
8 IMPLEMENTATION STRATEGIES

Implementation strategies for the Councils of Baulkham Hills Shire, Blacktown City, Holroyd City, and Parramatta City, and for the Roads and Traffic Authority, Sydney Water Corporation, the Parramatta Park Trust and the Upper Parramatta River Catchment Trust are listed separately in the following tables.

The implementation strategies only note those management options that have been accepted as the primary responsibility of each organisation. Hence, organisations may not agree to the responsibilities assigned to them in the options listed in Table 24 and this is reflected in their respective implementation strategies.

The EPA has required Sydney Water Corporation and the Roads and Traffic Authority to each produce a Stormwater Environment Improvement Program (SEIP), which comprises all actions identified in the Stormwater Management Plans for which the agencies are responsible. Any management options included in this Stormwater Management Plan which are deemed to be the responsibility of Sydney Water Corporation and the Roads and Traffic Authority (ie. Table 31 and Table 32) will be considered and prioritised in accordance with the SEIPs of these organisations.

All or most of the participating organisations that are listed in the Implementation Strategies must share a number of management options. These options are listed in each Implementation Strategy. Coordination will be required between these organisations to achieve the benefits for the total catchment and downstream.

The following tables represent the strategies that are purely related to one stormwater manager and largely represent capital and improvement works. In the case of Table 33, the strategies assigned to the Upper Parramatta River Catchment Trust are those that must be prepared and/or managed by the Trust for the entire catchment with little input but liaison from the other participating organisations.

The time frames replicate those assigned for the management options as shown on page 91. Please note that these are not priorities.

Cost ranges have been assigned to each management option in the implementation strategies. These are the costs used in the ranking of the management options. The costs are indicative only and may need to be revised for individual management options. For combined options that are implemented consistently across the entire catchment, the participating councils will contribute a proportion of the total cost based on the proportions averaged for the proportion of properties and area administered by each local council. The calculations are presented below, with the results in the final table (point 3).

The Stormwater Managers cannot guarantee a financial commitment to capital works beyond the next financial year. The works programs are funded annually. Hence, the implementation strategies can only provide a guideline

for the ranking of projects and works over a long-term strategy. Each Stormwater Manager shall review their annual works programs with consideration to the applicable Implementation Strategies. The review process is detailed in Section 11 (REVISION).

1. Proportion of Local Government Area (LGA) in the Upper Parramatta River Catchment (UPRC)

LGA	Area in UPRC	Proportion of UPRC (%)
Baulkham Hills Shire	42.5 km ²	39.7 (-40%)
Blacktown City	23.4 km ²	21.9 (-22%)
Holroyd City	19.4 km ²	18.1 (-18%)
Parramatta City	21.7 km ²	20.3 (-20%)
Total	107 km²	100.0

2. Proportion of Properties in the Upper Parramatta River Catchment (UPRC) based on Local Government Area (LGA)

LGA	Properties in UPRC	Proportion of UPRC (%)
Baulkham Hills Shire	21 679	32.5 (-32%)
Blacktown City	14 432	21.7 (-22%)
Holroyd City	13 293	19.9 (-20%)
Parramatta City	17 284	25.9 (-26%)
Total	66 688	100.0

3. The average of area and properties of each Local Government Area (LGA) in the Upper Parramatta River Catchment (UPRC)

LGA	Proportion of UPRC (%)
Baulkham Hills Shire	36
Blacktown City	22
Holroyd City	19
Parramatta City	23
Total	100

For state agencies, such as Sydney Water Corporation and the Roads and Traffic Authority, the contribution of costs will be negotiated prior to the finalisation of this Plan.

The implementation of this Plan relies on the coordination of all stormwater managers in the catchment. The Catchment Stormwater Taskforce will play a pivotal role in coordinating the implementation of the Plan.

Table 26: BAULKHAM HILLS SHIRE COUNCIL IMPLEMENTATION STRATEGIES

Time frame ¹	Option Ref.	Option Description	Cap. (\$)	Op. (\$)
SHORT	C7	Review resourcing and seek external funding.	\$5,000	\$1,000
	C6	Review common Performance Indicators, update	\$1,000	\$1,000
	C12	Include SMP actions in Corporate/ Business Plans	\$5,000	\$1,000
	B1a	Community stormwater education program	\$10,000	\$30,000
	B1b	Promote/ encourage councillors awareness of SMP	\$1,000	\$1,000
	C1	Improve Council's own operational practices	\$40,000	\$20,000
	B2	Extend/ continue industrial audits	\$40,000	\$30,000
	C9	Coordinate Stormwater Mgt Plan implementation	\$10,000	\$5,000
	E1	Sediment and erosion controls on building sites	\$30,000	\$25,000
	F1	Water quality controls on all new developments	\$15,000	\$10,000
SHORT-MED	F2	Enforce POEA Act pollution risk, clean up provisions	\$5,000	\$1,000
	I2	Minimum creek set backs in DCPs, LEPs	\$10,000	\$5,000
	G1	Minor oil spill response arrangements, equipment	\$10,000	\$5,000
	D1h	Carlingford shops - litter traps at source	\$5,000	\$1,000
MED-LONG	A5	Map all stormwater outlets into bushland - impacts	\$20,000	\$1,000
	G2	Locate unsewered properties upstream of Lake Parramatta and get these connected to sewer to reduce pathogen contamination in Lake.	\$5,000	\$0
	G3	Coordinate action with SWC to identify and fix all sewer leaks & overflows (including private systems)	\$1,000	\$1,000
	E6	Study first flush containment in car parks	\$3,000	\$0
	A2	Educate golf courses to reduce nutrients, organics	\$5,000	\$1,000
LONG	C5	Identify contaminated land causing leachate	\$30,000	\$2,000
	D1g	North Rocks shops - litter traps at source	\$9,000	\$2,000
	D1f	Northmead shops - litter traps at source	\$20,000	\$4,000
TOTAL COSTS			\$280,000.00	\$147,000.00

1. Time frames are not priorities. Each participating organization shall implement the options within the time frames given. Time frames are abbreviated as follows: SHORT = Short Term (1-3 years); SHORT-MED = Short to Medium Term (1-5 years); MED-LONG = Medium to Long Term (1-10 years); LONG = Long Term (1-20 years)

Table 27: BLACKTOWN CITY COUNCIL IMPLEMENTATION STRATEGY

Time frame ¹	Option Ref.	Option Description	Cap. (\$)	Op. (\$)
SHORT	C7	Review resourcing and seek external funding.	\$5,000	\$1,000
	C6	Review common Performance Indicators, update	\$1,000	\$1,000
	C12	Include SMP actions in Corporate/ Business Plans	\$5,000	\$1,000
	B1a	Community stormwater education program	\$20,000	\$20,000
	B1b	Promote/ encourage councillors awareness of SMP	\$1,000	\$1,000
	C1	Improve Council's own operational practices	\$40,000	\$20,000
	B2	Extend/ continue industrial audits	\$40,000	\$30,000
	C9	Coordinate Stormwater Mgt Plan implementation	\$10,000	\$5,000
	E1	Sediment and erosion controls on building sites	\$30,000	\$25,000
	F1	Water quality controls on all new developments	\$15,000	\$10,000
	E2a	Treat road runoff - intersection Prospect Hwy Sev Hls	\$55,000	\$5,000
SHORT-MED	F2	Enforce POEO Act pollution risk, clean up provisions	\$5,000	\$5,000
	J2	St Martins commercial area: at-source traps, education	\$97,000	\$5,000
	D1i	'The Hills' shops – litter traps at source	\$5,000	\$1,000
	D1j	Blacktown shops – litter traps at source ²⁸	\$12,000	\$3,000
	D1k	Lalor Park shops – litter traps at source ²⁹	\$3,000	\$1,000
	I2	Minimum creek set backs in DCPs, LEPS	\$10,000	\$5,000
	G1	Minor oil spill response arrangements, equipment	\$10,000	\$5,000
B4a	Sub-catchment education program – Glenwood	\$10,000	\$3,000	
MED-LONG	H1a	Revegetate Lalor Creek- Edna Place, Kings Langley	\$15,000	\$3,000
	E7	Oil grit separator etc d/s drive in Augusta St (Btn Ck)	\$45,000	\$7,000
	D2s	Litter boom on Toongabbie Ck d/s Old Windsor Rd	\$9,000	\$6,000
	D2k	Stormwater boom - Blacktown Ck (Aquatic Centre) at Seven Hills ³⁰	\$20,000	\$5,000

²⁸ Capital works complete; ongoing maintenance.

²⁹ Capital works complete; ongoing maintenance.

³⁰ Capital works complete; ongoing maintenance.

Time frame ¹	Option Ref.	Option Description	Cap. (\$)	Op. (\$)
	D2l	Stormwater boom - Blacktown Ck at Seven Hills ³¹	\$10,000	\$5,000
	D2n	In-line trap: Toongabbie & Blacktown Cks u/s McCoy	\$350,000	\$5,000
	D2f	In-line trap: Metella Creek downstream of Prospect 'Home Base'	\$150,000	\$10,000
	D2h	In-line trap - Seven Hills industrial area	\$50,000	\$20,000
	A1b	Constructed wetland - Metella Reserve, Toongabbie	\$1,000,000	\$10,000
	G3	Coordinate action with SWC to identify and fix all sewer leaks & overflows (including private systems)	\$1,000	\$1,000
	A3a	2 aeration fountains: William Lawson Res wetland	\$40,000	\$3,000
	E2b	Treat runoff at Orana Park on Blacktown Ck	\$200,000	\$20,000
	H1b	Riparian vegetation: Greystanes Ck west tributary	\$70,000	\$7,000
	F7	Drainage and environment audit: Seven Hills Ind Area	\$55,000	\$15,000
	E6	Study first flush containment in car parks	\$3,000	\$0
LONG	C5	Identify contaminated land causing leachate	\$30,000	\$2,000
TOTAL COSTS			\$2,422,000.00	\$266,000.00

1. Time frames are not priorities. Each participating organization shall implement the options within the time frames given. Time frames are abbreviated as follows: SHORT = Short Term (1-3 years); SHORT-MED = Short to Medium Term (1-5 years); MED-LONG = Medium to Long Term (1-10 years); LONG = Long Term (1-20 years).

³¹ Capital works complete; ongoing maintenance.

Table 28: HOLROYD CITY COUNCIL IMPLEMENTATION STRATEGY

Time frame ¹	Option Ref.	Option Description	Cap. (\$)	Op. (\$)
SHORT	C7	Review resourcing and seek external funding.	\$5,000	\$1,000
	C6	Review common Performance Indicators, update	\$1,000	\$1,000
	C12	Include SMP actions in Corporate/ Business Plans	\$5,000	\$1,000
	B1a	Community stormwater education program	\$5,000	\$5,000
	B1b	Promote/ encourage councillors awareness of SMP	\$1,000	\$1,000
	C1	Improve Council's own operational practices	\$40,000	\$20,000
	B2	Extend/ continue industrial audits	\$30,000	\$30,000
	C9	Coordinate Stormwater Mgt Plan implementation	\$10,000	\$5,000
	E1	Sediment and erosion controls on building sites	\$30,000	\$25,000
	F1	Water quality controls on all new developments	\$15,000	\$10,000
SHORT-MED	F2	Enforce POEA Act pollution risk, clean up provisions	\$5,000	\$1,000
	I2	Minimum creek set backs in DCPs, LEPs	\$10,000	\$5,000
	G1	Minor oil spill response arrangements, equipment	\$10,000	\$5,000
	D1e	South Wentworthville shops - litter traps	\$5,000	\$3,000
	D1d	Greystanes shops - litter traps: install, maintain	\$9,000	\$3,000
	D2p	Pendle Hill shops - litter traps: install, maintain	\$5,000	\$1,000
MED-LONG	D1a	Wentworthville shops – litter traps: install, maintain ³²	\$24,000	\$2,000
	D1b	Toongabbie shops – litter traps: install, maintain ³³	\$18,000	\$6,000
	D1c	Westmead shops – litter traps: install, maintain ³⁴	\$5,000	\$2,000
	D2a	Amax Avenue, Girraween industrial area: in-line trap ³⁵	\$100,000	\$7,000
	D2c	Mandoon Road, Girraween industrial area: in-line trap	\$100,000	\$5,000
	D2b	Gilba Road, Girraween industrial area: in-line trap	\$100,000	\$5,000

³² Capital works complete; ongoing maintenance.

³³ Capital works complete; ongoing maintenance.

³⁴ Capital works complete; ongoing maintenance.

³⁵ Capital works complete; ongoing maintenance.

Time frame ¹	Option Ref.	Option Description	Cap. (\$)	Op. (\$)
	D1j	Isolated fast food outlets: litter traps at source	\$10,000	\$3,000
	D2d	CV Kelly Park; install, maintain in-line trap ³⁶	\$100,000	\$5,000
	E6	Study first flush containment in car parks	\$3,000	\$0
	G3	Coordinate action with SWC to identify and fix all sewer leaks & overflows (including private systems)	\$1,000	\$1,000
	A2	Educate golf courses to reduce nutrients, organics	\$5,000	\$1,000
LONG	C5	Identify contaminated land causing leachate	\$10,000	\$2,000
TOTAL COSTS			\$662,000.00	\$156,000.00

1. Time frames are not priorities. Each participating organization shall implement the options within the time frames given. Time frames are abbreviated as follows: SHORT = Short Term (1-3 years); SHORT-MED = Short to Medium Term (1-5 years); MED-LONG = Medium to Long Term (1-10 years); LONG = Long Term (1-20 years).

³⁶ Capital works complete; ongoing maintenance.

Table 29: PARRAMATTA CITY COUNCIL IMPLEMENTATION STRATEGY

Time frame ¹	Option Ref.	Option Description	Cap. (\$)	Op. (\$)
SHORT	C7	Review resourcing and seek external funding.	\$5,000	\$1,000
	C6	Review common Performance Indicators, update	\$10,000	\$1,000
	C12	Include SMP actions in Corporate/ Business Plans	\$5,000	\$1,000
	B1a	Community stormwater education program	\$10,000	\$10,000
	B4b	Implement Swim Towards 2005 education program	\$5,000	\$1,000
	B1b	Promote/ encourage councillors awareness of SMP	\$1,000	\$1,000
	C1	Improve Council's own operational practices	\$20,000	\$20,000
	B2	Extend/ continue industrial audits	\$40,000	\$30,000
	C9	Coordinate Stormwater Mgt Plan implementation	\$10,000	\$5,000
	E1	Sediment and erosion controls on building sites	\$60,000	\$50,000
	F1	Water quality controls on all new developments	\$15,000	\$10,000
	D2o	Litter booms at priority locations - eg T Ck, QB Ck	\$50,000	\$5,000
	F2	Enforce POEA Act pollution risk, clean up provisions	\$5,000	\$1,000
	J1	Investigate stormwater controls for Parramatta CBD	\$15,000	\$0
SHORT-MED	I2	Minimum creek set backs in DCPs, LEPs	\$10,000	\$5,000
	G1	Minor oil spill response arrangements, equipment	\$10,000	\$5,000
	A4a	Phoslock trial in Lake Parramatta - meso scale	\$52,000	\$0
MED-LONG	D2m	Priority list of pollution devices for oils from industrials	\$15,000	\$2,000
	A1a	McCoy Park – natural creek in floor of basin	\$1,440,000	\$10,000
	A3b	Limnology study of Lake Parramatta - stratification	\$75,000	\$15,000
	A5	Map all stormwater outlets into bushland - impacts	\$20,000	\$1,000
	E6	Study first flush containment in car parks	\$3,000	\$0
	D1n	Priority list of litter traps for shopping centres	\$20,000	\$0
	A4d	Pocket wetland at Lake Parramatta – review/remediate	\$10,000	\$2,000
	D2g	Install initial Pollution Control devices in CBD	\$120,000	\$20,000
D2g	Install rest of Pollution Control devices in CBD	\$180,000	\$30,000	

Time frame ¹	Option Ref.	Option Description	Cap. (\$)	Op. (\$)
	G3	Coordinate action with SWC to identify and fix all sewer leaks & overflows (including private systems)	\$1,000	\$1,000
	A4b	Phoslock trial in Lake Parramatta - bay scale	\$100,000	\$0
	A2	Educate golf courses to reduce nutrients, organics	\$5,000	\$1,000
LONG	A4c	Phoslock trial in Lake Parramatta - full scale applictn	\$200,000	\$0
	I3	Stream restoration works in Toongabbie Creek	\$100,000	\$30,000
	B3a	Vision and Master Plan for Upper Toongabbie Creek	\$45,000	\$2,000
	B3b	Vision and Master Plan for rest of PCC creeks	\$55,000	\$2,000
	C5	Identify contaminated land causing leachate	\$30,000	\$2,000
TOTAL COSTS			\$2,742,000.00	\$264,000.00

1. Time frames are not priorities. Each participating organization shall implement the options within the time frames given. Time frames are abbreviated as follows: SHORT = Short Term (1-3 years); SHORT-MED = Short to Medium Term (1-5 years); MED-LONG = Medium to Long Term (1-10 years); LONG = Long Term (1-20 years).

Table 30: PARRAMATTA PARK TRUST IMPLEMENTATION STRATEGY

Time frame ¹	Option Ref.	Option Description	Cap. (\$)	Op. (\$)
SHORT	C7	Review resourcing and seek external funding.	\$2,000	\$1,000
	C6	Review common Performance Indicators, update	\$1,000	\$1,000
	C12	Include SMP actions in Corporate/ Business Plans	\$1,000	\$1,000
	B1a	Community stormwater education program	\$10,000	\$5,000
	C1	Improve Trust's own operational practices	\$10,000	\$5,000
	C9	Help coordinate S/water Mgt Plan implementation	\$2,000	\$1,000
MED-LONG	D2q	Litter boom in Domain Creek	\$20,000	\$7,000
	D2r	In-line trap in Murray Gardens Creek	\$40,000	\$7,000
	E5	Infiltration kerbs along road edges in Park	\$300,000	\$1,000
	E4	Reconstruct sediment settling ponds in Domain Ck	\$200,000	\$1,000
	I1c	Create naturally functioning Murray Gardens Creek	\$350,000	\$7,000
	G1	Minor oil spill response arrangements, equipment	\$5,000	\$2,000
	E6	Study first flush containment in car parks	\$3,000	\$0
TOTAL COSTS			\$944,000.00	\$39,000.00

1. Time frames are not priorities. Each participating organization shall implement the options within the time frames given. Time frames are abbreviated as follows: SHORT = Short Term (1-3 years); SHORT-MED = Short to Medium Term (1-5 years); MED-LONG = Medium to Long Term (1-10 years); LONG = Long Term (1-20 years).

Table 31: ROADS AND TRAFFIC AUTHORITY IMPLEMENTATION STRATEGY

Time frame ¹	Option Ref.	Option Description	Cap. (\$)	Op. (\$)
SHO RT	E2	Complete, maintain treatment measures along roads	\$1,000,000	\$100,000
SHO RT- MED	D11	Litter traps at source - State Roads feasibility study	\$60,000	\$0
TOTAL COSTS			\$1,060,000.00	\$100,000.00

1. Time frames are not priorities. Each participating organization shall implement the options within the time frames given. Time frames are abbreviated as follows: SHORT = Short Term (1-3 years); SHORT-MED = Short to Medium Term (1-5 years); MED-LONG = Medium to Long Term (1-10 years); LONG = Long Term (1-20 years).

Table 32: SYDNEY WATER IMPLEMENTATION STRATEGY

Time frame ¹	Option Ref.	Option Description	Cap. (\$)	Op. (\$)
MED-LONG	D2j	Litter boom - Finlaysons Creek at end of channel	\$35,000	\$7,000
	D2i	In-line boom: Coopers Creek near Hart Drive	\$20,000	\$7,000
	D2e	In-line trap: Brickfield Creek at Victoria Road	\$200,000	\$10,000
LONG	I1a	Create naturally functioning Finlaysons Ck d/s Darcy	\$1,000,000	\$15,000
	I1b	Create naturally functioning Finlaysons Ck Lytton St	\$1,250,000	\$25,000
TOTAL COSTS			\$2,505,000.00	\$64,000.00

1. Time frames are not priorities. Each participating organization shall implement the options within the time frames given. Time frames are abbreviated as follows: SHORT = Short Term (1-3 years); SHORT-MED = Short to Medium Term (1-5 years); MED-LONG = Medium to Long Term (1-10 years); LONG = Long Term (1-20 years).

Table 33: UPPER PARRAMATTA RIVER CATCHMENT TRUST IMPLEMENTATION STRATEGY

Time frame ¹	Option Ref.	Option Description	Cap. (\$)	Op. (\$)
SHORT	C4	Common Floodplain Mgt Policy, DCPs adopted	\$10,000	\$2,000
	C10	State of the Catchment Report: publish 3 yearly	\$10,000	\$3,000
	C8	Determine pollutant export targets from catchment	\$15,000	\$1,000
	C7	Review resourcing and seek external funding.	\$5,000	\$1,000
	C6	Review common Performance Indicators, update	\$6,000	\$1,000
	C12	Include SMP actions in Corporate/ Business Plans	\$5,000	\$1,000
	B1a	Community stormwater education program	\$20,000	\$30,000
	C9	Coordinate Stormwater Mgt Plan implementation	\$10,000	\$5,000
	F1	Support water quality controls on all new development	\$10,000	\$5,000
	C2	Adoption by councils of WSUD planning provisions	\$20,000	\$5,000
	C3	Field trial in catchment of stormwater infiltration	\$165,000	\$0
SHORT-MED	F3	Coordinate all water quality monitoring	\$10,000	\$1,000
	C11	Environmental flow required to maintain ecosystems	\$50,000	\$0
MED-LONG	F8	Biological monitoring of local creeks every 2 years	\$30,000	\$15,000
	F4a	Wet weather pollutant load monitoring: C'land Hosptl	\$30,000	\$25,000
	F5	Generic study of main pollution sources and %s	\$40,000	\$0
	B4b	Environmental fair in catchment	\$25,000	\$25,000
	F6	Maintain community-based Streamwatch testing	\$170,000	\$170,000
	G1	All councils have spill response, clean up procedures	\$10,000	\$5,000
	G3	Coordinate action with SWC to identify and fix all sewer leaks & overflows (including private systems)	\$1,000	\$1,000
	E6	Study first flush containment in car parks	\$6,000	\$0
LONG	E3	Monitor effectiveness of councils' sediment controls	\$15,000	\$15,000
	F4b	Wet weather pollutant load monitoring: Johnsons Bg	\$30,000	\$25,000
TOTAL COSTS			\$693,000.00	\$336,000.00

1. Time frames are not priorities. Each participating organization shall implement the options within the time frames given. Time frames are abbreviated as follows: SHORT = Short Team (1-3 years); SHORT-MED = Short to

Medium Term (1-5 years); MED-LONG = Medium to Long Term (1-10 years);
LONG = Long Term (1-20 years).