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 SERVICES AND ECONOMIC DEVELOPMENT
 COMMITTEE AGENDA 16 May 00

DATE 07 April 2000

TO/DEST. The Chair and Members of Council

FROM/EXP. Director, Engineering Division
 Environment and Transportation Department

SUBJECT/OBJET **2000 WATERMAIN DISTRIBUTION REHABILITATION
 PROGRAMME AND THE 2000 URBAN WATERMAIN
 UPGRADES/EXTENSIONS PROGRAMME**

INTRODUCTION

This memorandum outlines the scope of work included in the 2000 Water Distribution System Rehabilitation Programme, Capital Account 900435 and the 2000 Urban Watermain Upgrades/Extension Programme, Capital Account 900200.

BACKGROUND

The Region's water distribution system consists of approximately 2,400 kms. of watermains of which approximately 240 kms. are over 50 years old. The replacement value of this system is in excess of \$1.7 billion.

The selection of each year's specific projects is determined by the structural performance (i.e. break history), life expectancies of the pipe and hydraulic performance (i.e. flow capacity) of the watermain as well as opportunities to co-ordinate with the road and sewer construction of other agencies.

DISCUSSION

2000 Water Distribution System Rehabilitation Programme - Capital Account 900435

The purpose of this programme is to ensure continuing quality and reliability of water supply to our customers with emphasis on preventing structural deterioration of various components of the distribution

system. The 2000 Water Distribution System Rehabilitation Programme (attached) is divided into four components as outlined by Appendices 'A', 'B', 'C', 'D' and 'E'.

Appendix 'A' - 2000 Co-ordinated Watermain Replacement

This section lists projects where the watermain replacement is being co-ordinated with local sewer and road works. The local municipality is the lead agency on the joint projects.

All locations are fully co-ordinated with other agencies and area municipalities. It is considered necessary to proceed with co-ordinated projects, as the area municipalities reconstruct the roadways and replace sewers. Experience has shown that when a road is reconstructed and the watermain and services are not replaced at the same time, the watermain and services are put at a higher risk of freezing and breakage. An added benefit is the cost-sharing of reinstatement and reduction to public disruption due to construction. It is unlikely that such an opportunity will occur again for another 50 years.

Appendix 'B' - 2000 Proactive Watermain Replacement

This section lists watermain replacement projects where the Region is the lead agency on the project.

It is considered necessary to proceed with the proactive projects now due to low flow capacity in the pipe and excessively high break rates causing high maintenance costs.

Appendix 'C' - 2000 Cleaning and Lining Rehabilitation

This section addresses the hydraulic performance issues of existing watermains. Fire protection especially becomes a problem in older areas where existing development has already intensified and the flow carrying capacity of the aging watermains have been deteriorating due to excessive tuberculation. This rehabilitation process involves a mechanical cleaning of the interior of the pipe and lining the pipe with an epoxy coating. With a cost of approximately 50% of the cost to fully replace a watermain, the cleaning and lining initiative effectively improves the hydraulic performance of the pipe while minimizing road damage and public inconvenience.

Appendix 'D' - 2000 Cathodic Protection Rehabilitation

The installation of cathodic protection anodes throughout the distribution system effectively extends the life cycle of the existing infrastructure and cost approximately 10% of the cost of full replacement. By extending the life cycle of the existing infrastructure, this allows the Region to direct its capital resources to the more critical areas in the system in need of replacement. Cathodic protection installation on existing watermains has progressively increased since 1994 and has proven to reduce the break rate on the existing watermains thus reducing maintenance costs. To date, these installations are handled by staff within the Water Division of the Environment and Transportation Department.

Appendix 'E' - 2000 Water System Improvements

This part of the programme involves minor water system improvements such as the installation of new valves, the replacement, relocation and refurbishment of existing hydrants, interconnection of watermains and abandonment of out-of-date system components.

For all the foregoing works, the setting of priorities involves an interactive process, with locations being revised as the priorities of other agencies are finalized.

Other Program Component Allocations

The 2001 Engineering Design allocation is required to prepare for project needs for the next year. This would involve the process of prioritizing the needs, evaluating project feasibility in terms of construction and cost, obtaining the required surveying and geotechnical information and initiating the design phase for the proposed works.

The System Analysis and Flow Monitoring allocation is required for staff and equipment needed to evaluate the hydraulic needs of the existing system.

The Pipe Sampling and Testing allocation is required to evaluate the structural needs of the existing system.

The Water Plant Easement Acquisition allocation is for the continuing process of updating and renewing the Region's easement agreements for the existing water plant as regulated by the Province.

A Program Contingency is included to specifically address project extensions and addition of projects to the programme.

2000 Urban Watermain Upgrades/Extension Programme - Capital Account 900200

This Programme was developed in 1998 to improve hydraulic performance of the system's water supply and fire protection capacity in areas where development intensification is identified. Both the Regional Development Strategy and the Regional Water System Master Plan emphasize optimal utilization of existing infrastructure to accommodate development intensification within the existing urban boundaries.

The programme components include the 2000 Planned Works listing (attached) and a Program Contingency to address project extensions and addition of projects to the program which may be required. Setting of priorities involves an interactive process, with locations being identified as development needs are prioritized.

CONSULTATION

These programmes fall under the Schedule 'A' category of the Class Environmental Assessment process as defined through the *Environmental Assessment Act*. Consultations with area municipalities continually take place in developing the programme. In co-ordinating these works with area municipalities, long-term impact on the public will be minimized, as it will not be necessary to return to these areas for many years. Local residents are notified of the proposed rehabilitation works during the design stage and prior to construction through a series of notices and public open houses where required.

EXPENDITURE IMPLICATIONS

An annual rehabilitation program to renew and upgrade the watermain distribution system will avoid larger annual expenditures in later years.

The 2000 Water Distribution System Rehabilitation Programme and 2000 Urban Watermain Upgrades/Extension Programme are fully co-ordinated with programmes and needs as outlined by the area municipalities, the National Capital Commission, Public Works and Government Services Canada. When it is practical, cost savings are realized in tendering joint contracts and in the sharing of reinstatement works.

All the 2000 scope of works can be accommodated within the 2000 Capital Budget allocations to both programs and unspent authority for previous years (See Appendices attached.).

Approved by
J. Miller, P.Eng.

FM/jw

Region of Ottawa - Carleton
2000 Water Distribution System Rehabilitation Program
Capital Project 900435

2000 AUTHORITY

2000 Expenditure Request	\$14,250,000
Available Authority (see Note 1)	
900196 1996 Water Distribution System Rehabilitation Program	\$300,000
900197 1997 - 1999 Water Distribution System Rehabilitation Program	\$1,000,000
	\$15,550,000

SUMMARY OF COMPONENTS

			<u>Total Length</u>	
Appendix A: 2000 Coordinated Watermain Replacement	0.35%	8,405	m	\$7,365,000
Appendix B: 2000 Proactive Watermain Replacement	0.15%	3,690	m	\$3,070,000
Appendix C: 2000 Cleaning and Lining Rehabilitation	0.27%	6,565	m	\$1,400,000
Appendix D: 2000 Cathodic Protection Installation	1.67%	40,415	m	\$1,500,000
Appendix E : 2000 Water System Improvements				\$750,000
Percent of Distribution System Rehabilitated in 2000 (see Note 4)	2.44%	or	59,075	m
2001 Engineering Design				\$500,000
System Analysis & Flow Monitoring				\$200,000
Pipe Sampling & Testing				\$65,000
Water Plant Easement Aquisition				\$200,000
Program Contingency (see Note 3)				\$500,000
				\$15,550,000

ESTIMATED BUDGET

NOTES

1. Available Authority results from deferred or cancelled projects and/or unused contingency allowances from previous program years.
2. Project estimates include engineering costs, construction costs, own forces and a 10% contingency allowance.
3. The Program Contingency will be used for the following purposes:
 - a) To address additional works which become apparent during a project design stage;
 - b) To address supplemental projects which are part of the 2000 program elements.
4. Total length of Distribution System as of January, 2000 = 2,422 km

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Appendix A: 2000 Coordinated Watermain Replacement

Coord. Mun.	Ward	Mun.Cont.	Project Manager	Street	From	To	Existing Pipe Description.				Prop. Size	Length (m)	Estimate Cost
							District Plan #	Exist Size	Pipe Material	Year Installed			
Ottawa	R14	I.Bhatia	W.Coombe	Rochester	Carling	Beech	366-028	127	UCI	1902/06	305	325	\$460,000
Ottawa	R14	I.Bhatia	W.Coombe	Norman	RR Tracks	Preston	366-028	127	UCI	1902	152	120	\$85,000
Ottawa	R14	I.Bhatia	W.Coombe	Norman	Preston	Rochester	366-028	127	UCI	1902	152	190	\$160,000
Ottawa	R13	W.Cloutier	W.Coombe	Ivy Cresc.	MacKay E.	MacKay W.	368-033	152	UCI	1909	152	790	\$580,000
Ottawa	R13	W.Cloutier	W.Coombe	Bertrand	Ivy Cresc.	Ivy Cresc.	368-033	152	UCI	1909	152	80	\$65,000
Ottawa	R13	W.Cloutier	W.Coombe	Putman	Ivy Cres.	Vaughan	368-033	152	UCI	1948	203	70	\$80,000
Ottawa	R17	W.Cloutier	F.Marcuccio	Hawthorne	Main	Dead End E.	368-030	152	UCI	1909	152	390	\$350,000
Ottawa	R15	D.Dougherty	W.Coombe	Cole	Avondale	Ravenhill	362-027	152	UCI	1931	152	550	\$395,000
Ottawa	R15	D.Dougherty	W.Coombe	Ravenhill	Cole	Golden	362-027	152	UCI	1932	152	75	\$75,000
Ottawa	R15	D.Dougherty	W.Coombe	Golden	Ravenhill	Byron	362-027	152	UCI	1932	152	80	\$80,000
Ottawa	R12	N.Finn	W.Coombe	Byward Market	York	George	366-032	203	UCI	1912	203	160	\$200,000
Ottawa	R12	N.Finn	W.Coombe	William	York	George	366-032	127	UCI	1874	203	160	\$200,000
Ottawa	R14	Z.Rana	S.Harish	Flora	Bronson	Bank	366-029	127	UCI	1904	203	930	\$700,000
Ottawa	R14	Z.Rana	S.Harish	Argyle	Bank	Metcalfe	368-030	127	UCI	1889	203	400	\$490,000
Ottawa	R14	Z.Rana	M.Ross	Gladstone	Bay	Bronson	366-029	305	UCI	1889	305	400	\$450,000
Ottawa	R14	I.Bhatia	M.Ross	Gladstone	Bronson	Cambridge	366-029	305	UCI	1889	305	110	\$130,000
Ottawa	R14	I.Bhatia	M.Ross	Gladstone	Cambridge	Bell	366-029	305	UCI	1889	305	115	\$135,000
Ottawa	R14	I.Bhatia	M.Ross	Gladstone	Bell	Lebreton	366-029	152	UCI	1935	305	100	\$120,000
Ottawa	R14	I.Bhatia	M.Ross	Bell	Gladstone	Willow	366-029	127	UCI	1887	203	100	\$100,000
Ottawa	R14	I.Bhatia	M.Ross	Willow	Bell	Preston	366-029	305	UCI	1889	203	515	\$385,000
Ottawa	R14	I.Bhatia	M.Ross	Eccles	Lebreton	Bell	366-029	127	UCI	1887	152	90	\$70,000
Ottawa	R14	I.Bhatia	M.Ross	Lebreton	Somerset	Raymond	366-029	127	UCI	1886	203	710	\$530,000
Ottawa	R14	J.Bradley	M.Ross	Florence	Bronson	Dead End 40m E.	366-029	127	UCI	1886	100	60	\$35,000
Ottawa	R15	J.Bradley	M.Ross	Robin Lane	Churchill	Dead End E.	362-026	152	UCI	1953	50	105	\$60,000
Ottawa	R13	R.Rehbein	M.Willmets	Putman	Springfield	Beechwood	368-033	152	UCI	1917	203	435	\$325,000
Ottawa	R13	R.Rehbein	M.Willmets	Chapleau	Putman	Beechwood	368-033	152	UCI	1917	152	100	\$90,000
Ottawa	R13	R.Rehbein	M.Willmets	Langevin	Putman	Beechwood	368-033	152	UCI	1911	152	180	\$130,000
Ottawa	R13	R.Rehbein	M.Willmets	Langevin	Putman	Dead End	368-033	152	UCI	1911	152	80	\$75,000
Ottawa	R15	R.Rehbein	M.Willmets	Carruthers	Burnside	Transitway	364-029	152	UCI	1912	152	340	\$245,000
Ottawa	R15	R.Rehbein	M.Willmets	Hinchey	Burnside	Transitway	364-029	152	UCI	1913	152	235	\$235,000
Ottawa	R15	R.Rehbein	M.Willmets	Lyndale	Hinchey	Carruthers	364-029		No Watermain		152	80	\$80,000
RMOC Trans	R9	Novatech	W.Coombe	Woodroffe	Knoxdale	Majestic	362 021	203	CI	1968	203	260	\$170,000
RMOC Trans	R13	NCC	W.Coombe	Sussex	Stanley	Rideau Gate	366-033	127/203	UCI	1887/1897	203	70	\$80,000

2000 Coordinated Watermain Replacement Totals :

8,405 \$7,365,000

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Appendix B: 2000 Proactive Watermain Replacement

<u>Mun.Contact</u>	<u>Ward</u>	<u>Design</u>	<u>Project Manager</u>	<u>Street</u>	<u>From</u>	<u>To</u>	<u>Existing Pipe Description.</u>				<u>Prop. Size</u>	<u>Length (m)</u>	<u>Estimate Cost</u>
							<u>District Plan #</u>	<u>Exist Size</u>	<u>Pipe Material</u>	<u>Year Installed</u>			
Ottawa	R16	Consultant	S.Harish	Melfa Cresent	Prince of Wales	Prince of Wales	366-025	152	UCI	1952	152	660	\$480,000
Ottawa	R16	Consultant	S.Harish	Minaki	Melfa	Melfa	366-025	152	UCI	1952	152	210	\$200,000
Ottawa	R16	Consultant	S.Harish	PrinceWales	Normandy	Melfa N	366-024	203/152	UCI/DI	1952/88	203	540	\$390,000
Gloucester	R2	Consultant	M. Ross	Belcourt	Benoit	Carriere	380-036	203	CI	1968	203	1250	\$820,000
Gloucester	R2	Consultant	M. Ross	Beechmont	Eastpark	Eastpark	378-033	152	DI	1971	203	680	\$600,000
Region	R17	Consultant	W. Coombe	Lees	Chestnut	Transitway	368-030	152	UCI	1908	305	350	\$580,000

2000 Proactive Watermain Replacement Totals :

3,690 \$3,070,000

Appendix C: 2000 Cleaning and Lining Rehabilitation

<u>Coord. Mun.</u>	<u>Ward</u>	<u>Mun.Cont.</u>	<u>Project Manager</u>	<u>Street</u>	<u>From</u>	<u>To</u>	<u>Existing Pipe Description.</u>				<u>Length (m)</u>	<u>Estimate Cost</u>
							<u>District Plan #</u>	<u>Exist Size</u>	<u>Pipe Material</u>	<u>Year Installed</u>		
Region	R18	Ottawa	M. Willmets	Sanderson	Smyth	Weston	372-028/29	203	UCI	1956	500	\$105,000
Region	R18	Ottawa	M. Willmets	Hamlet	Dauphin	Othello	372-028/29	152	UCI	1954	1015	\$220,000
Region	R18	Ottawa	M. Willmets	Hall	Hamlet	Olympia	372-028/29	152	UCI	1956	125	\$25,000
Region	R18	Ottawa	M. Willmets	Olympia	Sanderson	Chapman	372-028	152	UCI	1956	435	\$95,000
Region	R18	Ottawa	M. Willmets	Windgate	Ruth	Othello	372-028	152	UCI	1956	845	\$180,000
Region	R18	Ottawa	M. Willmets	Arch	Windgate	Chapman	372-028	152	UCI	1956	80	\$15,000
Region	R18	Ottawa	M. Willmets	Naples	Windgate	Chapman	372-028	152	UCI	1956	170	\$35,000
Region	R18	Ottawa	M. Willmets	Dauplin	Smyth	Chapman	372-028/29	203	UCI	1954	225	\$47,000
Region	R18	Ottawa	M. Willmets	Tweed	Hamlet	Dauplin	372-028	152	UCI	1954	220	\$45,000
Region	R18	Ottawa	M. Willmets	Haig	Hamlet	Dauplin	372-028	152	UCI	1954	320	\$68,000
Region	R18	Ottawa	M. Willmets	Colson	Haig	Sanderson	372-028	152	UCI	1956	400	\$85,000
Region	R18	Ottawa	M. Willmets	Quinlan	Haig	Windgate	372-028	152	UCI	1956	440	\$95,000
Region	R18	Ottawa	M. Willmets	Ruth	Quinlan	Chapman	372-028	152	UCI	1956	210	\$45,000
Region	R18	Ottawa	M. Willmets	Chapman	Othello	Dorval	372-028	203	UCI	1956	1280	\$275,000
Region	R18	Ottawa	M. Willmets	Portage	Dorval	Dauphin	372-028	152	UCI	1957	300	\$65,000

2000 Cleaning and Lining Rehabilitation Totals:

6,565 \$1,400,000

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Appendix D: 2000 Cathodic Protection Installation

NOTE: Locations listed are subject to change pending final agency circulation

Coord. Mun.	Ward	Mun.Cont.	Project Manager	Street	From	To	Existing Pipe Description.					Estimate \$300/anode	
							District Plan #	Exist Size	Pipe Material	Year Installed	Anodes Spacing		Length (m)
Region Overlay	R16	Mike Corbett	Dave Raymond	Meadowlands	Claymor	Prince of Wales	366-025	203	DI	1971	11	600	\$16,664
Region Overlay	R16	Mike Corbett	Dave Raymond	Hog's Back	Prince of Wales	Dead End	366-025	152	DI	1979	15	200	\$4,300
Region Overlay	R16	Mike Corbett	Dave Raymond	Prince of Wales	Fisher	Normandy Cres N.	366-024	152	DI	1988	15	900	\$18,300
Region Overlay	R16	Mike Corbett	Dave Raymond	Prince of Wales	Green Valley	Fairchild	366-026	203	DI	1971	11	300	\$8,482
Region Overlay	R13	Mike Corbett	Dave Raymond	Beechwood	Juliana	Oakhill	368-034	305	DI	1987	8	155	\$6,113
Region Overlay	R13	Mike Corbett	Dave Raymond	Beechwood	Chapleau	Springfield	368-033	203	DI	1987	11	340	\$9,573
Region Overlay	R1	Mike Corbett	Dave Raymond	St. Joseph Blvd	Trim	Tenth Line	382-038	406	DI	1981/82	6	1220	\$61,300
Region Overlay	R2	Mike Corbett	Dave Raymond	Lietrim	Bank	CFB Lietrim	374-021	203	DI	1981	11	1250	\$34,391
Region Overlay	R2	Mike Corbett	Dave Raymond	Innes	Blair	Old Innes / 250 W	376-031	406	DI	1990	6	1500	\$75,300
Region Overlay	R2/R11	Mike Corbett	Dave Raymond	Blair	Montreal	Mowat	374-034	203	DI	1989	11	490	\$13,664
Region Overlay	R2	Mike Corbett	Dave Raymond	Blair	Innes	Queensway	374-031	406	DI	1970	6	500	\$25,300
Ottawa Overlay	R18	M. Miner	D. Raymond	Blohm	Lorry Greenberg	Esson	372-025	406	DI	1986	6	1100	\$55,300
Ottawa Overlay	R18	M. Miner	D. Raymond	Blohm	Esson	Johnson	372-026	305	DI	1986	8	300	\$11,550
Ottawa Overlay	R18	M. Miner	D. Raymond	Cahill	Albion	Transit Corridor	370-024	610	DI	1986	4	400	\$30,300
Ottawa Overlay	R18	M. Miner	D. Raymond	Cahill	Transit Corridor	Hunt Club	372-024	203	DI	1986	11	550	\$15,300
Ottawa Overlay	R18	M. Miner	D. Raymond	Don Reid	Walkely	Dead end	372-026	305	DI	1986	8	850	\$32,175
Ottawa Overlay	R16	M. Miner	D. Raymond	Lampman	Maryland	Hydrant H054	366-025	203	DI	1973	11	250	\$7,118
Ottawa Overlay	R16	M. Miner	D. Raymond	Lampman	Hydrant H054	Dead end	366-025	152	DI	1973	15	100	\$2,300
Ottawa Overlay	R18	M. Miner	D. Raymond	Malak	Blohm	Hunt Club	374-025	305	DI	1986	8	220	\$8,550
Ottawa Overlay	R16	M. Miner	D. Raymond	Maryland	Prince of Wales	Lampman	366-025	203	DI	1973	11	150	\$4,391
Ottawa Overlay	R16	M. Miner	D. Raymond	Maryland	Prince of Wales	Dead end	366-025	152	DI	1973	15	100	\$2,300
Ottawa Overlay	R13	M. Miner	D. Raymond	St. Laurent	Jeffrey	Mart	370-034	203	DI	1981	11	200	\$5,755
Ottawa Overlay	R13	M. Miner	D. Raymond	St. Laurent	Mart	Henlock	370-034	305	DI	1981	8	300	\$11,550
Ottawa Overlay	R18	M. Miner	D. Raymond	Thomas Spratt	Thurston	Dead end	372-026	305	DI	1986	8	100	\$4,050
Ottawa Overlay	R18	M. Miner	D. Raymond	Thurston	St Laurent	Conroy	372-026	305	DI	1986	8	1100	\$41,550
Ottawa	R14	Z.Rana	S.Harish	Argyle	Metcalf	Elgin	368-030	203	DI	1978	11	190	\$5,482
Ottawa	R13	D.Dougherty	D. Raymond	St. Laurent	Donald	Ease't N. of Donald	372-032	406	DI	1983	6	250	\$12,800
Nepean Overlay	R9	W. Newell	D. Raymond	Four Seasons	Viewmount	Chesterton	366-023	203	DI	1984	11	950	\$26,209
Nepean Overlay	R3	W. Newell	D. Raymond	Fitzgerald	Moodie	Robertson	356-020	305	DI	1986	8	650	\$24,675
Nepean Overlay	R9	W. Newell	D. Raymond	Medhurst	Woodfield E.	Woodroffe	364-021	203	DI	1982	11	1200	\$33,027
Nepean Overlay	R9	W. Newell	D. Raymond	Woodfield	Benlea	Medhurst N.	364-021	305	DI	1978	8	1000	\$37,800
Nepean	R7	W. Newell	D. Raymond	Burnbrook	Corkstown	Corkstown	356-023	152	DI	1982	15	220	\$4,700
Kanata	R5	Proactive	D. Raymond	Easement	Eagleson	305mm Watermain	354-016	406	DI	1976	6	380	\$19,300
Kanata	R5	Proactive	D. Raymond	Easement	305mm Watermain	Mike Cowpland	354-016	305	DI	1976	8	700	\$26,550

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Appendix D: 2000 Cathodic Protection Installation (con't)

Coord. Mun.	Ward	Mun.Cont.	Project Manager	Street	From	To	Existing Pipe Description.					Anodes Spacing	Length (m)	Estimate \$300/anode
							District Plan #	Exist Size	Pipe Material	Year Installed	Year Installed			
Glou. Overlay	R11	J. MacDonald	D. Raymond	Palmerston	Ogilvie	Halmont	374-034	203	DI	1977	11	500	\$13,936	
Glou. Overlay	R11	J. MacDonald	D. Raymond	Gatineauview	La Verendrye	La Verendrye	374-034	152	DI	1975	15	390	\$8,100	
Glou. Overlay	R2	J. MacDonald	D. Raymond	Bilberry	Jeanne d'arc	North End	380-038	203	DI	1978	11	550	\$15,300	
Glou. Overlay	R2	J. MacDonald	D. Raymond	Vorlage	Jeanne d'arc	Jeanne d'arc	378-036	203	DI	1976	11	800	\$22,118	
Glou. Overlay	R1	J. MacDonald	D. Raymond	Lumberman Way	Orleans	Grey Nuns	380-036	203	DI	1975	11	420	\$11,755	
Glou. Overlay	R2	J. MacDonald	D. Raymond	Beausejour	Orleans	Belcourt	380-035	203	DI	1985	11	1100	\$30,300	
Glou. Overlay	R11	J. MacDonald	D. Raymond	Amberly	Dead end	Davidson	374-034	152	DI	1972	15	400	\$8,300	
Glou. Overlay	R11	J. MacDonald	D. Raymond	Massey	Blair	Massey Court	372-035	152	DI	1979	15	320	\$6,700	
Glou. Overlay	R11	J. MacDonald	D. Raymond	Massey	Massey Court	Rebecca	372-035	203	DI	1979	11	200	\$5,755	
Glou. Overlay	R11	J. MacDonald	D. Raymond	Massey	Rebecca	Delong	372-035	203	DI	1979	11	180	\$5,209	
Glou. Overlay	R12	J. MacDonald	D. Raymond	Shefford	Cassey	North End	374-035	152	DI	1973	15	270	\$5,700	
Glou. Overlay	R12	J. MacDonald	D. Raymond	Shefford	Arena	Montreal	374-035	305	DI	1973	8	800	\$30,300	
Gloucester	R2	K. Martin	D. Raymond	Arthur	Belcourt	Notre Dame	380-036	152	DI/CI	1991/66	15	400	\$8,300	
Gloucester	R2	K. Martin	D. Raymond	Belcourt	Benoit	Innes	380-036	305	DI	1978	8	1100	\$44,687	
Gloucester	R2	Proactive	D. Raymond	Turner	Prestone	Prestone	382-038	203	DI	1984	11	650	\$18,027	
Gloucester	R2	Proactive	D. Raymond	Turner	Prestone	Prestone	382-038	152	DI	1984	15	300	\$6,300	
Gloucester	R10	Proactive	D. Raymond	Conroy	Park Lane	Bank	374-022	406	DI	1981	6	1000	\$50,300	
Gloucester	R10	Proactive	D. Raymond	Leitrim	Bank	Fenton	374-020	406	DI	1984	6	1800	\$90,300	
Gloucester	R10	Proactive	D. Raymond	Fenton	Albion	Leitrim	372-019	406	DI	1984	6	900	\$45,300	
Gloucester	R10	Proactive	D. Raymond	Quinn	Albion	Dead End	372-019	203	DI	1984	11	600	\$16,664	
Gloucester	R10	Proactive	D. Raymond	Albion	Leitrim	Del Zotto	372-019	406	DI	1984	6	750	\$37,800	
Gloucester	R10	Proactive	D. Raymond	Leitrim	CP Rail	Albion	372-019	406	DI	1984	6	900	\$45,300	
Gloucester	R10	Proactive	D. Raymond	Del Zotto	Albion	Dead End	372-019	305	DI	1984	8	800	\$30,300	
Gloucester	R1	Proactive	D. Raymond	St Louis	Orleans	Hiawatha	378-038	305	DI	1977	8	500	\$19,050	
Gloucester	R1	Proactive	D. Raymond	Explorer	Voyageur	Voyageur	378-037	152	DI	1978	15	700	\$14,300	
Gloucester	R1	Proactive	D. Raymond	Chaleur	Voyageur	Voyageur	378-037	152	DI	1978	15	700	\$14,300	
Gloucester	R1	Proactive	D. Raymond	Driftwood	Voyageur	Voyageur	378-037	152	DI	1978	15	400	\$8,300	
Gloucester	R1	Proactive	D. Raymond	Acadian	Acadian	Acadian	378-037	152	DI	1978	15	400	\$8,300	
Gloucester	R1	Proactive	D. Raymond	Acadian	Voyageur	Acadian	378-037	203	DI	1978	11	100	\$3,027	
Gloucester	R1	Proactive	D. Raymond	Raftsmen	Voyageur	Voyageur	378-037	152	DI	1978	15	700	\$14,300	
Gloucester	R1	Proactive	D. Raymond	Arrowfield	Voyageur	Voyageur	378-037	152	DI	1978	15	400	\$8,300	
Gloucester	R1	Proactive	D. Raymond	Chablis Park	Vineyard	Vineyard	378-037	152	DI	1976	15	550	\$11,300	
Gloucester	R1	Proactive	D. Raymond	Medoc	Vineyard	Dead End	378-037	152	DI	1980	15	230	\$4,900	
Gloucester	R1	Proactive	D. Raymond	Bordeau	Vineyard	Grove	378-036	152	DI	1978	15	550	\$11,300	
Gloucester	R1	Proactive	D. Raymond	Grove	Vineyard	Bordeau	378-036	203	DI	1978	11	200	\$5,755	
Gloucester	R1	Proactive	D. Raymond	Burgundy	Vineyard	Vineyard	378-036	152	DI	1978	15	400	\$8,300	
Gloucester	R1	Proactive	D. Raymond	Sauterne	Vineyard	Vineyard	378-036	152	DI	1978	15	360	\$7,500	
Gloucester	R1	Proactive	D. Raymond	Medoc	Vineyard	Dead End	378-036	152	DI	1978	15	230	\$4,900	
Gloucester	R1	Proactive	D. Raymond	Bateau	Voyageur	Voyageur	378-036	152	DI	1978	15	150	\$3,300	

Anode Installation coord. w. peripheral ETD work

\$100,000

2000 Cathodic Protection Installation Total :

40,415 \$1,500,000

Region of Ottawa - Carleton
2000 Water Distribution System Rehabilitation Program
Capital Project 900435

Appendix E: Water System Improvements

NOTE: Locations to be identified by the Water Distribution Branch priorities

<u>Coord. Mur Ward</u>	<u>Mun.Cont. Project</u>	<u>Street</u>	<u>From</u>	<u>To</u>	<u>Project Description</u>	<u>Estimate</u>
	G.Choquette	Various			Two-way Lawson Hydrant Replacements @ various location:	\$650,000
	G.Choquette	Various			Service Lateral Replacement - Sidewalk to Property line	\$100,000
	G.Choquette	Various			Watermain Replacement	
	G.Choquette	Various			New Hydrant for Fire Protection	
	G.Choquette	Various			Valve Replacement	

Water System Improvements Total : \$750,000

2001 Engineering Design

NOTE: Engineering to proceed in 2000; Construction to be identified 2001

<u>Coord. Mun.</u>	<u>Ward No.</u>	<u>Mun.Cont.</u>	<u>Project Manager</u>	<u>Street</u>	<u>From</u>	<u>To</u>	<u>Estimate Cost</u>
Rockcliffe	R13	Village Engineer	M.Willmets	Crescent	Acacia	Buena Vista	\$20,000
Rockcliffe	R13	Village Engineer	M.Willmets	Buena Vista	Acacia	100m N of Fairview	\$20,000
Rockcliffe	R13	Village Engineer	M.Willmets	Hillsdale	Lansdowne	Cloverdale	\$20,000
Rockcliffe	R13	Village Engineer	M.Willmets	Cloverdale	Hillsdale	Buena Vista	\$20,000
Ottawa, Gloucester, Nepean, Vanier, etc.....(to be determined based on ongoing coordination)							\$320,000
							<u><u>\$500,000</u></u>

Region of Ottawa-Carleton
Urban Watermain Upgrades/Extensions Program
Capital Project 900200

2000 AUTHORITY

2000 Expenditure Request	\$5,000,000
Available Authority (see Note 1)	
900200 Urban Watermain Upgrades/Extension Program	\$600,000
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	\$5,600,000
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SUMMARY OF COMPONENTS

2000 Planned Works	\$5,100,000
Program Contingency (see Note 3)	\$500,000
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ESTIMATED BUDGET	\$5,600,000
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NOTES

1. Available Authority results from deferred or cancelled projects and/or unused contingency allowances from previous program years.
2. Project estimates include engineering costs, construction costs, own forces and a 10% contingency allowance.
3. The Program Contingency will be used for the following purposes:
 - a) To address additional works which become apparent during a project design stage;
 - b) To address supplemental projects which are part of the 2000 program elements.

Region of Ottawa-Carleton
Urban Watermain Upgrades/Extensions Program
Capital Project 900200

<u>Contact</u>	<u>War</u>	<u>Project</u>	<u>Street</u>	<u>From</u>	<u>To</u>	<u>District</u>	<u>Dia.</u>	<u>Length</u>	<u>Budget Allocations</u>
		<u>Manager</u>				<u>Plan</u>			
Glo/ Infrast	R1/R2	S.Harish	St. Joseph	Jeanne D'Arc	100mEofBoyer	380-036	406	750	\$900,000
Nepean	R3	F.Marcuccio	Strandherd Road	Woodroffe	Greenbank	364-015	406	1380	\$650,000
Kanata	R4	B.Alting Mee	Terry Fox Drive	Winchester	Micheal Cowpland	352-016	406	1400	\$610,000
Kanata	R4	B.Alting Mee	Micheal Cowpland	Terry Fox Drive	Existing Stub	352-016	406	450	\$210,000
Region	R14	F.Marcuccio	Kent Street	Catherine	Florence	366-030	305	400	\$600,000
Ottawa	R14	F.Marcuccio	Sparks Street	Lyon	Kent	366-031	203	190	\$150,000
Region			Rideau Canal Crossings						
Region	R14/12	M.Willmets	ederation Park (Abandon)	Queen Elizabeth	Nicholas	368-031	381	100	\$100,000
Region	R14/12	M.Willmets	Laurier Avenue	Queen Elizabeth	Nicholas	368-031	762	200	\$650,000
Region	R14/12	M.Willmets	Somerset Street	Queen Elizabeth	Nicholas	368-031	406	200	\$550,000
Region	R12	F. Marcuccio	Mackenzie	250m S. of Murray	Rideau	366-031	305	175	\$180,000
Region	R12	F. Marcuccio	Rideau Street	Mackenzie	Sussex	366-031	406	60	\$100,000
	R11	S. Dover	Yule Street	Mart	London	370-034	203	150	\$100,000
	R18	G.Gill	Avalon	Station	Renova	370-029	203	70	\$50,000
Region	R13	F.Marcuccio	Montreal Road	St Laurent	Burma	372-034	406	1800	\$150,000
Region	R13	F.Marcuccio	Burma	Montreal	Montreal Road PS	372-034	305	80	\$100,000

Total Budget Requirement

\$5,100,000