Stoneflies	Gripopterygidae	Gripopterygidae	Gripopterygidae
	Austroperlidae	Austroperlidae	
	Eustheniidae		
	Notonemouridae		
Mayflies	Leptophlebiidae	Leptophlebiidae	Leptophlebiidae
	Baetidae	Baetidae	Baetidae
	Coloburiscidae	Caenidae	Caenidae
		Coloburiscidae	
Dragonflies	Aeshnidae	Aeshnidae	Aeshnidae
		Lestidae/ Synlestidae/ Cordulidae	Lestidae/ Synlestidae/ Cordulidae
			Megapodagrionidae
			Any other family of Odonata
True flies	Athericidae	Athericidae	
	Blephariceridae		
Caddis flies	Leptoceridae	Leptoceridae	Leptoceridae
	Philorheithridae	Philorheithridae	Ecnomidae
	Helicopsychidae	Glossosomatidae	Hydrobiosidae
	Glossosomatidae	Calocidae	Hydropsychidae
	Hydrobiosidae	Calamoceratidae	Calamoceratidae
	Philopotamidae	Hydrobiosidae	
	Hydropsychidae	Hydropsychidae	
	Calocidae	Ecnomidae	
	Helicophidae	Atriplectididae	
	Conoesucidae	Conoesucidae	
Beetles	Elmidae	Elmidae	Elmidae
	Ptilodactilidae	Ptilodactylidae	Hydrophilidae
	Scirtidae	Hydrophilidae	Psephenidae
		Hydrochidae	
Amphipods	Eusiridae	Ceinidae/Eusiridae	Ceinidae/Eusiridae
Shrimps		Atyidae	Atyidae
Snails/Bivalves		Hydrobiidae/ Corbiculidae	Hydrobiidae/ Corbiculidae
TOTAL	24	26	19

PART V - ATTAINMENT PROGRAM

General

9. Addition to Principal Policy provisions

Clauses 10 to 54 (the "Attainment Program") of the Principal Policy apply in addition to this Part for the Schedule area.

10. Responsibilities

(1) The Authority will identify and promote measures to achieve the best practicable environmental outcomes within the Schedule area.

(2) The Authority will exercise its powers, duties and responsibilities to -

(a) assist the community to understand and contribute to the improvement of water quality in the Schedule area;

(b) work co-operatively with all who use and manage the Schedule area and promote the use of best practices that protect beneficial uses in the Schedule area;

(c) ensure that any notice, works approval or licence issued under the Act contains requirements that are consistent with the Schedule; and

(d) co-ordinate, review and report on the attainment of the provisions of this Schedule.

(3) Protection agencies with powers or duties in the Schedule area must -

(a) review existing environmental management arrangements to ensure operations are managed consistent with the provisions of this Schedule;

(b) periodically assess the effectiveness of environmental management systems established or revised under sub-clause (3)(a) in contributing to the achievement of Schedule objectives, and revise systems in accordance with assessment outcomes; and

(c) report to the Authority the outcomes of assessments conducted under sub-clause (3)(b).

11. Yarra Catchment Action Plan

(1) Protection agencies responsible for natural resource and catchment management must ensure that a Yarra Catchment Action Plan for the Schedule area is developed and implemented in collaboration with local government, waterway and drainage managers, catchment advisory bodies, community groups, industry and other interested users of the catchment, to achieve the objectives of this Schedule.

(2) The Yarra Catchment Action Plan referred to in sub-clause (1) must -

(a) co-ordinate the management of activities that affect water quality;

(b) identify priorities and timing for action;

(c) assign specific responsibilities for action;

(d) provide a basis for action to address particular issues, areas or catchments;

(e) guide management of wastewater and drainage discharges;

(f) provide a basis for the long-term management of diffuse and point sources of waste affecting water quality, particularly those contributing to excess levels of nutrients, suspended solids, pathogens and litter, consistent with the principles of waste avoidance and minimisation;

(g) enable the on-going involvement of persons and organisations with an interest in water quality in the Schedule area.

Waterway Management

12. Point source management

(1) The Authority will ensure that occupiers of premises discharging waste to the surface waters of the Schedule area operate and manage facilities to ensure that -

(a) the extent of mixing zones is progressively reduced by the application of best practice, including cost effective waste treatment technology, cleaner production principles, waste minimisation and the sustainable re-use of wastewater; and

(b) the sustainable re-use of wastewater and treatment sludges is maximised wherever practicable and environmentally beneficial.

(2) In implementing sub-clause (1), facilities and operating practices of sewage treatment plants with capacity exceeding 0.1 ML/day must be upgraded such that by 1 July 2004, discharges cause no detrimental change in the environmental quality of the receiving waters as determined by an in-stream monitoring and assessment program approved by the Authority.

13. Off-set measures

(1) The Authority may approve, for a period specified by the Authority, a lower quality of discharge from a premises than would otherwise be acceptable to the Authority if -

(a) the occupier of the premises agrees to implement and maintain any off-set measures that offer either equivalent or greater protection of beneficial uses within the area specified by the Authority; and

(b) the discharge will not be detrimental to any beneficial use outside any designated mixing zone.

(2) Any renewal or continuation of these arrangements is conditional on the Authority being satisfied that -

(a) the off-set continues to offer either equivalent or greater protection of beneficial uses within the area specified by the Authority; and

(b) the discharge will not be detrimental to any beneficial use outside any designated mixing zone.

14. Stabilisation of waterways and protection of habitat

Protection agencies (including councils) and occupiers of premises adjacent to waterways must ensure that waterways and riparian zones are managed to protect beneficial uses, and in particular that -

(1) programs are developed and implemented to stabilise and rehabilitate degraded waterways which are posing a threat to beneficial uses;

(2) waterway revegetation programs include measures to restore indigenous riparian vegetation communities;

(3) remnant indigenous vegetation beside waterways is maintained and protected;

(4) adverse impacts of land use activities on waterways, in particular stock access to streams, land disturbance practices and the application of biocides and fertiliser, are minimised;

(5) de-snagging activities are managed in accordance with current best practice or with any relevant best practice environmental management guidelines adopted by the Authority;

(6) new in-stream structures or works affecting waterways, including existing structures undergoing refurbishment, are designed, constructed and managed to provide for the passage of indigenous fish; and

(7) existing barriers to fish movement are progressively removed, with priority given to those barriers which most adversely affect, or have the potential to most adversely affect beneficial uses.

15. Environmental water requirements

(1) Bulk Entitlement Orders made under the **Water Act 1989** for water harvesting and main storage systems within the Schedule area must provide allocations of water for environmental purposes that are consistent with protecting beneficial uses.

(2) In the interim, until the establishment of bulk entitlements for the Yarra River, protection agencies responsible for water resource management, including water harvesting and main storage systems must ensure water resources are managed to protect beneficial uses, and to the extent practicable, to provide a flow in the Yarra River downstream of the Yering Gorge diversion of no less than 245 ML/day.

(3) Protection agencies responsible for water resource management including water diversions, drainage and waterway management must ensure water resources are managed to protect beneficial uses, and in particular that -

(a) stream flow management plans are developed and implemented to ensure water allocations, including those made under sub-clause (1) are managed to protect beneficial uses;

(b) water diversions (including the approval of new diversions) and stream flow regulation activities are managed in accordance with relevant stream flow management plans;

(c) groundwater harvesting does not reduce stream flow unless consistent with the objectives of the relevant stream flow management plan; and

(d) where it is in accordance with the relevant streamflow management plan, water trading is considered as a mechanism for meeting additional demands for water in situations where additional diversions or groundwater harvesting could have an adverse impact on beneficial uses.

16. Flood plains and flood detention

Protection agencies (including local government) responsible for drainage and waterway management must ensure that floodplains are managed to protect beneficial uses, and in particular that -

(1) land use or works on flood prone areas do not increase the risk during flood events of transportation of materials which would pose a risk to beneficial uses; and

(2) waterways and their flood plains retain sufficient flood detention capacity to moderate peak flows to protect the beneficial uses of downstream waterways.

17. Recreation

Protection agencies must ensure that facilities for recreational activities on or adjacent to waterways are planned and managed to protect beneficial uses.

18. Operation and maintenance of ships and harbour activities

Protection agencies and bodies responsible for regulating and/or operating ships must ensure that ships and harbour reception facilities are managed to protect beneficial uses and, in particular that -

(1) discharge of wastes from ships including ballast and hull waters is managed in accordance with current best practice or with any relevant best practice environmental management guidelines adopted by the Authority;

(2) loading and unloading of ships and other harbour activities are conducted in accordance with current best practice or with any relevant best practice environmental management guidelines adopted by the Authority;

(3) potential contaminants from ship maintenance and related activities are contained and disposed of in accordance with current best practice or with any relevant best practice environmental management guidelines adopted by the Authority;

(4) sewage, oil, sediment or litter produced on board ships is not disposed of to the waters of the Schedule area; and

(5) sewage produced on board ships is contained for subsequent transfer to treatment works or disposal in accordance with current best practice or with any relevant best practice environmental management guidelines adopted by the Authority.

19. Dredging or de-silting waterways and the disposal of dredged material

(1) Protection agencies or bodies undertaking dredging for navigation and port facilities and de-silting of waterways must ensure that -

(a) these activities are conducted in accordance with current best practice or with any relevant best practice environmental management guidelines adopted by the Authority;

(b) these activities are conducted and managed to ensure local exceedances of the environmental objectives listed in Table 2 are confined to the smallest practicable area and over the shortest practicable time in the vicinity of the dredging and disposal operation;

(c) these activities do not re-suspend and/or disperse sediments or accumulated contaminants that will be detrimental to the long term protection of beneficial uses; and

(d) dredge spoil is disposed to land in preference to water wherever practicable and environmentally beneficial as determined by the Authority.

(2) Protection agencies must ensure that any permit issued or approval given in relation to a planning scheme for dredging or de-silting operations contain requirements that are consistent with sub-clauses 1(a) (b) (c) and (d).

(3) Protection agencies undertaking dredging or de-silting operations for the purposes of waterway management and/or flood control must ensure management is consistent with the protection of beneficial uses, particularly the maintenance of natural aquatic ecosystems and associated wildlife.

Catchment Management

20. Sewage management

(1) Protection agencies responsible for sewerage provision and management must ensure that losses of sewage from the sewerage system through sewer overflows, leakages and collapses are controlled and minimised to protect beneficial uses, and in particular that -

(a) new sewerage infrastructure is capable of containing the flows associated with at least a 1-in-5-year rainfall event;

(b) existing sewerage infrastructure is progressively upgraded so that it is capable of containing the flows associated with a 1-in-5-year rainfall event or other standard of performance approved by the Authority, with priority given to those areas which most adversely affect, or have the potential to most adversely affect beneficial uses; and

(c) sewerage infrastructure is managed, maintained and operated to eliminate system failure and maintain system performance to design standards.

(2) In implementing clause 40(c) of the Principal Policy -

(a) Local government, in conjunction with the Authority, will identify allotments which, because of allotment size, topography, soil type or other factors, are not capable of treating and retaining wastewater within their boundaries, and recommend priorities for the provision of sewerage services;

(b) water companies with responsibility for provision of sewerage services must submit a

sewerage plan to government, for approval, within 12 months of the day upon which this Schedule comes into effect, that -

(i) identifies priorities for service provision, taking into account those priorities identified in sub-clause 2(a), and giving priority to those areas where environmental and health benefits can be achieved most cost effectively;

(ii) outlines how services are to be provided; and

(iii) provides proposed timelines for implementation; and

(c) the sewerage plans prepared under sub-clause 2(b) are to be reviewed annually.

(3) Protection agencies (in particular local government) and occupiers of premises must ensure that small wastewater treatment systems and septic tank systems are managed to protect beneficial uses, and in particular that -

(a) permits for small wastewater treatment systems and septic tank systems contain conditions for operation and maintenance that are consistent with current best practice or with any relevant best practice environmental management guidelines adopted by the Authority;

(b) small wastewater treatment systems and septic tank systems are installed, managed and maintained in accordance with current best practice or with any relevant best practice environmental management guidelines adopted by the Authority; and

(c) premises within a declared serviced area which are not capable of treating and retaining wastewater within the boundaries of the allotment, are connected to the sewerage system.

21. Potable water supply

Protection agencies must ensure that potable water supply areas, water storages and the reticulated water supply system are managed to protect beneficial uses, and in particular must ensure that -

(1) public access to the potable water supply areas of the Aquatic Reserves Segment is restricted in accordance with management policies and plans for the area approved by the responsible Minister; and

(2) any discharges resulting from the operation, maintenance or repair of potable water supply facilities are managed in accordance with current best practice or with any relevant best practice environmental management guidelines adopted by the Authority;

22. Run-off from urban land, built-up areas and main roads

Protection agencies responsible for drainage and waterway management, in conjunction with planning authorities (including local government), must ensure that urban stormwater run-off is managed to protect beneficial uses, and in particular that -

(1) new urban development and drainage systems are designed, constructed and maintained in accordance with current best practice or with any relevant best practice environmental management guidelines adopted by the Authority;

(2) existing drainage systems are managed and maintained in accordance with current best practice or with any relevant best practice environmental management guidelines adopted by the Authority, and in particular that -

(a) sources of pollution and opportunities for minimising the generation and transport of stormwater pollutants at, or near to, source are identified and addressed;

(b) opportunities for installing stormwater treatment measures, including water quality, litter control and flow improvement measures, as part of asset maintenance and replacement programs, are identified and exploited;

(c) the environmental performance of the drainage system is progressively improved, with priority given to those areas which most adversely affect, or have the potential to most adversely affect beneficial uses; and

(d) the volume, timing and velocity of stormwater entering waterways is managed to minimise adverse impacts on waterway stability, flow regimes and in-stream and riparian habitat.

23. Earthworks

Protection agencies, including local government, must ensure that land use or construction activities involving earthworks are managed to protect beneficial uses, and in particular that -

(1) earthworks and construction activities are managed in accordance with current best practice or with any relevant best practice environmental management guidelines adopted by the Authority so as to minimise off-site transport of sediment or settleable matter in surface water run-off; and

(2) any approval issued by a protection agency for such works or activities contains requirements consistent with this Schedule.

24. Sediment from roads

Protection agencies, including local government, must ensure that the approval, construction and management of unsealed roads is managed to protect beneficial uses, and in particular that -

(1) planning permits for developments which propose access by unsealed roads or roads with batters or drains, include provisions for effective stabilisation measures to prevent erosion and transport to waterways of sediment and settleable material, detrimental to the protection of beneficial uses;

(2) unsealed roads and roads with batters or drains are managed and maintained in accordance with current best practice or with any relevant best practice environmental management guidelines adopted by the Authority to minimise the transport of sediment and settleable material to waterways; and

(3) where clause 24(2) is inadequate to protect beneficial uses, the road surfaces are sealed and drainage systems are provided consistent with current best practice or with any relevant best practice environmental management guidelines adopted by the Authority.

25. Run-off from non-urban land

Protection agencies and occupiers of premises adjacent to waterways must ensure that non-urban land is managed to protect beneficial uses, and in particular that -

(1) run-off from non-urban land is minimised in accordance with current best practice guidelines; and

(2) best practice guidelines under sub-clause (1) are developed by protection agencies responsible for natural resource management in collaboration with rural land managers, primary industry and community representatives, and are targeted towards achievement of the objectives of this Schedule.

26. Salinity control

Protection agencies responsible for land use planning and management must ensure that management, use or changes in use of natural resources do not contribute to increasing the salinity of the land or waters of the Schedule area.

Related Activities

27. Monitoring, assessment and reporting of environmental quality and policy performance

(1) The Authority will ensure that -

(a) monitoring of environmental quality in the Schedule area, through its programs and those of protection agencies, provides the information necessary to assess compliance with the provisions of this Schedule;

(b) protection agencies having powers or duties in respect of the management or use of the natural resources of the Schedule area carry out monitoring of ambient environmental quality to enable assessment of the likely impact of that management or use on the environment; and

(c) where deemed appropriate any works approval, licence or licence amendment in respect of a discharge of wastes to any waters in the Schedule area is subject to conditions that the occupier of the premises shall, at the occupier's cost, carry out monitoring of ambient environmental quality to assess the likely impact of the discharge on the environment.

(2) The monitoring programs referred to in sub-clause (1) including sampling and analysis methods, quality assurance measures, assessment protocols and reporting protocols associated with the monitoring programs must be those approved by the Authority.

(3) The Authority will ensure that the quality of surface waters within the Schedule area is periodically reported to the public.

(4) A report under sub-clause (3) must include -

(a) an overview of water quality within the Schedule area;

(b) a review of the effectiveness of the implementation of this Schedule; and

(c) an assessment of the adequacy of monitoring program(s).

(5) Protection agencies must contribute to the preparation of reports under sub-clause (3) by making available water quality information and data for the Schedule area, and reporting progress of implementation of programs targeted towards achievement of Schedule goals.

28. Best practice guidelines, protocols and programs

The Authority will make publicly available a list and copies of the guidelines, protocols and programs approved by the Authority which are referred to in this Schedule.

PART 3 - REVOCATION OF REDUNDANT STATE ENVIRONMENT PROTECTION POLICY

6. Revocation of the State environment protection policy (Waters of the Yarra River and Tributaries) NO. W-29.

The State environment protection policy (Waters of the Yarra River and Tributaries) NO. W-29 is **revoked**.

Protecting water quality in the Yarra Catchment
Variation of State environment protection policy (Waters of Victoria)
Explanatory Notes

Purpose of State Environment Protection Policy

State environment protection policies (SEPP) are declared by the Governor in Council under section 16(1) of the **Environment Protection Act 1970**. SEPPs provide a framework for environmental decision-making and a clear set of publicly agreed environmental objectives that all sections of the community must work together to achieve. Environment protection programs in Victoria are developed within this broad statutory framework.

A State environment protection policy may apply to Victoria generally or to a portion of the State and will include:

- identification of the beneficial uses of the environment that are to be protected (beneficial uses include uses of the environment such as ecosystem support, the use of water for drinking and recreational uses);
- selection of indicators (measures) of environmental quality;
- a statement of environmental quality objectives;

and may describe the program by which the stated environmental quality objectives are to be attained.

Background to Schedule F7

The beneficial uses of the waters of the Yarra catchment were previously protected through two State environment protection policies:

- State environment protection policy (Waters of Yarra River and Tributaries) ('the Yarra SEPP'), and
- State environment protection policy (Waters of Victoria).

The Yarra SEPP, which came into effect in 1984 served primarily to guide EPA's works approval and licensing functions in the Yarra catchment and required action by a range of government bodies and private individuals. The Yarra SEPP has now been replaced by the new Schedule F7 to the SEPP (Waters of Victoria).

The development of Schedule F7 is the result of extensive scientific investigation and community consultation conducted through the YarraCare program. The Schedule development included extensive consultation with community groups represented on four sub-catchment YarraCare working groups, the Port Phillip Regional Catchment and Land Protection Board, government agencies, water supply and sewerage bodies and major industrial water users. The Schedule's development involved two key phases of public input:

- advertisement of EPA's intention to revise the Yarra SEPP, and an extensive program of consultation to develop a draft Schedule F7 and draft Policy Impact Assessment (PIA) which were released for public comment in December 1995; and
- consideration of public comment as well as further negotiation and consultation with stakeholders to finalise Schedule F7, development of the final PIA and preparation of a document setting out EPA's responses to public comments received on the draft documents.

The Order in Council

The Schedule is preceded by the necessary legal preamble for an Order in Council.

The purposes of the Order are to:

- vary State environment protection policy (Waters of Victoria) to add Schedule F7. Waters of the Yarra Catchment; and
- revoke the redundant State environment protection policy (The Waters of the Yarra River and Tributaries) No. W-29.

The order commences upon publication in the Government Gazette.

Schedule F7 in detail

Title

Clause 1 gives the title of the new Schedule to the State environment protection policy (Waters of Victoria) "Schedule F7. Waters of the Yarra Catchment".

Contents

Clause 2 divides Schedule F7 into five (5) parts (Preliminary, Boundaries of the Area Affected, Beneficial Uses to be Protected, Environmental Quality Indicators and Objectives, and Attainment Program) and outlines their contents.

PART I - PRELIMINARY

Definitions

Clause 3 provides specific definitions of various words and terms used throughout the Schedule. The purpose of these definitions is not to provide a glossary of technical terms but to give a specific meaning to a phrase which may be limited or otherwise different to the meaning currently accepted in every-day language.

With respect to the definition of toxicants and taints, the Authority may specify criteria for substances which are potential toxicants or taints in cases where they are not adequately addressed in the Australian Water Quality Guidelines for Fresh and Marine Waters (AWQG), published by the Australian and New Zealand Environment and Conservation Council (ANZECC).

Schedule Goals

Clause 4 sets out the goals of the Schedule.

PART II - BOUNDARIES OF THE AREA AFFECTED

Schedule Area

Clause 5 defines the boundaries of the Schedule area, i.e. the area to which the Schedule applies. The Schedule area is represented in Figure 1 of the Schedule.

Segments

The Yarra catchment has been broken down into a series of "segments" which are discrete geographic areas which together comprise the Schedule area. The segments are characterised on the basis of different types and condition of ecosystems, different land uses, as well as different beneficial uses which are protected in different parts of the Schedule area.

Clause 6 divides the Schedule area into seven (7) segments, as follows:

- *Aquatic Reserves Segment*
- *Parks and Forests Segment*
- *Rural Eastern Waterways Segment*
- *Rural Western Waterways Segment*
- *Urban Waterways Segment*
- *Upper Estuary Segment*
- *Yarra Port Segment*.

PART III - BENEFICIAL USES TO BE PROTECTED

State environment protection policy provides a framework for maintaining environmental quality sufficient for the protection of existing and anticipated beneficial uses of the environment. A beneficial use is protected if environmental quality is such that the risk to that use is within acceptable limits. Declaration of a beneficial use does not confer rights to a use or override management decisions over access to, or use of, natural resources. Beneficial uses must be undertaken in a manner which does not prejudice other beneficial uses of the segment.

The beneficial uses protected under Schedule F7 are the same as those applied throughout Victoria by the SEPP (Waters of Victoria), with adjustments to clarify their meaning or improve their appropriateness to catchment needs.

Clause 7 lists the protected beneficial uses in each segment. These are set out in Table 1 of Schedule F7. The beneficial uses to be protected are:

- Maintenance of natural aquatic ecosystems and associated wildlife, which includes the maintenance of stable and healthy animal and plant communities within the aquatic environment, as well as the terrestrial and arboreal life which depend upon these ecosystems. This beneficial use is divided into five categories which are applied to ecosystems of different types and condition. These categories are outlined in Table 1, below.

Table 1. Levels of ecosystem protection

Natural ecosystems	These are unmodified ecosystems, as found in areas where there is minimal human disturbance, such as closed water supply catchments.
Natural ecosystems with occasional disturbance due to human activities	These are ecosystems typical of forested land where there is some disturbance to the catchment. Disturbances must be temporary and minimised in time and area and the ecosystem should return to one typical of an undisturbed ecosystem within one year. The ecosystems, therefore, must retain a high degree of resilience.
Substantially natural ecosystems with some modification	While the surrounding catchment is modified, the stream itself should be capable of supporting a substantially natural community. These ecosystems will be expected in rural areas.
Modified ecosystems	These ecosystems occur in substantially modified catchments and are typical of urban areas. The stream ecosystems are highly disturbed, and, though still retaining native species, they are fewer in number and occur in different proportions than in less disturbed ecosystems.
Highly modified ecosystems, with some habitat values	These are typical of the Yarra Port and Yarra Tidal Segments of the current Yarra Policy. Little is known of the ecological systems of these areas. However, native wildlife, such as birds, tortoises and fish, are known to be present.

- *Passage of indigenous fish* protecting indigenous migratory fish from physical, chemical or temperature barriers which may threaten their survival.
- *Maintenance of indigenous riparian vegetation* ensuring that the contribution made by indigenous vegetation to the health of aquatic ecosystems and the environmental health of waterways, is explicitly protected. Protection of this beneficial use in the Urban Waterways segment will encourage improvements in the quality of riparian vegetation across the urban area.
- *Water based recreation*, which falls into three distinct categories
  - ⇒ *Primary contact (eg. swimming, water skiing),*
  - ⇒ *Secondary contact (eg. boating, fishing), and*
  - ⇒ *Aesthetic enjoyment (eg. walking by the waters)*.

  Schedule F7 establishes primary contact recreation as a protected beneficial use in the tributaries of the Urban Waterways segment from 31 December 2002, and suspends its protection as a beneficial use in the Upper Estuary segment until 31 December 2002, at which time it will be reintroduced. Achievement of this goal will require significant water quality improvements in these areas.
- *Commercial and recreational use of edible fish and crustacea* ensuring that fish taken from the environment should be free of pollutants and toxicants which could pose a risk to public health. This beneficial use does not refer to commercial fish farming operations as they do not occur within the waters of the Schedule area (as defined under SEPP (Waters of Victoria)), but rely on the extraction of water for commercial production.

- Potable water supply, protecting water for human consumption. This is protected at three levels, reflecting higher levels of treatment which will be necessary further down the catchment:
  - ⇒ *untreated;*
  - ⇒ *with treatment (disinfection only)*, and
  - ⇒ *with treatment (disinfection and removal of suspended solids)*.
- *Agricultural water supply*, ensuring that uses of water within the Schedule area for watering animals and plants are protected. Agricultural uses are divided into two separate beneficial uses:
  - ⇒ *Stock watering, and*
  - ⇒ *Irrigation (including watering parks and gardens)*.
- Other commercial purposes includes two beneficial uses:
  - ⇒ *Industrial water use;* and
  - ⇒ *Navigation and shipping*.

PART IV - ENVIRONMENTAL QUALITY INDICATORS AND OBJECTIVES

Indicators of environmental quality provide a standard measure of the condition of aquatic environments. Environmental quality objectives set out targets for particular indicators which (if achieved) will ensure that the beneficial uses identified within each segment are protected.

Clause 8 specifies the environmental quality indicators and objectives that apply to the Schedule area and how these are to be assessed. Schedule F7 establishes two types of environmental quality objectives: physico-chemical objectives, and ecological objectives.

Physico-chemical indicators and objectives

The environmental quality indicators and objectives reflect the water quality requirements of various beneficial uses, with the most sensitive beneficial use in any segment effectively setting the water quality objective for that segment. In many areas, maintenance of natural aquatic ecosystems and associated wildlife will be the most sensitive beneficial use in terms of water quality. Protecting this beneficial use will indirectly protect other beneficial uses with less demanding water quality requirements.

The physico-chemcial indicators of environmental quality adopted in the Schedule are:

- temperature
- pH (acidity and alkalinity)
- salinity
- dissolved oxygen
- turbidity
- suspended solids
- toxicants
- taints
- E.coli
- coprostanol
- total phosphorus
- total nitrogen.

The specific quantitative environmental quality indicators for the Segments of the Schedule are set out in Table 2 (In-stream Water Quality Indicators and Objectives) of Schedule F7. Objectives have been based on the environmental criteria set out in *Australian Water Quality Guidelines for Fresh and Marine Waters*[1] , and amended where necessary to reflect the characteristics of the Yarra catchment. Objectives for pH have been established as ranges which reflect normal seasonal variation. Within that range, pH cannot vary more than 0.5 units outside the maximum or minimum value which could normally be expected to occur at the time of sampling. "Coprostanol" is a faecal

[1] Australian and New Zealand Environment and Conservation Council (ANZECC) (1992)

sterol which can be used as a diagnostic tool to distinguish faecal contamination of human origin from that of herbivores, dogs or birds. The specific limits for toxicants designated as "T" in the Schedule are outlined below. Values for "TH" and "TC" are set out in Tables 2.11 and 2.12 of the AWQG respectively. Any discharge of waste to water must not cause any of these water quality objectives to be exceeded in receiving waters.

Table 2. Values for "T" in Schedule F7

Toxicants	Schedule F7 (mg/l)	Toxicants	Schedule F7 (mg/l)
Aluminium	0.005 if pH <6.5 0.1 if pH >6.5	Iron Lead	1.0 0.001
Ammonia (unionised)	0.02-0.03	Mercury	0.00005
Arsenic	0.05	Methyl mercury	0.000004
Beryllium	0.004	Nickel	0.015
Cadmium	0.0002	Selenium	0.005
Chromium (VI)	0.01	Silver	0.0001
Copper	0.002	Sulphide	0.002
Cyanide	0.005	Zinc	0.005

In recognition of the impact of catchment inputs on the health of Port Phillip Bay, the Schedule also establishes a nutrient load objective which is linked to the Nutrient Reduction Plan to be developed under Schedule F6 (Waters of Port Phillip Bay). It is expected that quantitative load reduction targets for the Yarra catchment will be able to be derived from work to develop the Plan.

Ecological indicators and objectives

The Schedule also establishes ecological indicators and objectives to provide a means of directly assessing the health of aquatic ecosystems and establishing whether stream health in the catchment is consistent with protection of the beneficial use "maintenance of aquatic ecosystems". The ecological objectives which apply to the Schedule area are outlined in Table 3 of the Schedule.

The aquatic invertebrate community has been selected as an indicator of ecosystem health as invertebrates are critical to stream functioning, both in processing energy and as a food supply to fish, platypus and some birds. Invertebrate communities also provide a means of assessing the environmental condition of waterways over time, responding to intermittent stresses that are often missed in chemical monitoring programs.

Three methods of ecosystem health assessment based on aquatic invertebrates have been established. The objectives listed in Table 3 have been determined using the Rapid Bioassessment (RBA) method[2]. The three methods are:

- The biotic index SIGNAL (Stream Invertebrate Grade Number - Average Level) which is an index of water pollution based on tolerance or intolerance of biota to pollution[3] . Scores of three to four indicate very poor water quality, around five to six indicates some degree of pollution and scores of seven or greater indicate clean water.
- presence of a desirable minimum number of invertebrate families; and
- presence of a suite of key invertebrate families. (Table 4 of the Schedule lists the key families which should be found in each of the segmets.)

[2] Tiller, D and Metzeling, L. (in preparation). *The Rapid Bioassessment of Streams: The approach and methods of the Victorian Environment Protection Authority*, EPA

[3] Chessman, b. (1995) "Rapid assessment of rivers using macro-invertebrates: A procedure based on habitat specific sampling, family level identification and a biotic index" in *Australian Journal of Ecology*, 20: 122-129

Accurate application of the objectives in Table 3 depends on sampling occurring in both spring and autumn, using both “kick” and “sweep” collection methods, which are described in the protocol. False conclusions about the health of an ecosystem can be reached unless the procedures outlined in the EPA approved protocol are used.

The Schedule also establishes several fish species as indicators of environmental quality, and sets the objective as their re-establishment throughout their natural range in the catchment, with the exception of the waterways upstream of the Upper Yarra Dam.

PART V - ATTAINMENT PROGRAM

The attainment program provisions in Schedule F7 operate in addition to the attainment program of the SEPP (Waters of Victoria). The overall thrust of the attainment program is to promote integrated management of catchment activities, recognising the cumulative effects of different activities on water quality and the consequent need to coordinate planning of land, water and waterway management.

The attainment program is based on the concept of Best Practice Environmental Management and has been designed to facilitate the development and adoption of flexible management responses to achieve best environmental outcomes at least cost.

Addition to Principal Policy provisions

Clause 9 specifies that, in addition to the Clauses 10 to 54 of the Attainment Program of the State environment protection policy (Waters of Victoria), a number of additional clauses (clauses 10 to 27 of Schedule F7) apply specifically to the Yarra catchment.

Responsibilities

Clause 10 sets out the responsibilities of EPA and of protection agencies to implement the provisions of the Attainment Program.

Yarra Catchment Action Plan

Clause 11 requires the development of a catchment action plan to serve as the major instrument for the achievement of the Schedule's objectives. The Action Plan has been developed in parallel with the Schedule, through the community-based YarraCare program. This linked development process has ensured that the broad responsibilities for action established in the Schedule have been translated into effective commitments to action by key stakeholders.

The function of the Action Plan is to:

- provide an integrated, cooperative and flexible framework to address different activities affecting water quality within the catchment; and
- facilitate cooperation between key stakeholders including local government, relevant state government agencies, water and sewerage authorities, the waterway and drainage manager, primary producers (including "hobby" farmers) and licensed dischargers; and
- translate the principles of responsible environmental management outlined in the Schedule, into specific commitments to action by key stakeholders.

Implementation of the Action Plan will be largely community-driven and focus on the implementation of local action plans by local government and community-based groups with support from key government agencies, public authorities and industry. The Action Plan will also play a key role in implementing the priorities of the Port Phillip Regional Catchment Strategy, within the Yarra catchment. EPA, in cooperation with the Department of Natural Resources and Environment and the Port Phillip Regional Catchment and Land Protection Board will promote and review the implementation of the action plan, in consultation with other protection agencies.

Point source management

Point source discharges, particularly treated sewage effluent, have significant detrimental impacts on the environmental quality of receiving waters, particularly when discharges are occurring at times of low flow when the risk of algal blooms is highest. The intention of clause 12(1) is to progressively reduce such impacts. The existence of a mixing zone established as a condition of an EPA discharge licence is used as a surrogate indicator of impacts and this clause provides for the progressive reduction and elimination of such zones.

Water quality in most parts of the Yarra catchment is currently close to, or above Schedule objectives, particularly for nutrients. Therefore, the elimination of mixing zones in the Yarra catchment will require discharge quality to at least meet environmental objectives for receiving waters, particularly in cases where effluent volume is large compared with flow in the receiving stream.

Local sewage treatment plants operated by Yarra Valley Water collectively represent the largest point source of inputs (particularly nutrients) to the Schedule area. Technical knowledge is sufficient to predict the rate of progress towards the goal established in sub-clause (1). Consequently, a performance requirement for treatment plants with capacity in excess of 0.1 ML/day has been established in sub-clause (2).

The assessment as to whether a discharge is causing a detrimental change in receiving water quality is to be made in accordance with the in-stream monitoring and assessment protocol adopted by the Authority[4] .

Off-set measures

Clause 13 provides for the implementation of "off-set measures". Off-sets are a mechanism which allows the setting of discharge limits for a point source discharge to take into consideration the effects of measures to reduce the impacts of some other point source discharge or non-point source. Such a strategy must be demonstrated to have greater or equivalent environmental benefits to measures applied at the first point source. EPA can not approve any off-set proposal which would be likely to prejudice any designated beneficial use. Off-set measures are set for a specified period and will not be renewed or continued if the offset measure is not providing an equivalent or greater level of protection of beneficial uses.

Stabilisation of waterways and protection of habitat

Clause 14 sets out the attainment measures necessary for the stabilisation of waterways and protection of habitat, particularly the maintenance and enhancement of indigenous, riparian vegetation. The clause emphasises the responsibilities of managers of both public and private land adjacent to waterways to ensure management activities do not pose a threat to beneficial uses. For example, managers should ensure fertilisers and biocides are not applied directly to waters and stock access to streams is restricted so as to minimise erosion and destruction of riparian habitat.

The responsibilities of the waterway manager to ensure that activities such as de-snagging are carried out in accordance with best practice[5] are also made explicit. Clause 14 also requires that works affecting waterways provide for the passage of indigenous fish, and existing barriers to fish movement are progressively removed. Priorities for remedial works to assist fish passage over existing structures have been identified within the Yarra Catchment Action Plan.

Environmental water requirements

Clause 15 sets out requirements for improved management of environmental flows in the Yarra catchment, and establishes a link with the Bulk Entitlement process (under the Water Act 1989). Until Bulk Entitlement Orders are established for the Yarra River (expected early to mid 1998), the Schedule requires that to the extent practicable, a flow of no less than 245 ML/day be provided downstream of the Yering Gorge diversion. This provision makes clear the responsibility to ensure environmental needs are considered in resource allocation decisions, while recognising that under low flow periods, even with responsible management, flow may fall below 245 ML/day.

The Schedule also emphasises the importance of managing water resources for multiple uses in the context of a good understanding of catchment hydrology, by requiring the development and implementation of streamflow management plans. Water resource management activities such as water harvesting, water diversions and streamflow regulation activities are also subject to the provisions of the **Water Act 1989**, and relevant bulk entitlement orders.

Flood plains and flood detention

Clause 16 requires that flood plains be managed so as to minimise the risk of the transport of contaminants during floods, and to provide temporary storage of floodwaters so as to moderate downstream peak flows.

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4 *Point Source Discharges to Streams: Protocol for In-Stream Monitoring and Assessment*, EPA (in preparation).

5 Best practice environmental management guidelines for in-stream works to be developed by Melbourne Water Corporation in conjunction with Department of Natural Resources and Environment and Parks Victoria.

Recreation

Clause 17 emphasises that agencies responsible for recreation facilities on or adjacent to waterways are responsible for managing those facilities to protect beneficial uses.

Operation and maintenance of ships and harbour facilities

Clause 18 requires ships and harbour reception facilities be managed according to best practice[6]. Commercial river craft to pump out sewage at facilities such as those at Princes Wharf, rather than to discharge sewage directly to the Schedule area[7]. These provisions are consistent with SEPP (Waters of Victoria), Schedule F6 (Waters of Port Phillip Bay) and the licence requirements applying to these craft as administered by Parks Victoria.

Dredging or de-silting waterways and the disposal of dredged material

Clause 19 requires protection agencies to carry out dredging and spoil disposal activities according to best practice[8] so as to avoid the destruction of habitat and the re-suspension or dispersion of sediments.

Sewage management

Clause 20 requires that the sewerage system be managed so as to minimise existing and potential adverse impacts of sewage on surface waters. Under this provision, protection agencies responsible for the provision and management of sewerage are required to minimise losses (including spills, leaks and collapses) from the sewerage system. In particular, new sewerage infrastructure must be capable of containing the flows associated with at least a 1-in-5 year rainfall event, and existing infrastructure must be progressively upgraded to meet the 1-in-5 year performance benchmark. Sewerage systems are to be managed and operated to maintain system performance and eliminate avoidable operator error or system failure.

Sub-clause (2) provides a framework for identifying priorities for service provision, developing options and timelines for implementation, leading to the development of a public sewerage plan agreed by all stakeholders. This builds on the statewide provisions of SEPP (Waters of Victoria) (the "Principal Policy") that sewerage is to be provided as soon as possible to all allotments which are not capable of retaining and treating wastewater on-site. The use of the generic term "sewerage" in the Schedule does not refer exclusively to traditional sewerage infrastructure, but is also intended to encompass the range of cost-effective alternatives that may also exist.

Septic tank systems are to be maintained according to best practice[9] and properties in declared serviced areas that are unable to contain waste on-site, are required to connect to sewerage.

Potable water supply

Clause 21 requires that public access to potable water supply areas be restricted, in order to safeguard Melbourne's drinking water supplies. Public access is to be restricted in accordance with management plans approved by the responsible Minister. The Schedule also requires Melbourne Water to ensure any discharges or releases from storages resulting from the operation, maintenance or repair of water supply facilities do not cause adverse impacts on waterways.

Run-off from urban land, built up areas and main roads

Clause 22 makes explicit the responsibility of protection agencies to manage all aspects of urban stormwater run-off in an integrated way, so as to minimise the adverse impacts of low quality, high volume and high velocity stormwater run-off on waterways. Integrated management depends on effective cooperation between local government (manager of the local drainage system) and Melbourne Water (manager of the trunk drainage system).

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6 *Inwater Hull Cleaning Regulations*, Victorian Channels Authority

Best Practice Guidelines for Waste Reception Facilities at Ports, Marinas and Boat Harbours in Australia and New Zealand, Australia and New Zealand Environment and Conservation Council (ANZEC)

Best practice guidelines series, Australian Quarantine Inspection Service

Best practice guidelines series, Australian Marine Safety Authority

Anti-fouling guidelines, ANZEC (in preparation)

7 Sewerage disposal from vessels guidelines (to be developed)

8 Best practice environmental management guidelines (Dredging) currently being developed by Dredge Protocol Management Committee

9 *Code of Practice - Sceptic Tanks*, EPA Publication 451

The Schedule also requires drainage infrastructure to be progressively upgraded to incorporate stormwater treatment measures such as litter and sediment traps as part of normal asset upgrade and replacement works. New drainage infrastructure (including new roads), is required to be designed and constructed according to best practice[10]. Best practice guidelines are currently being developed by EPA, Melbourne Water and local government in cooperation with key industry, land development and environment groups, and encompass:

- water sensitive urban design principles;
- flow management issues;
- design and installation of stormwater treatment measures; and
- municipal operations.

Earthworks

Clause 23 requires that authorities, councils or agencies responsible for approving or undertaking works, do so in a manner consistent with the protection of beneficial uses[11].

Sediment from roads

Clause 24 requires that unsealed roads are designed, constructed and managed so as to prevent erosion and transport of surface materials to waterways[12]. This provision recognises that in some cases the most effective means of reducing sediment contamination from unsealed roads is to seal the surface, providing of course that adequate drainage is provided to cope with the increased volume and velocity of run-off which is likely to result.

Run-off from non-urban land

Clause 25 requires that non-urban land be managed according to best practice to minimise contaminated run-off containing nutrients, toxicants and suspended solids, entering wateways[13]. Non-urban land in the Yarra catchment is used for a range of business, recreational and residential purposes including agriculture and horticulture, the grazing of horses and "hobby" farms.

Salinity control

Clause 26 complements existing provisions under the SEPP (Waters of Victoria) by highlighting the need for agencies responsible for land use planning and management to ensure that land use and land use changes do not contribute to increasing salinity, particularly in the Rural Western Waterways Segment.

Monitoring, assessment and reporting of environmental quality and policy performance

Clause 27 establishes the requirement for the monitoring, assessment and reporting of environmental quality of the Schedule area. This provides the foundation for effective management of the catchment environment, by assessing the impact of present land and water based activities and the effectiveness of current management actions.

The intention of the provision is to ensure accurate, timely, user-friendly information on both catchment condition and progress of implementation of attainment program actions is available to the public. Occupiers of premises which discharge to surface waters under licence from EPA, are required to undertake appropriate water quality monitoring. EPA must approve the sampling and analysis methods and protocols[14], and will continue to provide advice and assistance to community groups undertaking monitoring.

Best practice guidelines, protocols and programs

Clause 28 requires EPA to make publicly available a list and copies of best practice guidelines, protocols and programs, including scientific sampling and assessment protocols, referred to in this Schedule. This is to provide certainty in the interpretation of the Schedule's provisions and to assist decision-makers understand and fulfill their responsibilities under the Schedule.

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[10] Best Practice Guidelines for Stormwater Management (in preparation)

[11] E*nvironmental Guidelines for Major Construction Sites* (1995), EPA Publication No. 480 *Sediment Pollution Control on Construction Sites* (1990), EPA Publication No. TG 209/90

[12] *Environmental Guidelines for Major Constuction Sites* (1995), EPA Publication No. 480
Sediment Pollution Control on Construction Sites (1990), EPA Publication No. TG 208/90
Government of Victoria (1996) *Code of practice: code of forest practices for timber production* Department of Natural Resources and Environment

[13] Best practice guidelines to be developed by Department of Natural Resources and Environment in conjunction with Catchment and Land Protection Board, industry and community representatives

[14] Tiller, D. and Metzeling, L. (in preparation) *The Rapid Bioassessment of Streams: The approach and methods of the Victorian Environment Protection Authority*, EPA.

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