TABLE 6.3 - 37 (cont)
PRESENT VALUE ANALYSIS
SCENARIO 2 - 20 YEAR CAPITAL COST EXPENDITURE

Alternative 5
Summary

		F1	F2	F3	F4	F5	F6	F7	F8
Present Value O & M	$/lf	0.00	25.73	25.73	0.00	0.00	0.00	0.00	0.00
Reach Length	lf	3500	11600	4400	3600	3700	4950	6550	1600
Present Value O & M	$	0	298,465	113,211	0	0	0	0	0
Present Value Capital/Reach	$	0	9,661,321	8,395,508	0	0	0	0	0
Present Value Alternative	$	0	9,959,786	8,508,719	0	0	0	0	0

DISCOUNT RATE:	3 %	ASSUMED
PERIOD	50 YEARS	

Operation And Maintenance (O & M) Cost, $/LF (1993 DOLLARS)

YEAR	F1	F2	F3	F4	F5	F6	F7	F8
1993	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00
1994	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00
1995	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00
1996	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00
1997	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00
1998	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00
1999	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00
2000	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00
2001	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00
2002	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00
2003	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00
2004	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00
2005	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00
2006	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00
2007	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00
2008	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00
2009	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00
2010	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00
2011	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00
2012	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00
2013	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00
2014	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00
2015	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00
2016	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00
2017	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00
2018	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00
2019	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00
2020	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00
2021	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00
2022	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00
2023	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00
2024	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00
2025	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00
2026	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00
2027	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00
2028	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00
2029	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00
2030	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00
2031	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00
2032	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00
2033	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00
2034	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00
2035	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00
2036	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00
2037	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00
2038	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00
2039	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00
2040	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00
2041	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00
2042	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00

TABLE 6.3 - 37 (cont)
PRESENT VALUE ANALYSIS
SCENARIO 2 - 20 YEAR CAPITAL COST EXPENDITURE

Alternative 5

DISCOUNT RATE:	3 %	
PERIOD	20 YEARS	

		F1	F2	F3	F4	F5	F6	F7	F8
CAPITAL COST	($MM/REACH)	0	12.98785	11.2862	0	0	0	0	0
PROJECT YEARS		20	20	20	20	20	20	20	20
COST PER YEAR	($MM/REACH)	0	0.6493925	0.56431	0	0	0	0	0

Analysis

Operation And Maintenance (O & M) Cost, $/LF (1993 DOLLARS)

YEAR	F1	F2	F3	F4	F5	F6	F7	F8
1993	0.000	0.649	0.564	0.000	0.000	0.000	0.000	0.000
1994	0.000	0.649	0.564	0.000	0.000	0.000	0.000	0.000
1995	0.000	0.649	0.564	0.000	0.000	0.000	0.000	0.000
1996	0.000	0.649	0.564	0.000	0.000	0.000	0.000	0.000
1997	0.000	0.649	0.564	0.000	0.000	0.000	0.000	0.000
1998	0.000	0.649	0.564	0.000	0.000	0.000	0.000	0.000
1999	0.000	0.649	0.564	0.000	0.000	0.000	0.000	0.000
2000	0.000	0.649	0.564	0.000	0.000	0.000	0.000	0.000
2001	0.000	0.649	0.564	0.000	0.000	0.000	0.000	0.000
2002	0.000	0.649	0.564	0.000	0.000	0.000	0.000	0.000
2003	0.000	0.649	0.564	0.000	0.000	0.000	0.000	0.000
2004	0.000	0.649	0.564	0.000	0.000	0.000	0.000	0.000
2005	0.000	0.649	0.564	0.000	0.000	0.000	0.000	0.000
2006	0.000	0.649	0.564	0.000	0.000	0.000	0.000	0.000
2007	0.000	0.649	0.564	0.000	0.000	0.000	0.000	0.000
2008	0.000	0.649	0.564	0.000	0.000	0.000	0.000	0.000
2009	0.000	0.649	0.564	0.000	0.000	0.000	0.000	0.000
2010	0.000	0.649	0.564	0.000	0.000	0.000	0.000	0.000
2011	0.000	0.649	0.564	0.000	0.000	0.000	0.000	0.000
2012	0.000	0.649	0.564	0.000	0.000	0.000	0.000	0.000

TABLE 6.3-38
PRESENT VALUE ANALYSIS
SCENARIO 3 - 20-YEAR CAPITAL COST EXPENDITURES BEGINNING IN 1998

TABLE 6.3 - 38
PRESENT VALUE ANALYSIS
SCENARIO 3 - 20 YEAR CAPITAL COST EXPENDITURES BEGINNING IN 1998

Alternative 1
Summary

		F1	F2	F3	F4	F5	F6	F7	F8
Present Value O & M	$/lf	617.51	514.60	385.95	334.49	1,003.46	823.35	591.78	617.51
Reach Length	lf	3500	11600	4400	3600	3700	4950	6550	1600
Present Value O & M	$	2,161,300	5,969,305	1,698,164	1,204,153	3,712,805	4,075,595	3,876,189	988,023
Present Value Capital/Reach	$	0	0	0	0	0	0	0	0
Present Value Alternative	$	2,161,300	5,969,305	1,698,164	1,204,153	3,712,805	4,075,595	3,876,189	988,023

DISCOUNT RATE:	3 %	ASSUMED
PERIOD	50 YEARS	

Operation And Maintenance (O & M) Cost, $/LF (1993 DOLLARS)

YEAR	F1	F2	F3	F4	F5	F6	F7	F8
1993	24.00	20.00	15.00	13.00	39.00	32.00	23.00	24.00
1994	24.00	20.00	15.00	13.00	39.00	32.00	23.00	24.00
1995	24.00	20.00	15.00	13.00	39.00	32.00	23.00	24.00
1996	24.00	20.00	15.00	13.00	39.00	32.00	23.00	24.00
1997	24.00	20.00	15.00	13.00	39.00	32.00	23.00	24.00
1998	24.00	20.00	15.00	13.00	39.00	32.00	23.00	24.00
1999	24.00	20.00	15.00	13.00	39.00	32.00	23.00	24.00
2000	24.00	20.00	15.00	13.00	39.00	32.00	23.00	24.00
2001	24.00	20.00	15.00	13.00	39.00	32.00	23.00	24.00
2002	24.00	20.00	15.00	13.00	39.00	32.00	23.00	24.00
2003	24.00	20.00	15.00	13.00	39.00	32.00	23.00	24.00
2004	24.00	20.00	15.00	13.00	39.00	32.00	23.00	24.00
2005	24.00	20.00	15.00	13.00	39.00	32.00	23.00	24.00
2006	24.00	20.00	15.00	13.00	39.00	32.00	23.00	24.00
2007	24.00	20.00	15.00	13.00	39.00	32.00	23.00	24.00
2008	24.00	20.00	15.00	13.00	39.00	32.00	23.00	24.00
2009	24.00	20.00	15.00	13.00	39.00	32.00	23.00	24.00
2010	24.00	20.00	15.00	13.00	39.00	32.00	23.00	24.00
2011	24.00	20.00	15.00	13.00	39.00	32.00	23.00	24.00
2012	24.00	20.00	15.00	13.00	39.00	32.00	23.00	24.00
2013	24.00	20.00	15.00	13.00	39.00	32.00	23.00	24.00
2014	24.00	20.00	15.00	13.00	39.00	32.00	23.00	24.00
2015	24.00	20.00	15.00	13.00	39.00	32.00	23.00	24.00
2016	24.00	20.00	15.00	13.00	39.00	32.00	23.00	24.00
2017	24.00	20.00	15.00	13.00	39.00	32.00	23.00	24.00
2018	24.00	20.00	15.00	13.00	39.00	32.00	23.00	24.00
2019	24.00	20.00	15.00	13.00	39.00	32.00	23.00	24.00
2020	24.00	20.00	15.00	13.00	39.00	32.00	23.00	24.00
2021	24.00	20.00	15.00	13.00	39.00	32.00	23.00	24.00
2022	24.00	20.00	15.00	13.00	39.00	32.00	23.00	24.00
2023	24.00	20.00	15.00	13.00	39.00	32.00	23.00	24.00
2024	24.00	20.00	15.00	13.00	39.00	32.00	23.00	24.00
2025	24.00	20.00	15.00	13.00	39.00	32.00	23.00	24.00
2026	24.00	20.00	15.00	13.00	39.00	32.00	23.00	24.00
2027	24.00	20.00	15.00	13.00	39.00	32.00	23.00	24.00
2028	24.00	20.00	15.00	13.00	39.00	32.00	23.00	24.00
2029	24.00	20.00	15.00	13.00	39.00	32.00	23.00	24.00
2030	24.00	20.00	15.00	13.00	39.00	32.00	23.00	24.00
2031	24.00	20.00	15.00	13.00	39.00	32.00	23.00	24.00
2032	24.00	20.00	15.00	13.00	39.00	32.00	23.00	24.00
2033	24.00	20.00	15.00	13.00	39.00	32.00	23.00	24.00
2034	24.00	20.00	15.00	13.00	39.00	32.00	23.00	24.00
2035	24.00	20.00	15.00	13.00	39.00	32.00	23.00	24.00
2036	24.00	20.00	15.00	13.00	39.00	32.00	23.00	24.00
2037	24.00	20.00	15.00	13.00	39.00	32.00	23.00	24.00
2038	24.00	20.00	15.00	13.00	39.00	32.00	23.00	24.00
2039	24.00	20.00	15.00	13.00	39.00	32.00	23.00	24.00
2040	24.00	20.00	15.00	13.00	39.00	32.00	23.00	24.00
2041	24.00	20.00	15.00	13.00	39.00	32.00	23.00	24.00
2042	24.00	20.00	15.00	13.00	39.00	32.00	23.00	24.00

TABLE 6.3 - 38 (cont)
PRESENT VALUE ANALYSIS
SCENARIO 3 - 20 YEAR CAPITAL COST EXPENDITURES BEGINNING IN 1998

Alternative 1

DISCOUNT RATE:	3 %	
PERIOD	20 YEARS	

		F1	F2	F3	F4	F5	F6	F7	F8
CAPITAL COST	($MM/REACH)	0	0	0	0	0	0	0	0
PROJECT YEARS		20	20	20	20	20	20	20	20
COST PER YEAR	($MM/REACH)	0	0	0	0	0	0	0	0

Analysis

Capital Cost, (1993 DOLLARS)

YEAR	F1	F2	F3	F4	F5	F6	F7	F8
1993	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
1994	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
1995	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
1996	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
1997	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
1998	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
1999	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2002	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2003	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2004	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2005	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2006	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2007	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2009	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2010	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2011	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2012	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2013	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2014	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2015	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2016	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2017	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2018	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2019	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2020	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2021	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2022	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2023	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2024	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2025	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2026	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2027	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2028	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2029	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2030	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2031	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2032	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2033	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2034	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2035	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2036	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2037	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2038	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2039	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2040	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2041	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2042	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2043	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

TABLE 6.3 - 38 (cont)
PRESENT VALUE ANALYSIS
SCENARIO 3 - 20 YEAR CAPITAL COST EXPENDITURES BEGINNING IN 1998

Alternative 2
Summary

		F1	F2	F3	F4	F5	F6	F7	F8
Present Value O & M	$/lf	195.40	177.08	154.18	145.02	264.09	232.04	190.82	195.40
Reach Length	lf	3500	11600	4400	3600	3700	4950	6550	1600
Present Value O & M	$	683,897	2,054,131	678,399	522,080	977,150	1,148,582	1,249,867	312,638
Present Value Capital/Reach	$	2,207,031	408,103	21,175	1,506,646	985,287	2,375,727	1,097,452	1,037,391
Present Value Alternative	$	2,890,928	2,462,234	699,575	2,028,726	1,962,438	3,524,308	2,347,318	1,350,030

DISCOUNT RATE:	3 %	ASSUMED
PERIOD	50 YEARS	

Operation And Maintenance (O & M) Cost, $/LF (1993 DOLLARS)

YEAR	F1	F2	F3	F4	F5	F6	F7	F8
1993	24.00	20.00	15.00	13.00	39.00	32.00	23.00	24.00
1994	24.00	20.00	15.00	13.00	39.00	32.00	23.00	24.00
1995	24.00	20.00	15.00	13.00	39.00	32.00	23.00	24.00
1996	24.00	20.00	15.00	13.00	39.00	32.00	23.00	24.00
1997	24.00	20.00	15.00	13.00	39.00	32.00	23.00	24.00
1998	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
1999	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
2000	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
2001	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
2002	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
2003	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
2004	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
2005	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
2006	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
2007	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
2008	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
2009	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
2010	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
2011	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
2012	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
2013	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
2014	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
2015	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
2016	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
2017	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
2018	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
2019	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
2020	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
2021	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
2022	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
2023	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
2024	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
2025	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
2026	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
2027	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
2028	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
2029	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
2030	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
2031	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
2032	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
2033	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
2034	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
2035	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
2036	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
2037	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
2038	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
2039	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
2040	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
2041	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
2042	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
2043	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00

TABLE 6.3 - 38 (cont)
PRESENT VALUE ANALYSIS
SCENARIO 3 - 20 YEAR CAPITAL COST EXPENDITURES BEGINNING IN 1998

Alternative 2

DISCOUNT RATE:	3 %	
PERIOD	20 YEARS	

		F1	F2	F3	F4	F5	F6	F7	F8
CAPITAL COST	($MM/REACH)	3.4395	0.636	0.033	2.348	1.5355	3.7024	1.7103	1.6167
PROJECT YEARS		20	20	20	20	20	20	20	20
COST PER YEAR	($MM/REACH)	0.171975	0.0318	0.00165	0.1174	0.076775	0.18512	0.085515	0.080835

Analysis

Capital Cost, (1993 DOLLARS)

YEAR	F1	F2	F3	F4	F5	F6	F7	F8
1993	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
1994	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
1995	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
1996	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
1997	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
1998	0.172	0.032	0.002	0.117	0.077	0.185	0.086	0.081
1999	0.172	0.032	0.002	0.117	0.077	0.185	0.086	0.081
2000	0.172	0.032	0.002	0.117	0.077	0.185	0.086	0.081
2001	0.172	0.032	0.002	0.117	0.077	0.185	0.086	0.081
2002	0.172	0.032	0.002	0.117	0.077	0.185	0.086	0.081
2003	0.172	0.032	0.002	0.117	0.077	0.185	0.086	0.081
2004	0.172	0.032	0.002	0.117	0.077	0.185	0.086	0.081
2005	0.172	0.032	0.002	0.117	0.077	0.185	0.086	0.081
2006	0.172	0.032	0.002	0.117	0.077	0.185	0.086	0.081
2007	0.172	0.032	0.002	0.117	0.077	0.185	0.086	0.081
2008	0.172	0.032	0.002	0.117	0.077	0.185	0.086	0.081
2009	0.172	0.032	0.002	0.117	0.077	0.185	0.086	0.081
2010	0.172	0.032	0.002	0.117	0.077	0.185	0.086	0.081
2011	0.172	0.032	0.002	0.117	0.077	0.185	0.086	0.081
2012	0.172	0.032	0.002	0.117	0.077	0.185	0.086	0.081
2013	0.172	0.032	0.002	0.117	0.077	0.185	0.086	0.081
2014	0.172	0.032	0.002	0.117	0.077	0.185	0.086	0.081
2015	0.172	0.032	0.002	0.117	0.077	0.185	0.086	0.081
2016	0.172	0.032	0.002	0.117	0.077	0.185	0.086	0.081
2017	0.172	0.032	0.002	0.117	0.077	0.185	0.086	0.081
2018	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2019	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2020	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2021	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2022	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2023	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2024	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2025	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2026	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2027	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2028	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2029	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2030	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2031	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2032	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2033	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2034	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2035	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2036	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2037	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2038	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2039	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2040	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2041	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2042	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2043	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

TABLE 6.3 - 38 (cont)
PRESENT VALUE ANALYSIS
SCENARIO 3 - 20 YEAR CAPITAL COST EXPENDITURES BEGINNING IN 1998

Alternative 3
Summary

		F1	F2	F3	F4	F5	F6	F7	F8
Present Value O & M	$/lf	131.06	176.19	153.30	80.69	263.21	231.15	189.93	0.00
Reach Length	lf	3500	11600	4400	3600	3700	4950	6550	1600
Present Value O & M	$	458,721	2,043,855	674,502	290,471	973,873	1,144,197	1,244,064	0
Present Value Capital/Reach	$	575,259	5,799,336	1,527,308	1,000,367	4,167,403	4,376,203	4,037,850	0
Present Value Alternative	$	1,033,980	7,843,190	2,201,809	1,290,837	5,141,276	5,520,400	5,281,914	0

DISCOUNT RATE: 3 % ASSUMED
PERIOD 50 YEARS

Operation And Maintenance (O & M) Cost, $/LF (1993 DOLLARS)

YEAR	F1	F2	F3	F4	F5	F6	F7	F8
1993	24.00	20.00	15.00	13.00	39.00	32.00	23.00	0.00
1994	24.00	20.00	15.00	13.00	39.00	32.00	23.00	0.00
1995	24.00	20.00	15.00	13.00	39.00	32.00	23.00	0.00
1996	24.00	20.00	15.00	13.00	39.00	32.00	23.00	0.00
1997	24.00	20.00	15.00	13.00	39.00	32.00	23.00	0.00
1998	1.00	4.00	4.00	1.00	4.00	4.00	4.00	0.00
1999	1.00	4.00	4.00	1.00	4.00	4.00	4.00	0.00
2000	1.00	4.00	4.00	1.00	4.00	4.00	4.00	0.00
2001	1.00	4.00	4.00	1.00	4.00	4.00	4.00	0.00
2002	1.00	4.00	4.00	1.00	4.00	4.00	4.00	0.00
2003	1.00	4.00	4.00	1.00	4.00	4.00	4.00	0.00
2004	1.00	4.00	4.00	1.00	4.00	4.00	4.00	0.00
2005	1.00	4.00	4.00	1.00	4.00	4.00	4.00	0.00
2006	1.00	4.00	4.00	1.00	4.00	4.00	4.00	0.00
2007	1.00	4.00	4.00	1.00	4.00	4.00	4.00	0.00
2008	1.00	4.00	4.00	1.00	4.00	4.00	4.00	0.00
2009	1.00	4.00	4.00	1.00	4.00	4.00	4.00	0.00
2010	1.00	4.00	4.00	1.00	4.00	4.00	4.00	0.00
2011	1.00	4.00	4.00	1.00	4.00	4.00	4.00	0.00
2012	1.00	4.00	4.00	1.00	4.00	4.00	4.00	0.00
2013	1.00	4.00	4.00	1.00	4.00	4.00	4.00	0.00
2014	1.00	4.00	4.00	1.00	4.00	4.00	4.00	0.00
2015	1.00	4.00	4.00	1.00	4.00	4.00	4.00	0.00
2016	1.00	4.00	4.00	1.00	4.00	4.00	4.00	0.00
2017	1.00	4.00	4.00	1.00	4.00	4.00	4.00	0.00
2018	1.00	4.00	4.00	1.00	4.00	4.00	4.00	0.00
2019	1.00	4.00	4.00	1.00	4.00	4.00	4.00	0.00
2020	1.00	4.00	4.00	1.00	4.00	4.00	4.00	0.00
2021	1.00	4.00	4.00	1.00	4.00	4.00	4.00	0.00
2022	1.00	4.00	4.00	1.00	4.00	4.00	4.00	0.00
2023	1.00	4.00	4.00	1.00	4.00	4.00	4.00	0.00
2024	1.00	4.00	4.00	1.00	4.00	4.00	4.00	0.00
2025	1.00	4.00	4.00	1.00	4.00	4.00	4.00	0.00
2026	1.00	4.00	4.00	1.00	4.00	4.00	4.00	0.00
2027	1.00	4.00	4.00	1.00	4.00	4.00	4.00	0.00
2028	1.00	4.00	4.00	1.00	4.00	4.00	4.00	0.00
2029	1.00	4.00	4.00	1.00	4.00	4.00	4.00	0.00
2030	1.00	4.00	4.00	1.00	4.00	4.00	4.00	0.00
2031	1.00	4.00	4.00	1.00	4.00	4.00	4.00	0.00
2032	1.00	4.00	4.00	1.00	4.00	4.00	4.00	0.00
2033	1.00	4.00	4.00	1.00	4.00	4.00	4.00	0.00
2034	1.00	4.00	4.00	1.00	4.00	4.00	4.00	0.00
2035	1.00	4.00	4.00	1.00	4.00	4.00	4.00	0.00
2036	1.00	4.00	4.00	1.00	4.00	4.00	4.00	0.00
2037	1.00	4.00	4.00	1.00	4.00	4.00	4.00	0.00
2038	1.00	4.00	4.00	1.00	4.00	4.00	4.00	0.00
2039	1.00	4.00	4.00	1.00	4.00	4.00	4.00	0.00
2040	1.00	4.00	4.00	1.00	4.00	4.00	4.00	0.00
2041	1.00	4.00	4.00	1.00	4.00	4.00	4.00	0.00
2042	1.00	4.00	4.00	1.00	4.00	4.00	4.00	0.00

TABLE 6.3 - 38 (cont)
PRESENT VALUE ANALYSIS
SCENARIO 3 - 20 YEAR CAPITAL COST EXPENDITURES BEGINNING IN 1998

Alternative 3

DISCOUNT RATE:	3 %	
PERIOD	20 YEARS	

		F1	F2	F3	F4	F5	F6	F7	F8
CAPITAL COST	($MM/REACH)	0.8965	9.03785	2.3802	1.559	6.4946	6.82	6.2927	0
PROJECT YEARS		20	20	20	20	20	20	20	20
COST PER YEAR	($MM/REACH)	0.0448	0.4519	0.1190	0.0780	0.3247	0.3410	0.3146	0.0000

Analysis

Capital Cost, (1993 DOLLARS)

YEAR	F1	F2	F3	F4	F5	F6	F7	F8
1993	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
1994	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
1995	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
1996	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
1997	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
1998	0.045	0.452	0.119	0.078	0.325	0.341	0.315	0.000
1999	0.045	0.452	0.119	0.078	0.325	0.341	0.315	0.000
2000	0.045	0.452	0.119	0.078	0.325	0.341	0.315	0.000
2001	0.045	0.452	0.119	0.078	0.325	0.341	0.315	0.000
2002	0.045	0.452	0.119	0.078	0.325	0.341	0.315	0.000
2003	0.045	0.452	0.119	0.078	0.325	0.341	0.315	0.000
2004	0.045	0.452	0.119	0.078	0.325	0.341	0.315	0.000
2005	0.045	0.452	0.119	0.078	0.325	0.341	0.315	0.000
2006	0.045	0.452	0.119	0.078	0.325	0.341	0.315	0.000
2007	0.045	0.452	0.119	0.078	0.325	0.341	0.315	0.000
2008	0.045	0.452	0.119	0.078	0.325	0.341	0.315	0.000
2009	0.045	0.452	0.119	0.078	0.325	0.341	0.315	0.000
2010	0.045	0.452	0.119	0.078	0.325	0.341	0.315	0.000
2011	0.045	0.452	0.119	0.078	0.325	0.341	0.315	0.000
2012	0.045	0.452	0.119	0.078	0.325	0.341	0.315	0.000
2013	0.045	0.452	0.119	0.078	0.325	0.341	0.315	0.000
2014	0.045	0.452	0.119	0.078	0.325	0.341	0.315	0.000
2015	0.045	0.452	0.119	0.078	0.325	0.341	0.315	0.000
2016	0.045	0.452	0.119	0.078	0.325	0.341	0.315	0.000
2017	0.045	0.452	0.119	0.078	0.325	0.341	0.315	0.000
2018	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2019	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2020	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2021	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2022	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2023	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2024	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2025	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2026	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2027	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2028	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2029	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2030	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2031	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2032	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2033	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2034	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2035	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2036	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2037	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2038	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2039	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2040	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2041	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2042	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2043	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

TABLE 6.3 - 38 (cont)
PRESENT VALUE ANALYSIS
SCENARIO 3 - 20 YEAR CAPITAL COST EXPENDITURES BEGINNING IN 1998

Alternative 4
Summary

		F1	F2	F3	F4	F5	F6	F7	F8
Present Value O & M	$/lf	131.06	155.04	132.15	142.46	263.21	0.00	189.93	0.00
Reach Length	lf	3500	11600	4400	3600	3700	4950	6550	1600
Present Value O & M	$	458,721	1,798,514	581,441	512,861	973,873	0	1,244,064	0
Present Value Capital/Reach	$	628,518	4,954,318	3,159,080	1,468,146	2,574,324	0	3,704,822	0
Present Value Alternative	$	1,087,238	6,752,832	3,740,521	1,981,007	3,548,197	0	4,948,886	0

DISCOUNT RATE:	3 %	ASSUMED
PERIOD	50 YEARS	

Operation And Maintenance (O & M) Cost, $/LF (1993 DOLLARS)

YEAR	F1	F2	F3	F4	F5	F6	F7	F8
1993	24.00	20.00	15.00	13.00	39.00	0.00	23.00	0.00
1994	24.00	20.00	15.00	13.00	39.00	0.00	23.00	0.00
1995	24.00	20.00	15.00	13.00	39.00	0.00	23.00	0.00
1996	24.00	20.00	15.00	13.00	39.00	0.00	23.00	0.00
1997	24.00	20.00	15.00	13.00	39.00	0.00	23.00	0.00
1998	1.00	3.00	3.00	2.00	4.00	0.00	4.00	0.00
1999	1.00	3.00	3.00	4.00	4.00	0.00	4.00	0.00
2000	1.00	3.00	3.00	4.00	4.00	0.00	4.00	0.00
2001	1.00	3.00	3.00	4.00	4.00	0.00	4.00	0.00
2002	1.00	3.00	3.00	4.00	4.00	0.00	4.00	0.00
2003	1.00	3.00	3.00	4.00	4.00	0.00	4.00	0.00
2004	1.00	3.00	3.00	4.00	4.00	0.00	4.00	0.00
2005	1.00	3.00	3.00	4.00	4.00	0.00	4.00	0.00
2006	1.00	3.00	3.00	4.00	4.00	0.00	4.00	0.00
2007	1.00	3.00	3.00	4.00	4.00	0.00	4.00	0.00
2008	1.00	3.00	3.00	4.00	4.00	0.00	4.00	0.00
2009	1.00	3.00	3.00	4.00	4.00	0.00	4.00	0.00
2010	1.00	3.00	3.00	4.00	4.00	0.00	4.00	0.00
2011	1.00	3.00	3.00	4.00	4.00	0.00	4.00	0.00
2012	1.00	3.00	3.00	4.00	4.00	0.00	4.00	0.00
2013	1.00	3.00	3.00	4.00	4.00	0.00	4.00	0.00
2014	1.00	3.00	3.00	4.00	4.00	0.00	4.00	0.00
2015	1.00	3.00	3.00	4.00	4.00	0.00	4.00	0.00
2016	1.00	3.00	3.00	4.00	4.00	0.00	4.00	0.00
2017	1.00	3.00	3.00	4.00	4.00	0.00	4.00	0.00
2018	1.00	3.00	3.00	4.00	4.00	0.00	4.00	0.00
2019	1.00	3.00	3.00	4.00	4.00	0.00	4.00	0.00
2020	1.00	3.00	3.00	4.00	4.00	0.00	4.00	0.00
2021	1.00	3.00	3.00	4.00	4.00	0.00	4.00	0.00
2022	1.00	3.00	3.00	4.00	4.00	0.00	4.00	0.00
2023	1.00	3.00	3.00	4.00	4.00	0.00	4.00	0.00
2024	1.00	3.00	3.00	4.00	4.00	0.00	4.00	0.00
2025	1.00	3.00	3.00	4.00	4.00	0.00	4.00	0.00
2026	1.00	3.00	3.00	4.00	4.00	0.00	4.00	0.00
2027	1.00	3.00	3.00	4.00	4.00	0.00	4.00	0.00
2028	1.00	3.00	3.00	4.00	4.00	0.00	4.00	0.00
2029	1.00	3.00	3.00	4.00	4.00	0.00	4.00	0.00
2030	1.00	3.00	3.00	4.00	4.00	0.00	4.00	0.00
2031	1.00	3.00	3.00	4.00	4.00	0.00	4.00	0.00
2032	1.00	3.00	3.00	4.00	4.00	0.00	4.00	0.00
2033	1.00	3.00	3.00	4.00	4.00	0.00	4.00	0.00
2034	1.00	3.00	3.00	4.00	4.00	0.00	4.00	0.00
2035	1.00	3.00	3.00	4.00	4.00	0.00	4.00	0.00
2036	1.00	3.00	3.00	4.00	4.00	0.00	4.00	0.00
2037	1.00	3.00	3.00	4.00	4.00	0.00	4.00	0.00
2038	1.00	3.00	3.00	4.00	4.00	0.00	4.00	0.00
2039	1.00	3.00	3.00	4.00	4.00	0.00	4.00	0.00
2040	1.00	3.00	3.00	4.00	4.00	0.00	4.00	0.00
2041	1.00	3.00	3.00	4.00	4.00	0.00	4.00	0.00
2042	1.00	3.00	3.00	4.00	4.00	0.00	4.00	0.00

TABLE 6.3 - 38 (cont)
PRESENT VALUE ANALYSIS
SCENARIO 3 - 20 YEAR CAPITAL COST EXPENDITURES BEGINNING IN 1998

Alternative 4

DISCOUNT RATE:	3 %	
PERIOD	20 YEARS	

		F1	F2	F3	F4	F5	F6	F7	F8
CAPITAL COST	($MM/REACH)	0.9795	7.72095	4.9232	2.288	4.0119	0	5.7737	0
PROJECT YEARS		20	20	20	20	20	20	20	20
COST PER YEAR	($MM/REACH)	0.048975	0.3860475	0.24616	0.1144	0.200595	0	0.288685	0

Analysis

Capital Cost, (1993 DOLLARS)

YEAR	F1	F2	F3	F4	F5	F6	F7	F8
1993	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
1994	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
1995	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
1996	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
1997	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
1998	0.049	0.386	0.246	0.114	0.201	0.000	0.289	0.000
1999	0.049	0.386	0.246	0.114	0.201	0.000	0.289	0.000
2000	0.049	0.386	0.246	0.114	0.201	0.000	0.289	0.000
2001	0.049	0.386	0.246	0.114	0.201	0.000	0.289	0.000
2002	0.049	0.386	0.246	0.114	0.201	0.000	0.289	0.000
2003	0.049	0.386	0.246	0.114	0.201	0.000	0.289	0.000
2004	0.049	0.386	0.246	0.114	0.201	0.000	0.289	0.000
2005	0.049	0.386	0.246	0.114	0.201	0.000	0.289	0.000
2006	0.049	0.386	0.246	0.114	0.201	0.000	0.289	0.000
2007	0.049	0.386	0.246	0.114	0.201	0.000	0.289	0.000
2008	0.049	0.386	0.246	0.114	0.201	0.000	0.289	0.000
2009	0.049	0.386	0.246	0.114	0.201	0.000	0.289	0.000
2010	0.049	0.386	0.246	0.114	0.201	0.000	0.289	0.000
2011	0.049	0.386	0.246	0.114	0.201	0.000	0.289	0.000
2012	0.049	0.386	0.246	0.114	0.201	0.000	0.289	0.000
2013	0.049	0.386	0.246	0.114	0.201	0.000	0.289	0.000
2014	0.049	0.386	0.246	0.114	0.201	0.000	0.289	0.000
2015	0.049	0.386	0.246	0.114	0.201	0.000	0.289	0.000
2016	0.049	0.386	0.246	0.114	0.201	0.000	0.289	0.000
2017	0.049	0.386	0.246	0.114	0.201	0.000	0.289	0.000
2018	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2019	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2020	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2021	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2022	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2023	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2024	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2025	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2026	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2027	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2028	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2029	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2030	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2031	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2032	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2033	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2034	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2035	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2036	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2037	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2038	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2039	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2040	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2041	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2042	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2043	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

TABLE 6.3 - 38 (cont)
PRESENT VALUE ANALYSIS
SCENARIO 3 - 20 YEAR CAPITAL COST EXPENDITURES BEGINNING IN 1998

Alternative 5
Summary

		F1	F2	F3	F4	F5	F6	F7	F8
Present Value O & M	$/lf	0.00	112.74	89.85	0.00	0.00	0.00	0.00	0.00
Reach Length	lf	3500	11600	4400	3600	3700	4950	6550	1600
Present Value O & M	$	0	1,307,833	395,321	0	0	0	0	0
Present Value Capital/Reach	$	0	8,333,940	7,242,039	0	0	0	0	0
Present Value Alternative	$	0	9,641,773	7,637,360	0	0	0	0	0

DISCOUNT RATE:	3 %	ASSUMED
PERIOD	50 YEARS	

Operation And Maintenance (O & M) Cost, $/LF (1993 DOLLARS)

YEAR	F1	F2	F3	F4	F5	F6	F7	F8
1993	0.00	20.00	15.00	0.00	0.00	0.00	0.00	0.00
1994	0.00	20.00	15.00	0.00	0.00	0.00	0.00	0.00
1995	0.00	20.00	15.00	0.00	0.00	0.00	0.00	0.00
1996	0.00	20.00	15.00	0.00	0.00	0.00	0.00	0.00
1997	0.00	20.00	15.00	0.00	0.00	0.00	0.00	0.00
1998	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00
1999	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00
2000	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00
2001	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00
2002	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00
2003	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00
2004	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00
2005	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00
2006	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00
2007	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00
2008	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00
2009	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00
2010	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00
2011	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00
2012	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00
2013	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00
2014	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00
2015	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00
2016	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00
2017	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00
2018	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00
2019	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00
2020	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00
2021	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00
2022	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00
2023	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00
2024	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00
2025	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00
2026	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00
2027	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00
2028	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00
2029	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00
2030	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00
2031	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00
2032	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00
2033	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00
2034	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00
2035	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00
2036	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00
2037	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00
2038	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00
2039	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00
2040	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00
2041	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00
2042	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00

TABLE 6.3 - 38 (cont)
PRESENT VALUE ANALYSIS
SCENARIO 3 - 20 YEAR CAPITAL COST EXPENDITURES BEGINNING IN 1998

Alternative 5

DISCOUNT RATE:	3 %	
PERIOD	20 YEARS	

		F1	F2	F3	F4	F5	F6	F7	F8
CAPITAL COST	($MM/REACH)	0	12.98785	11.2862	0	0	0	0	0
PROJECT YEARS		20	20	20	20	20	20	20	20
COST PER YEAR	($MM/REACH)	0	0.6493925	0.56431	0	0	0	0	0

Analysis

Capital Cost, (1993 DOLLARS)

YEAR	F1	F2	F3	F4	F5	F6	F7	F8
1993	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
1994	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
1995	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
1996	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
1997	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
1998	0.000	0.649	0.564	0.000	0.000	0.000	0.000	0.000
1999	0.000	0.649	0.564	0.000	0.000	0.000	0.000	0.000
2000	0.000	0.649	0.564	0.000	0.000	0.000	0.000	0.000
2001	0.000	0.649	0.564	0.000	0.000	0.000	0.000	0.000
2002	0.000	0.649	0.564	0.000	0.000	0.000	0.000	0.000
2003	0.000	0.649	0.564	0.000	0.000	0.000	0.000	0.000
2004	0.000	0.649	0.564	0.000	0.000	0.000	0.000	0.000
2005	0.000	0.649	0.564	0.000	0.000	0.000	0.000	0.000
2006	0.000	0.649	0.564	0.000	0.000	0.000	0.000	0.000
2007	0.000	0.649	0.564	0.000	0.000	0.000	0.000	0.000
2008	0.000	0.649	0.564	0.000	0.000	0.000	0.000	0.000
2009	0.000	0.649	0.564	0.000	0.000	0.000	0.000	0.000
2010	0.000	0.649	0.564	0.000	0.000	0.000	0.000	0.000
2011	0.000	0.649	0.564	0.000	0.000	0.000	0.000	0.000
2012	0.000	0.649	0.564	0.000	0.000	0.000	0.000	0.000
2013	0.000	0.649	0.564	0.000	0.000	0.000	0.000	0.000
2014	0.000	0.649	0.564	0.000	0.000	0.000	0.000	0.000
2015	0.000	0.649	0.564	0.000	0.000	0.000	0.000	0.000
2016	0.000	0.649	0.564	0.000	0.000	0.000	0.000	0.000
2017	0.000	0.649	0.564	0.000	0.000	0.000	0.000	0.000
2018	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2019	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2020	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2021	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2022	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2023	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2024	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2025	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2026	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2027	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2028	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2029	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2030	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2031	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2032	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2033	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2034	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2035	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2036	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2037	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2038	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2039	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2040	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2041	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2042	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2043	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

TABLE 6.3-39
PRESENT VALUE ANALYSIS
SCENARIO 4 - 50-YEAR CAPITAL COST EXPENDITURES

TABLE 6.3 - 39
PRESENT VALUE ANALYSIS
SCENARIO 4 - 50 YEAR CAPITAL COST EXPENDITURES

Alternative 1
Summary

		F1	F2	F3	F4	F5	F6	F7	F8
Present Value O & M	$/lf	617.51	514.60	385.95	334.49	1,003.46	823.35	591.78	617.51
Reach Length	lf	3500	11600	4400	3600	3700	4950	6550	1600
Present Value O & M	$	2,161,300	5,969,305	1,698,164	1,204,153	3,712,805	4,075,595	3,876,189	988,023
Present Value Capital/Reach	$	0	0	0	0	0	0	0	0
Present Value Alternative	$	2,161,300	5,969,305	1,698,164	1,204,153	3,712,805	4,075,595	3,876,189	988,023

DISCOUNT RATE:	3 %	ASSUMED
PERIOD	50 YEARS	

Operation And Maintenance (O & M) Cost, $/LF (1993 DOLLARS)

YEAR	F1	F2	F3	F4	F5	F6	F7	F8
1993	24.00	20.00	15.00	13.00	39.00	32.00	23.00	24.00
1994	24.00	20.00	15.00	13.00	39.00	32.00	23.00	24.00
1995	24.00	20.00	15.00	13.00	39.00	32.00	23.00	24.00
1996	24.00	20.00	15.00	13.00	39.00	32.00	23.00	24.00
1997	24.00	20.00	15.00	13.00	39.00	32.00	23.00	24.00
1998	24.00	20.00	15.00	13.00	39.00	32.00	23.00	24.00
1999	24.00	20.00	15.00	13.00	39.00	32.00	23.00	24.00
2000	24.00	20.00	15.00	13.00	39.00	32.00	23.00	24.00
2001	24.00	20.00	15.00	13.00	39.00	32.00	23.00	24.00
2002	24.00	20.00	15.00	13.00	39.00	32.00	23.00	24.00
2003	24.00	20.00	15.00	13.00	39.00	32.00	23.00	24.00
2004	24.00	20.00	15.00	13.00	39.00	32.00	23.00	24.00
2005	24.00	20.00	15.00	13.00	39.00	32.00	23.00	24.00
2006	24.00	20.00	15.00	13.00	39.00	32.00	23.00	24.00
2007	24.00	20.00	15.00	13.00	39.00	32.00	23.00	24.00
2008	24.00	20.00	15.00	13.00	39.00	32.00	23.00	24.00
2009	24.00	20.00	15.00	13.00	39.00	32.00	23.00	24.00
2010	24.00	20.00	15.00	13.00	39.00	32.00	23.00	24.00
2011	24.00	20.00	15.00	13.00	39.00	32.00	23.00	24.00
2012	24.00	20.00	15.00	13.00	39.00	32.00	23.00	24.00
2013	24.00	20.00	15.00	13.00	39.00	32.00	23.00	24.00
2014	24.00	20.00	15.00	13.00	39.00	32.00	23.00	24.00
2015	24.00	20.00	15.00	13.00	39.00	32.00	23.00	24.00
2016	24.00	20.00	15.00	13.00	39.00	32.00	23.00	24.00
2017	24.00	20.00	15.00	13.00	39.00	32.00	23.00	24.00
2018	24.00	20.00	15.00	13.00	39.00	32.00	23.00	24.00
2019	24.00	20.00	15.00	13.00	39.00	32.00	23.00	24.00
2020	24.00	20.00	15.00	13.00	39.00	32.00	23.00	24.00
2021	24.00	20.00	15.00	13.00	39.00	32.00	23.00	24.00
2022	24.00	20.00	15.00	13.00	39.00	32.00	23.00	24.00
2023	24.00	20.00	15.00	13.00	39.00	32.00	23.00	24.00
2024	24.00	20.00	15.00	13.00	39.00	32.00	23.00	24.00
2025	24.00	20.00	15.00	13.00	39.00	32.00	23.00	24.00
2026	24.00	20.00	15.00	13.00	39.00	32.00	23.00	24.00
2027	24.00	20.00	15.00	13.00	39.00	32.00	23.00	24.00
2028	24.00	20.00	15.00	13.00	39.00	32.00	23.00	24.00
2029	24.00	20.00	15.00	13.00	39.00	32.00	23.00	24.00
2030	24.00	20.00	15.00	13.00	39.00	32.00	23.00	24.00
2031	24.00	20.00	15.00	13.00	39.00	32.00	23.00	24.00
2032	24.00	20.00	15.00	13.00	39.00	32.00	23.00	24.00
2033	24.00	20.00	15.00	13.00	39.00	32.00	23.00	24.00
2034	24.00	20.00	15.00	13.00	39.00	32.00	23.00	24.00
2035	24.00	20.00	15.00	13.00	39.00	32.00	23.00	24.00
2036	24.00	20.00	15.00	13.00	39.00	32.00	23.00	24.00
2037	24.00	20.00	15.00	13.00	39.00	32.00	23.00	24.00
2038	24.00	20.00	15.00	13.00	39.00	32.00	23.00	24.00
2039	24.00	20.00	15.00	13.00	39.00	32.00	23.00	24.00
2040	24.00	20.00	15.00	13.00	39.00	32.00	23.00	24.00
2041	24.00	20.00	15.00	13.00	39.00	32.00	23.00	24.00
2042	24.00	20.00	15.00	13.00	39.00	32.00	23.00	24.00

TABLE 6.3 - 39 (cont)
PRESENT VALUE ANALYSIS
SCENARIO 4 - 50 YEAR CAPITAL COST EXPENDITURES

Alternative 1

DISCOUNT RATE:	3 %	
PERIOD	50 YEARS	

		F1	F2	F3	F4	F5	F6	F7	F8
CAPITAL COST	($MM/REACH)	0	0	0	0	0	0	0	0
PROJECT YEARS		50	50	50	50	50	50	50	50
COST PER YEAR	($MM/REACH)	0	0	0	0	0	0	0	0

Analysis

Capital Cost, (1993 DOLLARS)

YEAR	F1	F2	F3	F4	F5	F6	F7	F8
1993	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
1994	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
1995	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
1996	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
1997	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
1998	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
1999	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2002	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2003	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2004	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2005	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2006	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2007	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2009	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2010	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2011	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2012	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2013	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2014	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2015	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2016	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2017	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2018	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2019	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2020	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2021	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2022	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2023	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2024	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2025	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2026	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2027	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2028	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2029	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2030	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2031	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2032	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2033	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2034	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2035	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2036	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2037	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2038	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2039	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2040	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2041	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2042	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2043	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

TABLE 6.3 - 39 (cont)
PRESENT VALUE ANALYSIS
SCENARIO 4 - 50 YEAR CAPITAL COST EXPENDITURES

Alternative 2
Summary

		F1	F2	F3	F4	F5	F6	F7	F8
Present Value O & M	$/lf	102.92	102.92	102.92	102.92	102.92	102.92	102.92	102.92
Reach Length	lf	3500	11600	4400	3600	3700	4950	6550	1600
Present Value O & M	$	360,217	1,193,861	452,844	370,509	380,801	509,449	674,120	164,670
Present Value Capital/Reach	$	1,769,950	327,283	16,982	1,208,270	790,161	1,905,238	880,112	831,946
Present Value Alternative	$	2,130,167	1,521,144	469,825	1,578,778	1,170,962	2,414,687	1,554,232	996,617

DISCOUNT RATE:	3 %	ASSUMED
PERIOD	50 YEARS	

Operation And Maintenance (O & M) Cost, $/LF (1993 DOLLARS)

YEAR	F1	F2	F3	F4	F5	F6	F7	F8
1993	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
1994	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
1995	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
1996	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
1997	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
1998	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
1999	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
2000	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
2001	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
2002	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
2003	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
2004	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
2005	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
2006	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
2007	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
2008	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
2009	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
2010	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
2011	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
2012	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
2013	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
2014	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
2015	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
2016	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
2017	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
2018	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
2019	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
2020	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
2021	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
2022	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
2023	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
2024	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
2025	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
2026	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
2027	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
2028	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
2029	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
2030	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
2031	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
2032	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
2033	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
2034	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
2035	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
2036	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
2037	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
2038	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
2039	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
2040	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
2041	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
2042	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00

TABLE 6.3 - 39 (cont)
PRESENT VALUE ANALYSIS
SCENARIO 4 - 50 YEAR CAPITAL COST EXPENDITURES

Alternative 2

DISCOUNT RATE: 3 %
PERIOD 50 YEARS

		F1	F2	F3	F4	F5	F6	F7	F8
CAPITAL COST	($MM/REACH)	3.4395	0.636	0.033	2.348	1.5355	3.7024	1.7103	1.6167
PROJECT YEARS		50	50	50	50	50	50	50	50
COST PER YEAR	($MM/REACH)	0.06879	0.01272	0.00066	0.04696	0.03071	0.074048	0.034206	0.032334

Analysis

Capital Cost, (1993 DOLLARS)

YEAR	F1	F2	F3	F4	F5	F6	F7	F8
1993	0.069	0.013	0.001	0.047	0.031	0.074	0.034	0.032
1994	0.069	0.013	0.001	0.047	0.031	0.074	0.034	0.032
1995	0.069	0.013	0.001	0.047	0.031	0.074	0.034	0.032
1996	0.069	0.013	0.001	0.047	0.031	0.074	0.034	0.032
1997	0.069	0.013	0.001	0.047	0.031	0.074	0.034	0.032
1998	0.069	0.013	0.001	0.047	0.031	0.074	0.034	0.032
1999	0.069	0.013	0.001	0.047	0.031	0.074	0.034	0.032
2000	0.069	0.013	0.001	0.047	0.031	0.074	0.034	0.032
2001	0.069	0.013	0.001	0.047	0.031	0.074	0.034	0.032
2002	0.069	0.013	0.001	0.047	0.031	0.074	0.034	0.032
2003	0.069	0.013	0.001	0.047	0.031	0.074	0.034	0.032
2004	0.069	0.013	0.001	0.047	0.031	0.074	0.034	0.032
2005	0.069	0.013	0.001	0.047	0.031	0.074	0.034	0.032
2006	0.069	0.013	0.001	0.047	0.031	0.074	0.034	0.032
2007	0.069	0.013	0.001	0.047	0.031	0.074	0.034	0.032
2008	0.069	0.013	0.001	0.047	0.031	0.074	0.034	0.032
2009	0.069	0.013	0.001	0.047	0.031	0.074	0.034	0.032
2010	0.069	0.013	0.001	0.047	0.031	0.074	0.034	0.032
2011	0.069	0.013	0.001	0.047	0.031	0.074	0.034	0.032
2012	0.069	0.013	0.001	0.047	0.031	0.074	0.034	0.032
2013	0.069	0.013	0.001	0.047	0.031	0.074	0.034	0.032
2014	0.069	0.013	0.001	0.047	0.031	0.074	0.034	0.032
2015	0.069	0.013	0.001	0.047	0.031	0.074	0.034	0.032
2016	0.069	0.013	0.001	0.047	0.031	0.074	0.034	0.032
2017	0.069	0.013	0.001	0.047	0.031	0.074	0.034	0.032
2018	0.069	0.013	0.001	0.047	0.031	0.074	0.034	0.032
2019	0.069	0.013	0.001	0.047	0.031	0.074	0.034	0.032
2020	0.069	0.013	0.001	0.047	0.031	0.074	0.034	0.032
2021	0.069	0.013	0.001	0.047	0.031	0.074	0.034	0.032
2022	0.069	0.013	0.001	0.047	0.031	0.074	0.034	0.032
2023	0.069	0.013	0.001	0.047	0.031	0.074	0.034	0.032
2024	0.069	0.013	0.001	0.047	0.031	0.074	0.034	0.032
2025	0.069	0.013	0.001	0.047	0.031	0.074	0.034	0.032
2026	0.069	0.013	0.001	0.047	0.031	0.074	0.034	0.032
2027	0.069	0.013	0.001	0.047	0.031	0.074	0.034	0.032
2028	0.069	0.013	0.001	0.047	0.031	0.074	0.034	0.032
2029	0.069	0.013	0.001	0.047	0.031	0.074	0.034	0.032
2030	0.069	0.013	0.001	0.047	0.031	0.074	0.034	0.032
2031	0.069	0.013	0.001	0.047	0.031	0.074	0.034	0.032
2032	0.069	0.013	0.001	0.047	0.031	0.074	0.034	0.032
2033	0.069	0.013	0.001	0.047	0.031	0.074	0.034	0.032
2034	0.069	0.013	0.001	0.047	0.031	0.074	0.034	0.032
2035	0.069	0.013	0.001	0.047	0.031	0.074	0.034	0.032
2036	0.069	0.013	0.001	0.047	0.031	0.074	0.034	0.032
2037	0.069	0.013	0.001	0.047	0.031	0.074	0.034	0.032
2038	0.069	0.013	0.001	0.047	0.031	0.074	0.034	0.032
2039	0.069	0.013	0.001	0.047	0.031	0.074	0.034	0.032
2040	0.069	0.013	0.001	0.047	0.031	0.074	0.034	0.032
2041	0.069	0.013	0.001	0.047	0.031	0.074	0.034	0.032
2042	0.069	0.013	0.001	0.047	0.031	0.074	0.034	0.032
2043	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

TABLE 6.3 - 39 (cont)
PRESENT VALUE ANALYSIS
SCENARIO 4 - 50 YEAR CAPITAL COST EXPENDITURES

Alternative 3
Summary

		F1	F2	F3	F4	F5	F6	F7	F8
Present Value O & M	$/lf	25.73	102.92	102.92	25.73	102.92	102.92	102.92	0.00
Reach Length	lf	3500	11600	4400	3600	3700	4950	6550	1600
Present Value O & M	$	90,054	1,193,861	452,844	92,627	380,801	509,449	674,120	0
Present Value Capital/Reach	$	461,335	4,650,835	1,224,840	802,254	3,342,091	3,509,540	3,238,194	0
Present Value Alternative	$	551,389	5,844,696	1,677,684	894,881	3,722,891	4,018,989	3,912,314	0

DISCOUNT RATE:	3 %	ASSUMED
PERIOD	50 YEARS	

Operation And Maintenance (O & M) Cost, $/LF (1993 DOLLARS)

YEAR	F1	F2	F3	F4	F5	F6	F7	F8
1993	1.00	4.00	4.00	1.00	4.00	4.00	4.00	0.00
1994	1.00	4.00	4.00	1.00	4.00	4.00	4.00	0.00
1995	1.00	4.00	4.00	1.00	4.00	4.00	4.00	0.00
1996	1.00	4.00	4.00	1.00	4.00	4.00	4.00	0.00
1997	1.00	4.00	4.00	1.00	4.00	4.00	4.00	0.00
1998	1.00	4.00	4.00	1.00	4.00	4.00	4.00	0.00
1999	1.00	4.00	4.00	1.00	4.00	4.00	4.00	0.00
2000	1.00	4.00	4.00	1.00	4.00	4.00	4.00	0.00
2001	1.00	4.00	4.00	1.00	4.00	4.00	4.00	0.00
2002	1.00	4.00	4.00	1.00	4.00	4.00	4.00	0.00
2003	1.00	4.00	4.00	1.00	4.00	4.00	4.00	0.00
2004	1.00	4.00	4.00	1.00	4.00	4.00	4.00	0.00
2005	1.00	4.00	4.00	1.00	4.00	4.00	4.00	0.00
2006	1.00	4.00	4.00	1.00	4.00	4.00	4.00	0.00
2007	1.00	4.00	4.00	1.00	4.00	4.00	4.00	0.00
2008	1.00	4.00	4.00	1.00	4.00	4.00	4.00	0.00
2009	1.00	4.00	4.00	1.00	4.00	4.00	4.00	0.00
2010	1.00	4.00	4.00	1.00	4.00	4.00	4.00	0.00
2011	1.00	4.00	4.00	1.00	4.00	4.00	4.00	0.00
2012	1.00	4.00	4.00	1.00	4.00	4.00	4.00	0.00
2013	1.00	4.00	4.00	1.00	4.00	4.00	4.00	0.00
2014	1.00	4.00	4.00	1.00	4.00	4.00	4.00	0.00
2015	1.00	4.00	4.00	1.00	4.00	4.00	4.00	0.00
2016	1.00	4.00	4.00	1.00	4.00	4.00	4.00	0.00
2017	1.00	4.00	4.00	1.00	4.00	4.00	4.00	0.00
2018	1.00	4.00	4.00	1.00	4.00	4.00	4.00	0.00
2019	1.00	4.00	4.00	1.00	4.00	4.00	4.00	0.00
2020	1.00	4.00	4.00	1.00	4.00	4.00	4.00	0.00
2021	1.00	4.00	4.00	1.00	4.00	4.00	4.00	0.00
2022	1.00	4.00	4.00	1.00	4.00	4.00	4.00	0.00
2023	1.00	4.00	4.00	1.00	4.00	4.00	4.00	0.00
2024	1.00	4.00	4.00	1.00	4.00	4.00	4.00	0.00
2025	1.00	4.00	4.00	1.00	4.00	4.00	4.00	0.00
2026	1.00	4.00	4.00	1.00	4.00	4.00	4.00	0.00
2027	1.00	4.00	4.00	1.00	4.00	4.00	4.00	0.00
2028	1.00	4.00	4.00	1.00	4.00	4.00	4.00	0.00
2029	1.00	4.00	4.00	1.00	4.00	4.00	4.00	0.00
2030	1.00	4.00	4.00	1.00	4.00	4.00	4.00	0.00
2031	1.00	4.00	4.00	1.00	4.00	4.00	4.00	0.00
2032	1.00	4.00	4.00	1.00	4.00	4.00	4.00	0.00
2033	1.00	4.00	4.00	1.00	4.00	4.00	4.00	0.00
2034	1.00	4.00	4.00	1.00	4.00	4.00	4.00	0.00
2035	1.00	4.00	4.00	1.00	4.00	4.00	4.00	0.00
2036	1.00	4.00	4.00	1.00	4.00	4.00	4.00	0.00
2037	1.00	4.00	4.00	1.00	4.00	4.00	4.00	0.00
2038	1.00	4.00	4.00	1.00	4.00	4.00	4.00	0.00
2039	1.00	4.00	4.00	1.00	4.00	4.00	4.00	0.00
2040	1.00	4.00	4.00	1.00	4.00	4.00	4.00	0.00
2041	1.00	4.00	4.00	1.00	4.00	4.00	4.00	0.00
2042	1.00	4.00	4.00	1.00	4.00	4.00	4.00	0.00

TABLE 6.3 - 39 (cont)
PRESENT VALUE ANALYSIS
SCENARIO 4 - 50 YEAR CAPITAL COST EXPENDITURES

Alternative 3

DISCOUNT RATE:	3 %	
PERIOD	50 YEARS	

		F1	F2	F3	F4	F5	F6	F7	F8
CAPITAL COST	($MM/REACH)	0.8965	9.03785	2.3802	1.559	6.4946	6.82	6.2927	0
PROJECT YEARS		50	50	50	50	50	50	50	50
COST PER YEAR	($MM/REACH)	0.0179	0.1808	0.0476	0.0312	0.1299	0.1364	0.1259	0.0000

Analysis

Capital Cost, (1993 DOLLARS)

YEAR	F1	F2	F3	F4	F5	F6	F7	F8
1993	0.018	0.181	0.048	0.031	0.130	0.136	0.126	0.000
1994	0.018	0.181	0.048	0.031	0.130	0.136	0.126	0.000
1995	0.018	0.181	0.048	0.031	0.130	0.136	0.126	0.000
1996	0.018	0.181	0.048	0.031	0.130	0.136	0.126	0.000
1997	0.018	0.181	0.048	0.031	0.130	0.136	0.126	0.000
1998	0.018	0.181	0.048	0.031	0.130	0.136	0.126	0.000
1999	0.018	0.181	0.048	0.031	0.130	0.136	0.126	0.000
2000	0.018	0.181	0.048	0.031	0.130	0.136	0.126	0.000
2001	0.018	0.181	0.048	0.031	0.130	0.136	0.126	0.000
2002	0.018	0.181	0.048	0.031	0.130	0.136	0.126	0.000
2003	0.018	0.181	0.048	0.031	0.130	0.136	0.126	0.000
2004	0.018	0.181	0.048	0.031	0.130	0.136	0.126	0.000
2005	0.018	0.181	0.048	0.031	0.130	0.136	0.126	0.000
2006	0.018	0.181	0.048	0.031	0.130	0.136	0.126	0.000
2007	0.018	0.181	0.048	0.031	0.130	0.136	0.126	0.000
2008	0.018	0.181	0.048	0.031	0.130	0.136	0.126	0.000
2009	0.018	0.181	0.048	0.031	0.130	0.136	0.126	0.000
2010	0.018	0.181	0.048	0.031	0.130	0.136	0.126	0.000
2011	0.018	0.181	0.048	0.031	0.130	0.136	0.126	0.000
2012	0.018	0.181	0.048	0.031	0.130	0.136	0.126	0.000
2013	0.018	0.181	0.048	0.031	0.130	0.136	0.126	0.000
2014	0.018	0.181	0.048	0.031	0.130	0.136	0.126	0.000
2015	0.018	0.181	0.048	0.031	0.130	0.136	0.126	0.000
2016	0.018	0.181	0.048	0.031	0.130	0.136	0.126	0.000
2017	0.018	0.181	0.048	0.031	0.130	0.136	0.126	0.000
2018	0.018	0.181	0.048	0.031	0.130	0.136	0.126	0.000
2019	0.018	0.181	0.048	0.031	0.130	0.136	0.126	0.000
2020	0.018	0.181	0.048	0.031	0.130	0.136	0.126	0.000
2021	0.018	0.181	0.048	0.031	0.130	0.136	0.126	0.000
2022	0.018	0.181	0.048	0.031	0.130	0.136	0.126	0.000
2023	0.018	0.181	0.048	0.031	0.130	0.136	0.126	0.000
2024	0.018	0.181	0.048	0.031	0.130	0.136	0.126	0.000
2025	0.018	0.181	0.048	0.031	0.130	0.136	0.126	0.000
2026	0.018	0.181	0.048	0.031	0.130	0.136	0.126	0.000
2027	0.018	0.181	0.048	0.031	0.130	0.136	0.126	0.000
2028	0.018	0.181	0.048	0.031	0.130	0.136	0.126	0.000
2029	0.018	0.181	0.048	0.031	0.130	0.136	0.126	0.000
2030	0.018	0.181	0.048	0.031	0.130	0.136	0.126	0.000
2031	0.018	0.181	0.048	0.031	0.130	0.136	0.126	0.000
2032	0.018	0.181	0.048	0.031	0.130	0.136	0.126	0.000
2033	0.018	0.181	0.048	0.031	0.130	0.136	0.126	0.000
2034	0.018	0.181	0.048	0.031	0.130	0.136	0.126	0.000
2035	0.018	0.181	0.048	0.031	0.130	0.136	0.126	0.000
2036	0.018	0.181	0.048	0.031	0.130	0.136	0.126	0.000
2037	0.018	0.181	0.048	0.031	0.130	0.136	0.126	0.000
2038	0.018	0.181	0.048	0.031	0.130	0.136	0.126	0.000
2039	0.018	0.181	0.048	0.031	0.130	0.136	0.126	0.000
2040	0.018	0.181	0.048	0.031	0.130	0.136	0.126	0.000
2041	0.018	0.181	0.048	0.031	0.130	0.136	0.126	0.000
2042	0.018	0.181	0.048	0.031	0.130	0.136	0.126	0.000
2043	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

TABLE 6.3 - 39 (cont)
PRESENT VALUE ANALYSIS
SCENARIO 4 - 50 YEAR CAPITAL COST EXPENDITURES

Alternative 4
Summary

		F1	F2	F3	F4	F5	F6	F7	F8
Present Value O & M	$/lf	25.73	122.52	77.19	101.24	102.92	0.00	102.92	0.00
Reach Length	lf	3500	11600	4400	3600	3700	4950	6550	1600
Present Value O & M	$	90,054	1,421,178	339,633	364,479	380,801	0	674,120	0
Present Value Capital/Reach	$	504,046	3,973,164	2,533,455	1,177,394	2,064,505	0	2,971,119	0
Present Value Alternative	$	594,100	5,394,342	2,873,088	1,541,873	2,445,305	0	3,645,239	0

DISCOUNT RATE: 3 % ASSUMED
PERIOD 50 YEARS

Operation And Maintenance (O & M) Cost, $/LF (1993 DOLLARS)

YEAR	F1	F2	F3	F4	F5	F6	F7	F8
1993	1.00	3.00	3.00	4.00	4.00	0.00	4.00	0.00
1994	1.00	3.00	3.00	4.00	4.00	0.00	4.00	0.00
1995	1.00	20.00	3.00	4.00	4.00	0.00	4.00	0.00
1996	1.00	20.00	3.00	4.00	4.00	0.00	4.00	0.00
1997	1.00	20.00	3.00	4.00	4.00	0.00	4.00	0.00
1998	1.00	3.00	3.00	2.00	4.00	0.00	4.00	0.00
1999	1.00	3.00	3.00	4.00	4.00	0.00	4.00	0.00
2000	1.00	3.00	3.00	4.00	4.00	0.00	4.00	0.00
2001	1.00	3.00	3.00	4.00	4.00	0.00	4.00	0.00
2002	1.00	3.00	3.00	4.00	4.00	0.00	4.00	0.00
2003	1.00	3.00	3.00	4.00	4.00	0.00	4.00	0.00
2004	1.00	3.00	3.00	4.00	4.00	0.00	4.00	0.00
2005	1.00	3.00	3.00	4.00	4.00	0.00	4.00	0.00
2006	1.00	3.00	3.00	4.00	4.00	0.00	4.00	0.00
2007	1.00	3.00	3.00	4.00	4.00	0.00	4.00	0.00
2008	1.00	3.00	3.00	4.00	4.00	0.00	4.00	0.00
2009	1.00	3.00	3.00	4.00	4.00	0.00	4.00	0.00
2010	1.00	3.00	3.00	4.00	4.00	0.00	4.00	0.00
2011	1.00	3.00	3.00	4.00	4.00	0.00	4.00	0.00
2012	1.00	3.00	3.00	4.00	4.00	0.00	4.00	0.00
2013	1.00	3.00	3.00	4.00	4.00	0.00	4.00	0.00
2014	1.00	3.00	3.00	4.00	4.00	0.00	4.00	0.00
2015	1.00	3.00	3.00	4.00	4.00	0.00	4.00	0.00
2016	1.00	3.00	3.00	4.00	4.00	0.00	4.00	0.00
2017	1.00	3.00	3.00	4.00	4.00	0.00	4.00	0.00
2018	1.00	3.00	3.00	4.00	4.00	0.00	4.00	0.00
2019	1.00	3.00	3.00	4.00	4.00	0.00	4.00	0.00
2020	1.00	3.00	3.00	4.00	4.00	0.00	4.00	0.00
2021	1.00	3.00	3.00	4.00	4.00	0.00	4.00	0.00
2022	1.00	3.00	3.00	4.00	4.00	0.00	4.00	0.00
2023	1.00	3.00	3.00	4.00	4.00	0.00	4.00	0.00
2024	1.00	3.00	3.00	4.00	4.00	0.00	4.00	0.00
2025	1.00	3.00	3.00	4.00	4.00	0.00	4.00	0.00
2026	1.00	3.00	3.00	4.00	4.00	0.00	4.00	0.00
2027	1.00	3.00	3.00	4.00	4.00	0.00	4.00	0.00
2028	1.00	3.00	3.00	4.00	4.00	0.00	4.00	0.00
2029	1.00	3.00	3.00	4.00	4.00	0.00	4.00	0.00
2030	1.00	3.00	3.00	4.00	4.00	0.00	4.00	0.00
2031	1.00	3.00	3.00	4.00	4.00	0.00	4.00	0.00
2032	1.00	3.00	3.00	4.00	4.00	0.00	4.00	0.00
2033	1.00	3.00	3.00	4.00	4.00	0.00	4.00	0.00
2034	1.00	3.00	3.00	4.00	4.00	0.00	4.00	0.00
2035	1.00	3.00	3.00	4.00	4.00	0.00	4.00	0.00
2036	1.00	3.00	3.00	4.00	4.00	0.00	4.00	0.00
2037	1.00	3.00	3.00	4.00	4.00	0.00	4.00	0.00
2038	1.00	3.00	3.00	4.00	4.00	0.00	4.00	0.00
2039	1.00	3.00	3.00	4.00	4.00	0.00	4.00	0.00
2040	1.00	3.00	3.00	4.00	4.00	0.00	4.00	0.00
2041	1.00	3.00	3.00	4.00	4.00	0.00	4.00	0.00
2042	1.00	3.00	3.00	4.00	4.00	0.00	4.00	0.00

TABLE 6.3 - 39 (cont)
PRESENT VALUE ANALYSIS
SCENARIO 4 - 50 YEAR CAPITAL COST EXPENDITURES

Alternative 4

DISCOUNT RATE:	3 %	
PERIOD	50 YEARS	

		F1	F2	F3	F4	F5	F6	F7	F8
CAPITAL COST	($MM/REACH)	0.9795	7.72095	4.9232	2.288	4.0119	0	5.7737	0
PROJECT YEARS		50	50	50	50	50	50	50	50
COST PER YEAR	($MM/REACH)	0.01959	0.154419	0.098464	0.04576	0.080238	0	0.115474	0

Analysis

Capital Cost, (1993 DOLLARS)

YEAR	F1	F2	F3	F4	F5	F6	F7	F8
1993	0.020	0.154	0.098	0.046	0.080	0.000	0.115	0.000
1994	0.020	0.154	0.098	0.046	0.080	0.000	0.115	0.000
1995	0.020	0.154	0.098	0.046	0.080	0.000	0.115	0.000
1996	0.020	0.154	0.098	0.046	0.080	0.000	0.115	0.000
1997	0.020	0.154	0.098	0.046	0.080	0.000	0.115	0.000
1998	0.020	0.154	0.098	0.046	0.080	0.000	0.115	0.000
1999	0.020	0.154	0.098	0.046	0.080	0.000	0.115	0.000
2000	0.020	0.154	0.098	0.046	0.080	0.000	0.115	0.000
2001	0.020	0.154	0.098	0.046	0.080	0.000	0.115	0.000
2002	0.020	0.154	0.098	0.046	0.080	0.000	0.115	0.000
2003	0.020	0.154	0.098	0.046	0.080	0.000	0.115	0.000
2004	0.020	0.154	0.098	0.046	0.080	0.000	0.115	0.000
2005	0.020	0.154	0.098	0.046	0.080	0.000	0.115	0.000
2006	0.020	0.154	0.098	0.046	0.080	0.000	0.115	0.000
2007	0.020	0.154	0.098	0.046	0.080	0.000	0.115	0.000
2008	0.020	0.154	0.098	0.046	0.080	0.000	0.115	0.000
2009	0.020	0.154	0.098	0.046	0.080	0.000	0.115	0.000
2010	0.020	0.154	0.098	0.046	0.080	0.000	0.115	0.000
2011	0.020	0.154	0.098	0.046	0.080	0.000	0.115	0.000
2012	0.020	0.154	0.098	0.046	0.080	0.000	0.115	0.000
2013	0.020	0.154	0.098	0.046	0.080	0.000	0.115	0.000
2014	0.020	0.154	0.098	0.046	0.080	0.000	0.115	0.000
2015	0.020	0.154	0.098	0.046	0.080	0.000	0.115	0.000
2016	0.020	0.154	0.098	0.046	0.080	0.000	0.115	0.000
2017	0.020	0.154	0.098	0.046	0.080	0.000	0.115	0.000
2018	0.020	0.154	0.098	0.046	0.080	0.000	0.115	0.000
2019	0.020	0.154	0.098	0.046	0.080	0.000	0.115	0.000
2020	0.020	0.154	0.098	0.046	0.080	0.000	0.115	0.000
2021	0.020	0.154	0.098	0.046	0.080	0.000	0.115	0.000
2022	0.020	0.154	0.098	0.046	0.080	0.000	0.115	0.000
2023	0.020	0.154	0.098	0.046	0.080	0.000	0.115	0.000
2024	0.020	0.154	0.098	0.046	0.080	0.000	0.115	0.000
2025	0.020	0.154	0.098	0.046	0.080	0.000	0.115	0.000
2026	0.020	0.154	0.098	0.046	0.080	0.000	0.115	0.000
2027	0.020	0.154	0.098	0.046	0.080	0.000	0.115	0.000
2028	0.020	0.154	0.098	0.046	0.080	0.000	0.115	0.000
2029	0.020	0.154	0.098	0.046	0.080	0.000	0.115	0.000
2030	0.020	0.154	0.098	0.046	0.080	0.000	0.115	0.000
2031	0.020	0.154	0.098	0.046	0.080	0.000	0.115	0.000
2032	0.020	0.154	0.098	0.046	0.080	0.000	0.115	0.000
2033	0.020	0.154	0.098	0.046	0.080	0.000	0.115	0.000
2034	0.020	0.154	0.098	0.046	0.080	0.000	0.115	0.000
2035	0.020	0.154	0.098	0.046	0.080	0.000	0.115	0.000
2036	0.020	0.154	0.098	0.046	0.080	0.000	0.115	0.000
2037	0.020	0.154	0.098	0.046	0.080	0.000	0.115	0.000
2038	0.020	0.154	0.098	0.046	0.080	0.000	0.115	0.000
2039	0.020	0.154	0.098	0.046	0.080	0.000	0.115	0.000
2040	0.020	0.154	0.098	0.046	0.080	0.000	0.115	0.000
2041	0.020	0.154	0.098	0.046	0.080	0.000	0.115	0.000
2042	0.020	0.154	0.098	0.046	0.080	0.000	0.115	0.000
2043	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

TABLE 6.3 - 39 (cont)
PRESENT VALUE ANALYSIS
SCENARIO 4 - 50 YEAR CAPITAL COST EXPENDITURES

Alternative 5
Summary

		F1	F2	F3	F4	F5	F6	F7	F8
Present Value O & M	$/lf	0.00	25.73	25.73	0.00	0.00	0.00	0.00	0.00
Reach Length	lf	3500	11600	4400	3600	3700	4950	6550	1600
Present Value O & M	$	0	298,465	113,211	0	0	0	0	0
Present Value Capital/Reach	$	0	6,683,486	5,807,825	0	0	0	0	0
Present Value Alternative	$	0	6,981,952	5,921,036	0	0	0	0	0

DISCOUNT RATE: 3 % ASSUMED
PERIOD 50 YEARS

Operation And Maintenance (O & M) Cost, $/LF (1993 DOLLARS)

YEAR	F1	F2	F3	F4	F5	F6	F7	F8
1993	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00
1994	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00
1995	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00
1996	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00
1997	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00
1998	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00
1999	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00
2000	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00
2001	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00
2002	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00
2003	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00
2004	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00
2005	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00
2006	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00
2007	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00
2008	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00
2009	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00
2010	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00
2011	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00
2012	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00
2013	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00
2014	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00
2015	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00
2016	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00
2017	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00
2018	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00
2019	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00
2020	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00
2021	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00
2022	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00
2023	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00
2024	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00
2025	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00
2026	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00
2027	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00
2028	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00
2029	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00
2030	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00
2031	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00
2032	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00
2033	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00
2034	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00
2035	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00
2036	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00
2037	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00
2038	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00
2039	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00
2040	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00
2041	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00
2042	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00

TABLE 6.3 - 39 (cont)
PRESENT VALUE ANALYSIS
SCENARIO 4 - 50 YEAR CAPITAL COST EXPENDITURES

Alternative 5

DISCOUNT RATE:	3 %	
PERIOD	50 YEARS	

		F1	F2	F3	F4	F5	F6	F7	F8
CAPITAL COST	($MM/REACH)	0	12.98785	11.2862	0	0	0	0	0
PROJECT YEARS		50	50	50	50	50	50	50	50
COST PER YEAR	($MM/REACH)	0	0.259757	0.225724	0	0	0	0	0

Analysis

Capital Cost, (1993 DOLLARS)

YEAR	F1	F2	F3	F4	F5	F6	F7	F8
1993	0.000	0.260	0.226	0.000	0.000	0.000	0.000	0.000
1994	0.000	0.260	0.226	0.000	0.000	0.000	0.000	0.000
1995	0.000	0.260	0.226	0.000	0.000	0.000	0.000	0.000
1996	0.000	0.260	0.226	0.000	0.000	0.000	0.000	0.000
1997	0.000	0.260	0.226	0.000	0.000	0.000	0.000	0.000
1998	0.000	0.260	0.226	0.000	0.000	0.000	0.000	0.000
1999	0.000	0.260	0.226	0.000	0.000	0.000	0.000	0.000
2000	0.000	0.260	0.226	0.000	0.000	0.000	0.000	0.000
2001	0.000	0.260	0.226	0.000	0.000	0.000	0.000	0.000
2002	0.000	0.260	0.226	0.000	0.000	0.000	0.000	0.000
2003	0.000	0.260	0.226	0.000	0.000	0.000	0.000	0.000
2004	0.000	0.260	0.226	0.000	0.000	0.000	0.000	0.000
2005	0.000	0.260	0.226	0.000	0.000	0.000	0.000	0.000
2006	0.000	0.260	0.226	0.000	0.000	0.000	0.000	0.000
2007	0.000	0.260	0.226	0.000	0.000	0.000	0.000	0.000
2008	0.000	0.260	0.226	0.000	0.000	0.000	0.000	0.000
2009	0.000	0.260	0.226	0.000	0.000	0.000	0.000	0.000
2010	0.000	0.260	0.226	0.000	0.000	0.000	0.000	0.000
2011	0.000	0.260	0.226	0.000	0.000	0.000	0.000	0.000
2012	0.000	0.260	0.226	0.000	0.000	0.000	0.000	0.000
2013	0.000	0.260	0.226	0.000	0.000	0.000	0.000	0.000
2014	0.000	0.260	0.226	0.000	0.000	0.000	0.000	0.000
2015	0.000	0.260	0.226	0.000	0.000	0.000	0.000	0.000
2016	0.000	0.260	0.226	0.000	0.000	0.000	0.000	0.000
2017	0.000	0.260	0.226	0.000	0.000	0.000	0.000	0.000
2018	0.000	0.260	0.226	0.000	0.000	0.000	0.000	0.000
2019	0.000	0.260	0.226	0.000	0.000	0.000	0.000	0.000
2020	0.000	0.260	0.226	0.000	0.000	0.000	0.000	0.000
2021	0.000	0.260	0.226	0.000	0.000	0.000	0.000	0.000
2022	0.000	0.260	0.226	0.000	0.000	0.000	0.000	0.000
2023	0.000	0.260	0.226	0.000	0.000	0.000	0.000	0.000
2024	0.000	0.260	0.226	0.000	0.000	0.000	0.000	0.000
2025	0.000	0.260	0.226	0.000	0.000	0.000	0.000	0.000
2026	0.000	0.260	0.226	0.000	0.000	0.000	0.000	0.000
2027	0.000	0.260	0.226	0.000	0.000	0.000	0.000	0.000
2028	0.000	0.260	0.226	0.000	0.000	0.000	0.000	0.000
2029	0.000	0.260	0.226	0.000	0.000	0.000	0.000	0.000
2030	0.000	0.260	0.226	0.000	0.000	0.000	0.000	0.000
2031	0.000	0.260	0.226	0.000	0.000	0.000	0.000	0.000
2032	0.000	0.260	0.226	0.000	0.000	0.000	0.000	0.000
2033	0.000	0.260	0.226	0.000	0.000	0.000	0.000	0.000
2034	0.000	0.260	0.226	0.000	0.000	0.000	0.000	0.000
2035	0.000	0.260	0.226	0.000	0.000	0.000	0.000	0.000
2036	0.000	0.260	0.226	0.000	0.000	0.000	0.000	0.000
2037	0.000	0.260	0.226	0.000	0.000	0.000	0.000	0.000
2038	0.000	0.260	0.226	0.000	0.000	0.000	0.000	0.000
2039	0.000	0.260	0.226	0.000	0.000	0.000	0.000	0.000
2040	0.000	0.260	0.226	0.000	0.000	0.000	0.000	0.000
2041	0.000	0.260	0.226	0.000	0.000	0.000	0.000	0.000
2042	0.000	0.260	0.226	0.000	0.000	0.000	0.000	0.000
2043	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

TABLE 6.3-40
PRESENT VALUE ANALYSIS
SCENARIO 5 - 1/2 CAPITAL COSTS FOR 2 YEARS CONSECUTIVELY PER REACH

TABLE 6.3 - 40
PRESENT VALUE ANALYSIS
SCENARIO 5 - 1/2 CAPITAL COSTS FOR 2 YEARS CONSECUTIVELY PER REACH

Alternative 2
Summary

		F1	F2	F3	F4	F5	F6	F7	F8
Present Value O & M	$/lf	102.92	133.53	143.81	151.67	348.61	341.76	292.05	328.84
Reach Length	lf	3500	11600	4400	3600	3700	4950	6550	1600
Present Value O & M	$	360,217	1,549,001	632,751	546,026	1,289,851	1,691,735	1,912,896	526,145
Present Value Capital/Reach	$	3,290,690	573,554	28,052	1,881,336	1,159,695	2,635,741	1,147,670	1,022,586
Present Value Alternative	$	3,650,906	2,122,555	660,803	2,427,361	2,449,545	4,327,476	3,060,566	1,548,731

DISCOUNT RATE: 3 % ASSUMED
PERIOD 50 YEARS

Operation And Maintenance (O & M) Cost, $/LF (1993 DOLLARS)

YEAR	F1	F2	F3	F4	F5	F6	F7	F8
1993	4.00	20.00	15.00	13.00	39.00	32.00	23.00	24.00
1994	4.00	20.00	15.00	13.00	39.00	32.00	23.00	24.00
1995	4.00	4.00	15.00	13.00	39.00	32.00	23.00	24.00
1996	4.00	4.00	15.00	13.00	39.00	32.00	23.00	24.00
1997	4.00	4.00	4.00	13.00	39.00	32.00	23.00	24.00
1998	4.00	4.00	4.00	13.00	39.00	32.00	23.00	24.00
1999	4.00	4.00	4.00	4.00	39.00	32.00	23.00	24.00
2000	4.00	4.00	4.00	4.00	39.00	32.00	23.00	24.00
2001	4.00	4.00	4.00	4.00	4.00	32.00	23.00	24.00
2002	4.00	4.00	4.00	4.00	4.00	32.00	23.00	24.00
2003	4.00	4.00	4.00	4.00	4.00	4.00	23.00	24.00
2004	4.00	4.00	4.00	4.00	4.00	4.00	23.00	24.00
2005	4.00	4.00	4.00	4.00	4.00	4.00	4.00	24.00
2006	4.00	4.00	4.00	4.00	4.00	4.00	4.00	24.00
2007	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
2008	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
2009	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
2010	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
2011	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
2012	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
2013	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
2014	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
2015	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
2016	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
2017	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
2018	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
2019	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
2020	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
2021	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
2022	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
2023	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
2024	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
2025	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
2026	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
2027	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
2028	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
2029	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
2030	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
2031	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
2032	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
2033	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
2034	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
2035	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
2036	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
2037	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
2038	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
2039	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
2040	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
2041	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
2042	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00

TABLE 6.3 - 40
PRESENT VALUE ANALYSIS
SCENARIO 5 - 1/2 CAPITAL COSTS FOR 2 YEARS CONSECUTIVELY PER REACH

Alternative 2

DISCOUNT RATE:	3 %	
PERIOD	2 YEARS	

		F1	F2	F3	F4	F5	F6	F7	F8
CAPITAL COST	($MM/REACH)	3.4395	0.636	0.033	2.348	1.5355	3.7024	1.7103	1.6167
PROJECT YEARS		2	2	2	2	2	2	2	2
COST PER YEAR	($MM/REACH)	1.71975	0.318	0.0165	1.174	0.76775	1.8512	0.85515	0.80835

Analysis

Capital Cost, (1993 DOLLARS)

YEAR	F1	F2	F3	F4	F5	F6	F7	F8
1993	1.720							
1994	1.720							
1995		0.318						
1996		0.318						
1997			0.017					
1998			0.017					
1999				1.174				
2000				1.174				
2001					0.768			
2002					0.768			
2003						1.851		
2004						1.851		
2005							0.855	
2006							0.855	
2007								0.808
2008								0.808

TABLE 6.3 - 40
PRESENT VALUE ANALYSIS
SCENARIO 5 - 1/2 CAPITAL COSTS FOR 2 YEARS CONSECUTIVELY PER REACH

Alternative 3
Summary

		F1	F2	F3	F4	F5	F6	F7	F8
Present Value O & M	$/lf	25.73	133.53	143.81	90.74	348.61	307.37	292.05	0.00
Reach Length	lf	3500	11600	4400	3600	3700	4950	6550	1600
Present Value O & M	$	90,054	1,549,001	632,751	326,650	1,289,851	1,521,460	1,912,896	0
Present Value Capital/Reach	$	857,713	8,150,463	2,023,281	1,249,149	4,905,836	4,855,162	4,222,619	0
Present Value Alternative	$	947,767	9,699,464	2,656,032	1,575,799	6,195,687	6,376,622	6,135,515	0

DISCOUNT RATE:	3 %	ASSUMED
PERIOD	50 YEARS	

Operation And Maintenance (O & M) Cost, $/LF (1993 DOLLARS)

YEAR	F1	F2	F3	F4	F5	F6	F7	F8
1993	1.00	20.00	15.00	13.00	39.00	32.00	23.00	0.00
1994	1.00	20.00	15.00	13.00	39.00	32.00	23.00	0.00
1995	1.00	4.00	15.00	13.00	39.00	32.00	23.00	0.00
1996	1.00	4.00	15.00	13.00	39.00	32.00	23.00	0.00
1997	1.00	4.00	4.00	13.00	39.00	32.00	23.00	0.00
1998	1.00	4.00	4.00	13.00	39.00	32.00	23.00	0.00
1999	1.00	4.00	4.00	1.00	39.00	32.00	23.00	0.00
2000	1.00	4.00	4.00	1.00	39.00	32.00	23.00	0.00
2001	1.00	4.00	4.00	1.00	4.00	32.00	23.00	0.00
2002	1.00	4.00	4.00	1.00	4.00	32.00	23.00	0.00
2003	1.00	4.00	4.00	1.00	4.00	2.00	23.00	0.00
2004	1.00	4.00	4.00	1.00	4.00	2.00	23.00	0.00
2005	1.00	4.00	4.00	1.00	4.00	2.00	4.00	0.00
2006	1.00	4.00	4.00	1.00	4.00	2.00	4.00	0.00
2007	1.00	4.00	4.00	1.00	4.00	2.00	4.00	0.00
2008	1.00	4.00	4.00	1.00	4.00	2.00	4.00	0.00
2009	1.00	4.00	4.00	1.00	4.00	2.00	4.00	0.00
2010	1.00	4.00	4.00	1.00	4.00	2.00	4.00	0.00
2011	1.00	4.00	4.00	1.00	4.00	2.00	4.00	0.00
2012	1.00	4.00	4.00	1.00	4.00	2.00	4.00	0.00
2013	1.00	4.00	4.00	1.00	4.00	2.00	4.00	0.00
2014	1.00	4.00	4.00	1.00	4.00	2.00	4.00	0.00
2015	1.00	4.00	4.00	1.00	4.00	2.00	4.00	0.00
2016	1.00	4.00	4.00	1.00	4.00	2.00	4.00	0.00
2017	1.00	4.00	4.00	1.00	4.00	2.00	4.00	0.00
2018	1.00	4.00	4.00	1.00	4.00	2.00	4.00	0.00
2019	1.00	4.00	4.00	1.00	4.00	2.00	4.00	0.00
2020	1.00	4.00	4.00	1.00	4.00	2.00	4.00	0.00
2021	1.00	4.00	4.00	1.00	4.00	2.00	4.00	0.00
2022	1.00	4.00	4.00	1.00	4.00	2.00	4.00	0.00
2023	1.00	4.00	4.00	1.00	4.00	2.00	4.00	0.00
2024	1.00	4.00	4.00	1.00	4.00	2.00	4.00	0.00
2025	1.00	4.00	4.00	1.00	4.00	2.00	4.00	0.00
2026	1.00	4.00	4.00	1.00	4.00	2.00	4.00	0.00
2027	1.00	4.00	4.00	1.00	4.00	2.00	4.00	0.00
2028	1.00	4.00	4.00	1.00	4.00	2.00	4.00	0.00
2029	1.00	4.00	4.00	1.00	4.00	2.00	4.00	0.00
2030	1.00	4.00	4.00	1.00	4.00	2.00	4.00	0.00
2031	1.00	4.00	4.00	1.00	4.00	2.00	4.00	0.00
2032	1.00	4.00	4.00	1.00	4.00	2.00	4.00	0.00
2033	1.00	4.00	4.00	1.00	4.00	2.00	4.00	0.00
2034	1.00	4.00	4.00	1.00	4.00	2.00	4.00	0.00
2035	1.00	4.00	4.00	1.00	4.00	2.00	4.00	0.00
2036	1.00	4.00	4.00	1.00	4.00	2.00	4.00	0.00
2037	1.00	4.00	4.00	1.00	4.00	2.00	4.00	0.00
2038	1.00	4.00	4.00	1.00	4.00	2.00	4.00	0.00
2039	1.00	4.00	4.00	1.00	4.00	2.00	4.00	0.00
2040	1.00	4.00	4.00	1.00	4.00	2.00	4.00	0.00
2041	1.00	4.00	4.00	1.00	4.00	2.00	4.00	0.00
2042	1.00	4.00	4.00	1.00	4.00	2.00	4.00	0.00

TABLE 6.3 - 40
PRESENT VALUE ANALYSIS
SCENARIO 5 - 1/2 CAPITAL COSTS FOR 2 YEARS CONSECUTIVELY PER REACH

Alternative 3

DISCOUNT RATE:	3 %	
PERIOD	2 YEARS	

		F1	F2	F3	F4	F5	F6	F7	F8
CAPITAL COST	($MM/REACH)	0.8965	9.03785	2.3802	1.559	6.4956	6.82	6.2927	0
PROJECT YEARS		2	2	2	2	2	2	2	2
COST PER YEAR	($MM/REACH)	0.44825	4.518925	1.1901	0.7795	3.2478	3.41	3.14635	0

Analysis

Capital Cost, $/LF (1993 DOLLARS)

YEAR	F1	F2	F3	F4	F5	F6	F7	F8
1993	0.448							
1994	0.448							
1995		4.519						
1996		4.519						
1997			1.190					
1998			1.190					
1999				0.780				
2000				0.780				
2001					3.248			
2002					3.248			
2003						3.410		
2004						3.410		
2005							3.146	
2006							3.146	
2007								0.000
2008								0.000

TABLE 6.3 - 40
PRESENT VALUE ANALYSIS
SCENARIO 5 - 1/2 CAPITAL COSTS FOR 2 YEARS CONSECUTIVELY PER REACH

Alternative 4
Summary

		F1	F2	F3	F4	F5	F6	F7	F8
Present Value O & M	$/lf	25.73	109.72	121.79	111.05	348.61	0.00	292.05	0.00
Reach Length	lf	3500	11600	4400	3600	3700	4950	6550	1600
Present Value O & M	$	90,054	1,272,732	535,896	399,775	1,289,851	0	1,912,896	0
Present Value Capital/Reach	$	965,235	7,171,749	4,310,498	1,888,259	3,120,909	0	3,990,583	0
Present Value Alternative	$	1,055,290	8,444,481	4,846,393	2,288,034	4,410,760	0	5,903,478	0

DISCOUNT RATE:	3 %	ASSUMED
PERIOD	50	YEARS

Operation And Maintenance (O & M) Cost, $/LF (1993 DOLLARS)

YEAR	F1	F2	F3	F4	F5	F6	F7	F8
1993	1.00	20.00	15.00	13.00	39.00	0.00	23.00	0.00
1994	1.00	20.00	15.00	13.00	39.00	0.00	23.00	0.00
1995	1.00	3.00	15.00	13.00	39.00	0.00	23.00	0.00
1996	1.00	3.00	15.00	13.00	39.00	0.00	23.00	0.00
1997	1.00	3.00	3.00	13.00	39.00	0.00	23.00	0.00
1998	1.00	3.00	3.00	13.00	39.00	0.00	23.00	0.00
1999	1.00	3.00	3.00	2.00	39.00	0.00	23.00	0.00
2000	1.00	3.00	3.00	2.00	39.00	0.00	23.00	0.00
2001	1.00	3.00	3.00	2.00	4.00	0.00	23.00	0.00
2002	1.00	3.00	3.00	2.00	4.00	0.00	23.00	0.00
2003	1.00	3.00	3.00	2.00	4.00	0.00	23.00	0.00
2004	1.00	3.00	3.00	2.00	4.00	0.00	23.00	0.00
2005	1.00	3.00	3.00	2.00	4.00	0.00	4.00	0.00
2006	1.00	3.00	3.00	2.00	4.00	0.00	4.00	0.00
2007	1.00	3.00	3.00	2.00	4.00	0.00	4.00	0.00
2008	1.00	3.00	3.00	2.00	4.00	0.00	4.00	0.00
2009	1.00	3.00	3.00	2.00	4.00	0.00	4.00	0.00
2010	1.00	3.00	3.00	2.00	4.00	0.00	4.00	0.00
2011	1.00	3.00	3.00	2.00	4.00	0.00	4.00	0.00
2012	1.00	3.00	3.00	2.00	4.00	0.00	4.00	0.00
2013	1.00	3.00	3.00	2.00	4.00	0.00	4.00	0.00
2014	1.00	3.00	3.00	2.00	4.00	0.00	4.00	0.00
2015	1.00	3.00	3.00	2.00	4.00	0.00	4.00	0.00
2016	1.00	3.00	3.00	2.00	4.00	0.00	4.00	0.00
2017	1.00	3.00	3.00	2.00	4.00	0.00	4.00	0.00
2018	1.00	3.00	3.00	2.00	4.00	0.00	4.00	0.00
2019	1.00	3.00	3.00	2.00	4.00	0.00	4.00	0.00
2020	1.00	3.00	3.00	2.00	4.00	0.00	4.00	0.00
2021	1.00	3.00	3.00	2.00	4.00	0.00	4.00	0.00
2022	1.00	3.00	3.00	2.00	4.00	0.00	4.00	0.00
2023	1.00	3.00	3.00	2.00	4.00	0.00	4.00	0.00
2024	1.00	3.00	3.00	2.00	4.00	0.00	4.00	0.00
2025	1.00	3.00	3.00	2.00	4.00	0.00	4.00	0.00
2026	1.00	3.00	3.00	2.00	4.00	0.00	4.00	0.00
2027	1.00	3.00	3.00	2.00	4.00	0.00	4.00	0.00
2028	1.00	3.00	3.00	2.00	4.00	0.00	4.00	0.00
2029	1.00	3.00	3.00	2.00	4.00	0.00	4.00	0.00
2030	1.00	3.00	3.00	2.00	4.00	0.00	4.00	0.00
2031	1.00	3.00	3.00	2.00	4.00	0.00	4.00	0.00
2032	1.00	3.00	3.00	2.00	4.00	0.00	4.00	0.00
2033	1.00	3.00	3.00	2.00	4.00	0.00	4.00	0.00
2034	1.00	3.00	3.00	2.00	4.00	0.00	4.00	0.00
2035	1.00	3.00	3.00	2.00	4.00	0.00	4.00	0.00
2036	1.00	3.00	3.00	2.00	4.00	0.00	4.00	0.00
2037	1.00	3.00	3.00	2.00	4.00	0.00	4.00	0.00
2038	1.00	3.00	3.00	2.00	4.00	0.00	4.00	0.00
2039	1.00	3.00	3.00	2.00	4.00	0.00	4.00	0.00
2040	1.00	3.00	3.00	2.00	4.00	0.00	4.00	0.00
2041	1.00	3.00	3.00	2.00	4.00	0.00	4.00	0.00
2042	1.00	3.00	3.00	2.00	4.00	0.00	4.00	0.00

TABLE 6.3 - 40
PRESENT VALUE ANALYSIS
SCENARIO 5 - 1/2 CAPITAL COSTS FOR 2 YEARS CONSECUTIVELY PER REACH

Alternative 4

DISCOUNT RATE:	3 %	
PERIOD	2 YEARS	

		F1	F2	F3	F4	F5	F6	F7	F8
CAPITAL COST	($MM/REACH)	0.9795	7.72095	4.9232	2.288	4.0119	0	5.7737	0
PROJECT YEARS		2	2	2	2	2	2	2	2
COST PER YEAR	($MM/REACH)	0.48975	3.860475	2.4616	1.144	2.00595	0	2.88685	0

Analysis

Capital Cost, $/LF (1993 DOLLARS)

YEAR	F1	F2	F3	F4	F5	F6	F7	F8
1993	0.490							
1994	0.490							
1995		3.860						
1996		3.860						
1997			2.462					
1998			2.462					
1999				1.144				
2000				1.144				
2001					2.006			
2002					2.006			
2003						0.000		
2004						0.000		
2005							2.887	
2006							2.887	
2007								0.000
2008								0.000

TABLE 6.3 - 40
PRESENT VALUE ANALYSIS
SCENARIO 5 - 1/2 CAPITAL COSTS FOR 2 YEARS CONSECUTIVELY PER REACH

Alternative 5
Summary

		F1	F2	F3	F4	F5	F6	F7	F8
Present Value O & M	$/lf	0.00	25.73	25.73	0.00	0.00	0.00	0.00	0.00
Reach Length	lf	3500	11600	4400	3600	3700	4950	6550	1600
Present Value O & M	$	0	298,465	113,211	0	0	0	0	0
Present Value Capital/Reach	$	0	12,425,929	10,178,057	0	0	0	0	0
Present Value Alternative	$	0	12,724,394	10,291,268	0	0	0	0	0

DISCOUNT RATE:	3 %	ASSUMED
PERIOD	50 YEARS	

Operation And Maintenance (O & M) Cost, $/LF (1993 DOLLARS)

YEAR	F1	F2	F3	F4	F5	F6	F7	F8
1993	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00
1994	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00
1995	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00
1996	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00
1997	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00
1998	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00
1999	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00
2000	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00
2001	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00
2002	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00
2003	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00
2004	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00
2005	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00
2006	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00
2007	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00
2008	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00
2009	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00
2010	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00
2011	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00
2012	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00
2013	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00
2014	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00
2015	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00
2016	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00
2017	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00
2018	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00
2019	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00
2020	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00
2021	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00
2022	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00
2023	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00
2024	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00
2025	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00
2026	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00
2027	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00
2028	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00
2029	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00
2030	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00
2031	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00
2032	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00
2033	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00
2034	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00
2035	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00
2036	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00
2037	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00
2038	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00
2039	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00
2040	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00
2041	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00
2042	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00

TABLE 6.3 - 40
PRESENT VALUE ANALYSIS
SCENARIO 5 - 1/2 CAPITAL COSTS FOR 2 YEARS CONSECUTIVELY PER REACH

Alternative 5

DISCOUNT RATE:	3 %	
PERIOD	2 YEARS	

		F1	F2	F3	F4	F5	F6	F7	F8
CAPITAL COST	($MM/REACH)	0	12.98785	11.2862	0	0	0	0	0
PROJECT YEARS		2	2	2	2	2	2	2	2
COST PER YEAR	($MM/REACH)	0	6.493925	5.6431	0	0	0	0	0

Analysis

Capital Cost, (1993 DOLLARS)

YEAR	F1	F2	F3	F4	F5	F6	F7	F8
1993	0.000	6.494		0.000	0.000	0.000	0.000	0.000
1994	0.000	6.494		0.000	0.000	0.000	0.000	0.000
1995	0.000		5.643	0.000	0.000	0.000	0.000	0.000
1996	0.000		5.643	0.000	0.000	0.000	0.000	0.000

TABLE 6.3-41
PRESENT VALUE ANALYSIS
SELECTED ALTERNATIVE ANALYSIS,
$1 MILLION TOTAL EXPENDITURE PER YEAR BEGINNING IN YEAR 1993

TABLE 6.3 - 41
Present Value Analysis
Selected Alternative Analysis

$1 Million Total Expenditure Per Year
Beginning in Year 1993
SUMMARY

		F1	F2	F3	F4	F5	F6	F7	F8
Present Value O & M	$/lf	25.73	25.73	25.73	25.73	102.92	102.92	102.92	102.92
Reach Length	lf	3500	11600	4400	3600	3700	4950	6550	1600
Present Value O & M	$	90,054	298,465	113,211	92,627	380,801	509,449	674,120	164,670
Present Value Capital/Reach	$	504,046	6,683,486	5,807,825	1,177,394	2,064,505	3,509,540	2,971,119	831,946
Present Value Alternative	$	594,100	6,981,952	5,921,036	1,270,021	2,445,305	4,018,989	3,645,239	996,617

DISCOUNT RATE: 3 % ASSUMED
PERIOD 50 YEARS

Selected Alternative	**Alt 4**	**Alt 5**	**Alt 5**	**Alt 4**	**Alt 4**	**Alt 3**	**Alt 4**	**Alt 2**
	Operation And Maintenance (O & M) Cost, $/LF (1993 DOLLARS)							
YEAR	F1	F2	F3	F4	F5	F6	F7	F8
1993	1.00	1.00	1.00	1.00	4.00	4.00	4.00	4.00
1994	1.00	1.00	1.00	1.00	4.00	4.00	4.00	4.00
1995	1.00	1.00	1.00	1.00	4.00	4.00	4.00	4.00
1996	1.00	1.00	1.00	1.00	4.00	4.00	4.00	4.00
1997	1.00	1.00	1.00	1.00	4.00	4.00	4.00	4.00
1998	1.00	1.00	1.00	1.00	4.00	4.00	4.00	4.00
1999	1.00	1.00	1.00	1.00	4.00	4.00	4.00	4.00
2000	1.00	1.00	1.00	1.00	4.00	4.00	4.00	4.00
2001	1.00	1.00	1.00	1.00	4.00	4.00	4.00	4.00
2002	1.00	1.00	1.00	1.00	4.00	4.00	4.00	4.00
2003	1.00	1.00	1.00	1.00	4.00	4.00	4.00	4.00
2004	1.00	1.00	1.00	1.00	4.00	4.00	4.00	4.00
2005	1.00	1.00	1.00	1.00	4.00	4.00	4.00	4.00
2006	1.00	1.00	1.00	1.00	4.00	4.00	4.00	4.00
2007	1.00	1.00	1.00	1.00	4.00	4.00	4.00	4.00
2008	1.00	1.00	1.00	1.00	4.00	4.00	4.00	4.00
2009	1.00	1.00	1.00	1.00	4.00	4.00	4.00	4.00
2010	1.00	1.00	1.00	1.00	4.00	4.00	4.00	4.00
2011	1.00	1.00	1.00	1.00	4.00	4.00	4.00	4.00
2012	1.00	1.00	1.00	1.00	4.00	4.00	4.00	4.00
2013	1.00	1.00	1.00	1.00	4.00	4.00	4.00	4.00
2014	1.00	1.00	1.00	1.00	4.00	4.00	4.00	4.00
2015	1.00	1.00	1.00	1.00	4.00	4.00	4.00	4.00
2016	1.00	1.00	1.00	1.00	4.00	4.00	4.00	4.00
2017	1.00	1.00	1.00	1.00	4.00	4.00	4.00	4.00
2018	1.00	1.00	1.00	1.00	4.00	4.00	4.00	4.00
2019	1.00	1.00	1.00	1.00	4.00	4.00	4.00	4.00
2020	1.00	1.00	1.00	1.00	4.00	4.00	4.00	4.00
2021	1.00	1.00	1.00	1.00	4.00	4.00	4.00	4.00
2022	1.00	1.00	1.00	1.00	4.00	4.00	4.00	4.00
2023	1.00	1.00	1.00	1.00	4.00	4.00	4.00	4.00
2024	1.00	1.00	1.00	1.00	4.00	4.00	4.00	4.00
2025	1.00	1.00	1.00	1.00	4.00	4.00	4.00	4.00
2026	1.00	1.00	1.00	1.00	4.00	4.00	4.00	4.00
2027	1.00	1.00	1.00	1.00	4.00	4.00	4.00	4.00
2028	1.00	1.00	1.00	1.00	4.00	4.00	4.00	4.00
2029	1.00	1.00	1.00	1.00	4.00	4.00	4.00	4.00
2030	1.00	1.00	1.00	1.00	4.00	4.00	4.00	4.00
2031	1.00	1.00	1.00	1.00	4.00	4.00	4.00	4.00
2032	1.00	1.00	1.00	1.00	4.00	4.00	4.00	4.00
2033	1.00	1.00	1.00	1.00	4.00	4.00	4.00	4.00
2034	1.00	1.00	1.00	1.00	4.00	4.00	4.00	4.00
2035	1.00	1.00	1.00	1.00	4.00	4.00	4.00	4.00
2036	1.00	1.00	1.00	1.00	4.00	4.00	4.00	4.00
2037	1.00	1.00	1.00	1.00	4.00	4.00	4.00	4.00
2038	1.00	1.00	1.00	1.00	4.00	4.00	4.00	4.00
2039	1.00	1.00	1.00	1.00	4.00	4.00	4.00	4.00
2040	1.00	1.00	1.00	1.00	4.00	4.00	4.00	4.00
2041	1.00	1.00	1.00	1.00	4.00	4.00	4.00	4.00
2042	1.00	1.00	1.00	1.00	4.00	4.00	4.00	4.00

TABLE 6.3 - 41 (cont)
Present Value Analysis
Selected Alternative Analysis

$1 Million Total Expenditure Per Year
Beginning in Year 1993

DISCOUNT RATE:	3 %
PERIOD	50 YEARS

		F1	F2	F3	F4	F5	F6	F7	F8
CAPITAL COST	($MM/REACH)	0.9795	12.98785	11.2862	2.288	4.0119	6.82	5.7737	1.6167
PROJECT YEARS		50	50	50	50	50	50	50	50
COST PER YEAR	($MM/REACH)	0.020	0.260	0.226	0.046	0.080	0.136	0.115	0.032
Analysis									

Capital Cost (1993 $MM DOLLARS)

YEAR	F1	F2	F3	F4	F5	F6	F7	F8
1993	0.020	0.260	0.226	0.046	0.080	0.136	0.115	0.032
1994	0.020	0.260	0.226	0.046	0.080	0.136	0.115	0.032
1995	0.020	0.260	0.226	0.046	0.080	0.136	0.115	0.032
1996	0.020	0.260	0.226	0.046	0.080	0.136	0.115	0.032
1997	0.020	0.260	0.226	0.046	0.080	0.136	0.115	0.032
1998	0.020	0.260	0.226	0.046	0.080	0.136	0.115	0.032
1999	0.020	0.260	0.226	0.046	0.080	0.136	0.115	0.032
2000	0.020	0.260	0.226	0.046	0.080	0.136	0.115	0.032
2001	0.020	0.260	0.226	0.046	0.080	0.136	0.115	0.032
2002	0.020	0.260	0.226	0.046	0.080	0.136	0.115	0.032
2003	0.020	0.260	0.226	0.046	0.080	0.136	0.115	0.032
2004	0.020	0.260	0.226	0.046	0.080	0.136	0.115	0.032
2005	0.020	0.260	0.226	0.046	0.080	0.136	0.115	0.032
2006	0.020	0.260	0.226	0.046	0.080	0.136	0.115	0.032
2007	0.020	0.260	0.226	0.046	0.080	0.136	0.115	0.032
2008	0.020	0.260	0.226	0.046	0.080	0.136	0.115	0.032
2009	0.020	0.260	0.226	0.046	0.080	0.136	0.115	0.032
2010	0.020	0.260	0.226	0.046	0.080	0.136	0.115	0.032
2011	0.020	0.260	0.226	0.046	0.080	0.136	0.115	0.032
2012	0.020	0.260	0.226	0.046	0.080	0.136	0.115	0.032
2013	0.020	0.260	0.226	0.046	0.080	0.136	0.115	0.032
2014	0.020	0.260	0.226	0.046	0.080	0.136	0.115	0.032
2015	0.020	0.260	0.226	0.046	0.080	0.136	0.115	0.032
2016	0.020	0.260	0.226	0.046	0.080	0.136	0.115	0.032
2017	0.020	0.260	0.226	0.046	0.080	0.136	0.115	0.032
2018	0.020	0.260	0.226	0.046	0.080	0.136	0.115	0.032
2019	0.020	0.260	0.226	0.046	0.080	0.136	0.115	0.032
2020	0.020	0.260	0.226	0.046	0.080	0.136	0.115	0.032
2021	0.020	0.260	0.226	0.046	0.080	0.136	0.115	0.032
2022	0.020	0.260	0.226	0.046	0.080	0.136	0.115	0.032
2023	0.020	0.260	0.226	0.046	0.080	0.136	0.115	0.032
2024	0.020	0.260	0.226	0.046	0.080	0.136	0.115	0.032
2025	0.020	0.260	0.226	0.046	0.080	0.136	0.115	0.032
2026	0.020	0.260	0.226	0.046	0.080	0.136	0.115	0.032
2027	0.020	0.260	0.226	0.046	0.080	0.136	0.115	0.032
2028	0.020	0.260	0.226	0.046	0.080	0.136	0.115	0.032
2029	0.020	0.260	0.226	0.046	0.080	0.136	0.115	0.032
2030	0.020	0.260	0.226	0.046	0.080	0.136	0.115	0.032
2031	0.020	0.260	0.226	0.046	0.080	0.136	0.115	0.032
2032	0.020	0.260	0.226	0.046	0.080	0.136	0.115	0.032
2033	0.020	0.260	0.226	0.046	0.080	0.136	0.115	0.032
2034	0.020	0.260	0.226	0.046	0.080	0.136	0.115	0.032
2035	0.020	0.260	0.226	0.046	0.080	0.136	0.115	0.032
2036	0.020	0.260	0.226	0.046	0.080	0.136	0.115	0.032
2037	0.020	0.260	0.226	0.046	0.080	0.136	0.115	0.032
2038	0.020	0.260	0.226	0.046	0.080	0.136	0.115	0.032
2039	0.020	0.260	0.226	0.046	0.080	0.136	0.115	0.032
2040	0.020	0.260	0.226	0.046	0.080	0.136	0.115	0.032
2041	0.020	0.260	0.226	0.046	0.080	0.136	0.115	0.032
2042	0.020	0.260	0.226	0.046	0.080	0.136	0.115	0.032

TABLE 6.3 - 41 (cont)
Present Value Analysis
Selected Alternative Analysis

$1 Million Total Expenditure Per Year
Beginning in Year 1993

Values Presented in 1993 Dollars
P=F(1+i)^-n

Year	P.V. of Capital	P.V. of O & M	P.V. of Total	P.V. of 1 $MM/Year 1993$	Present Value < 1 Million
1993	0.8886	87,670	$976,288	970,874	o.k.
1994	0.8627	85,116	$947,853	942,596	o.k.
1995	0.8376	82,637	$920,245	915,142	o.k.
1996	0.8132	80,230	$893,442	888,487	o.k.
1997	0.7895	77,894	$867,420	862,609	o.k.
1998	0.7665	75,625	$842,155	837,484	o.k.
1999	0.7442	73,422	$817,626	813,092	o.k.
2000	0.7225	71,284	$793,812	789,409	o.k.
2001	0.7015	69,207	$770,691	766,417	o.k.
2002	0.6811	67,192	$748,244	744,094	o.k.
2003	0.6612	65,235	$726,450	722,421	o.k.
2004	0.6420	63,335	$705,291	701,380	o.k.
2005	0.6233	61,490	$684,749	680,951	o.k.
2006	0.6051	59,699	$664,805	661,118	o.k.
2007	0.5875	57,960	$645,442	641,862	o.k.
2008	0.5704	56,272	$626,642	623,167	o.k.
2009	0.5538	54,633	$608,391	605,016	o.k.
2010	0.5376	53,042	$590,671	587,395	o.k.
2011	0.5220	51,497	$573,467	570,286	o.k.
2012	0.5068	49,997	$556,764	553,676	o.k.
2013	0.4920	48,541	$540,547	537,549	o.k.
2014	0.4777	47,127	$524,803	521,893	o.k.
2015	0.4638	45,754	$509,518	506,692	o.k.
2016	0.4503	44,422	$494,677	491,934	o.k.
2017	0.4371	43,128	$480,269	477,606	o.k.
2018	0.4244	41,872	$466,281	463,695	o.k.
2019	0.4120	40,652	$452,700	450,189	o.k.
2020	0.4000	39,468	$439,514	437,077	o.k.
2021	0.3884	38,318	$426,713	424,346	o.k.
2022	0.3771	37,202	$414,284	411,987	o.k.
2023	0.3661	36,119	$402,218	399,987	o.k.
2024	0.3554	35,067	$390,503	388,337	o.k.
2025	0.3451	34,045	$379,129	377,026	o.k.
2026	0.3350	33,054	$368,086	366,045	o.k.
2027	0.3253	32,091	$357,365	355,383	o.k.
2028	0.3158	31,156	$346,957	345,032	o.k.
2029	0.3066	30,249	$336,851	334,983	o.k.
2030	0.2977	29,368	$327,040	325,226	o.k.
2031	0.2890	28,513	$317,515	315,754	o.k.
2032	0.2806	27,682	$308,267	306,557	o.k.
2033	0.2724	26,876	$299,288	297,628	o.k.
2034	0.2645	26,093	$290,571	288,959	o.k.
2035	0.2568	25,333	$282,108	280,543	o.k.
2036	0.2493	24,595	$273,891	272,372	o.k.
2037	0.2420	23,879	$265,913	264,439	o.k.
2038	0.2350	23,183	$258,168	256,737	o.k.
2039	0.2281	22,508	$250,649	249,259	o.k.
2040	0.2215	21,852	$243,348	241,999	o.k.
2041	0.2150	21,216	$236,261	234,950	o.k.
2042	0.2088	20,598	$229,379	228,107	o.k.

TABLE 6.3-42
PRESENT VALUE ANALYSIS
SELECTED ALTERNATIVE ANALYSIS,
$1 MILLION TOTAL EXPENDITURE PER YEAR BEGINNING IN YEAR 1998

TABLE 6.3 - 42
Present Value Analysis
Selected Alternative Analysis

$1 Million Total Expenditure Per Year
Beginning in Year 1998
Summary

		F1	F2	F3	F4	F5	F6	F7	F8
Present Value O & M	$/lf	132.30	113.98	91.08	81.92	268.15	236.09	194.88	199.46
Reach Length	lf	3500	11600	4400	3600	3700	4950	6550	1600
Present Value O & M	$	463,046	1,322,167	400,758	294,919	992,161	1,168,664	1,276,440	319,130
Present Value Capital/Reach	$	438,537	5,814,857	5,053,003	1,024,372	1,796,188	3,053,417	2,584,973	723,821
Present Value Alternative	$	901,583	7,137,024	5,453,761	1,319,291	2,788,349	4,222,081	3,861,413	1,042,951

DISCOUNT RATE: 3 % ASSUMED
PERIOD 50 YEARS

Selected Alternative		**Alt 4**	**Alt 5**	**Alt 5**	**Alt 4**	**Alt 4**	**Alt 3**	**Alt 4**	**Alt 2**
		Operation And Maintenance (O & M) Cost, $/LF (1993 DOLLARS)							
YEAR		F1	F2	F3	F4	F5	F6	F7	F8
1993		24.00	20.00	15.00	13.00	39.00	32.00	23.00	24.00
1994		24.00	20.00	15.00	13.00	39.00	32.00	23.00	24.00
1995		24.00	20.00	15.00	13.00	39.00	32.00	23.00	24.00
1996		24.00	20.00	15.00	13.00	39.00	32.00	23.00	24.00
1997		24.00	20.00	15.00	13.00	39.00	32.00	23.00	24.00
1998		1.00	1.00	1.00	1.00	4.00	4.00	4.00	4.00
1999		1.00	1.00	1.00	1.00	4.00	4.00	4.00	4.00
2000		1.00	1.00	1.00	1.00	4.00	4.00	4.00	4.00
2001		1.00	1.00	1.00	1.00	4.00	4.00	4.00	4.00
2002		1.00	1.00	1.00	1.00	4.00	4.00	4.00	4.00
2003		1.00	1.00	1.00	1.00	4.00	4.00	4.00	4.00
2004		1.00	1.00	1.00	1.00	4.00	4.00	4.00	4.00
2005		1.00	1.00	1.00	1.00	4.00	4.00	4.00	4.00
2006		1.00	1.00	1.00	1.00	4.00	4.00	4.00	4.00
2007		1.00	1.00	1.00	1.00	4.00	4.00	4.00	4.00
2008		1.00	1.00	1.00	1.00	4.00	4.00	4.00	4.00
2009		1.00	1.00	1.00	1.00	4.00	4.00	4.00	4.00
2010		1.00	1.00	1.00	1.00	4.00	4.00	4.00	4.00
2011		1.00	1.00	1.00	1.00	4.00	4.00	4.00	4.00
2012		1.00	1.00	1.00	1.00	4.00	4.00	4.00	4.00
2013		1.00	1.00	1.00	1.00	4.00	4.00	4.00	4.00
2014		1.00	1.00	1.00	1.00	4.00	4.00	4.00	4.00
2015		1.00	1.00	1.00	1.00	4.00	4.00	4.00	4.00
2016		1.00	1.00	1.00	1.00	4.00	4.00	4.00	4.00
2017		1.00	1.00	1.00	1.00	4.00	4.00	4.00	4.00
2018		1.00	1.00	1.00	1.00	4.00	4.00	4.00	4.00
2019		1.00	1.00	1.00	1.00	4.00	4.00	4.00	4.00
2020		1.00	1.00	1.00	1.00	4.00	4.00	4.00	4.00
2021		1.00	1.00	1.00	1.00	4.00	4.00	4.00	4.00
2022		1.00	1.00	1.00	1.00	4.00	4.00	4.00	4.00
2023		1.00	1.00	1.00	1.00	4.00	4.00	4.00	4.00
2024		1.00	1.00	1.00	1.00	4.00	4.00	4.00	4.00
2025		1.00	1.00	1.00	1.00	4.00	4.00	4.00	4.00
2026		1.00	1.00	1.00	1.00	4.00	4.00	4.00	4.00
2027		1.00	1.00	1.00	1.00	4.00	4.00	4.00	4.00
2028		1.00	1.00	1.00	1.00	4.00	4.00	4.00	4.00
2029		1.00	1.00	1.00	1.00	4.00	4.00	4.00	4.00
2030		1.00	1.00	1.00	1.00	4.00	4.00	4.00	4.00
2031		1.00	1.00	1.00	1.00	4.00	4.00	4.00	4.00
2032		1.00	1.00	1.00	1.00	4.00	4.00	4.00	4.00
2033		1.00	1.00	1.00	1.00	4.00	4.00	4.00	4.00
2034		1.00	1.00	1.00	1.00	4.00	4.00	4.00	4.00
2035		1.00	1.00	1.00	1.00	4.00	4.00	4.00	4.00
2036		1.00	1.00	1.00	1.00	4.00	4.00	4.00	4.00
2037		1.00	1.00	1.00	1.00	4.00	4.00	4.00	4.00
2038		1.00	1.00	1.00	1.00	4.00	4.00	4.00	4.00
2039		1.00	1.00	1.00	1.00	4.00	4.00	4.00	4.00
2040		1.00	1.00	1.00	1.00	4.00	4.00	4.00	4.00
2041		1.00	1.00	1.00	1.00	4.00	4.00	4.00	4.00
2042		1.00	1.00	1.00	1.00	4.00	4.00	4.00	4.00
2043		1.00	1.00	1.00	1.00	4.00	4.00	4.00	4.00
2044		1.00	1.00	1.00	1.00	4.00	4.00	4.00	4.00
2045		1.00	1.00	1.00	1.00	4.00	4.00	4.00	4.00
2046		1.00	1.00	1.00	1.00	4.00	4.00	4.00	4.00
2047		1.00	1.00	1.00	1.00	4.00	4.00	4.00	4.00
2048		1.00	1.00	1.00	1.00	4.00	4.00	4.00	4.00

TABLE 6.3 - 42 (cont)
Present Value Analysis
Selected Alternative Analysis

$1 Million Total Expenditure Per Year
Beginning in Year 1998

DISCOUNT RATE:	3 %	
PERIOD	50 YEARS	

		F1	F2	F3	F4	F5	F6	F7	F8
CAPITAL COST	($MM/REACH)	0.9795	12.98785	11.2862	2.288	4.0119	6.82	5.7737	1.6167
PROJECT YEARS		50	50	50	50	50	50	50	50
COST PER YEAR	($MM/REACH)	0.020	0.260	0.226	0.046	0.080	0.136	0.115	0.032
Analysis									

Capital Cost (1993 $MM DOLLARS)

YEAR	F1	F2	F3	F4	F5	F6	F7	F8
1993	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
1994	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
1995	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
1996	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
1997	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
1998	0.020	0.260	0.226	0.046	0.080	0.136	0.115	0.032
1999	0.020	0.260	0.226	0.046	0.080	0.136	0.115	0.032
2000	0.020	0.260	0.226	0.046	0.080	0.136	0.115	0.032
2001	0.020	0.260	0.226	0.046	0.080	0.136	0.115	0.032
2002	0.020	0.260	0.226	0.046	0.080	0.136	0.115	0.032
2003	0.020	0.260	0.226	0.046	0.080	0.136	0.115	0.032
2004	0.020	0.260	0.226	0.046	0.080	0.136	0.115	0.032
2005	0.020	0.260	0.226	0.046	0.080	0.136	0.115	0.032
2006	0.020	0.260	0.226	0.046	0.080	0.136	0.115	0.032
2007	0.020	0.260	0.226	0.046	0.080	0.136	0.115	0.032
2008	0.020	0.260	0.226	0.046	0.080	0.136	0.115	0.032
2009	0.020	0.260	0.226	0.046	0.080	0.136	0.115	0.032
2010	0.020	0.260	0.226	0.046	0.080	0.136	0.115	0.032
2011	0.020	0.260	0.226	0.046	0.080	0.136	0.115	0.032
2012	0.020	0.260	0.226	0.046	0.080	0.136	0.115	0.032
2013	0.020	0.260	0.226	0.046	0.080	0.136	0.115	0.032
2014	0.020	0.260	0.226	0.046	0.080	0.136	0.115	0.032
2015	0.020	0.260	0.226	0.046	0.080	0.136	0.115	0.032
2016	0.020	0.260	0.226	0.046	0.080	0.136	0.115	0.032
2017	0.020	0.260	0.226	0.046	0.080	0.136	0.115	0.032
2018	0.020	0.260	0.226	0.046	0.080	0.136	0.115	0.032
2019	0.020	0.260	0.226	0.046	0.080	0.136	0.115	0.032
2020	0.020	0.260	0.226	0.046	0.080	0.136	0.115	0.032
2021	0.020	0.260	0.226	0.046	0.080	0.136	0.115	0.032
2022	0.020	0.260	0.226	0.046	0.080	0.136	0.115	0.032
2023	0.020	0.260	0.226	0.046	0.080	0.136	0.115	0.032
2024	0.020	0.260	0.226	0.046	0.080	0.136	0.115	0.032
2025	0.020	0.260	0.226	0.046	0.080	0.136	0.115	0.032
2026	0.020	0.260	0.226	0.046	0.080	0.136	0.115	0.032
2027	0.020	0.260	0.226	0.046	0.080	0.136	0.115	0.032
2028	0.020	0.260	0.226	0.046	0.080	0.136	0.115	0.032
2029	0.020	0.260	0.226	0.046	0.080	0.136	0.115	0.032
2030	0.020	0.260	0.226	0.046	0.080	0.136	0.115	0.032
2031	0.020	0.260	0.226	0.046	0.080	0.136	0.115	0.032
2032	0.020	0.260	0.226	0.046	0.080	0.136	0.115	0.032
2033	0.020	0.260	0.226	0.046	0.080	0.136	0.115	0.032
2034	0.020	0.260	0.226	0.046	0.080	0.136	0.115	0.032
2035	0.020	0.260	0.226	0.046	0.080	0.136	0.115	0.032
2036	0.020	0.260	0.226	0.046	0.080	0.136	0.115	0.032
2037	0.020	0.260	0.226	0.046	0.080	0.136	0.115	0.032
2038	0.020	0.260	0.226	0.046	0.080	0.136	0.115	0.032
2039	0.020	0.260	0.226	0.046	0.080	0.136	0.115	0.032
2040	0.020	0.260	0.226	0.046	0.080	0.136	0.115	0.032
2041	0.020	0.260	0.226	0.046	0.080	0.136	0.115	0.032
2042	0.020	0.260	0.226	0.046	0.080	0.136	0.115	0.032
2043	0.020	0.260	0.226	0.046	0.080	0.136	0.115	0.032
2044	0.020	0.260	0.226	0.046	0.080	0.136	0.115	0.032
2045	0.020	0.260	0.226	0.046	0.080	0.136	0.115	0.032
2046	0.020	0.260	0.226	0.046	0.080	0.136	0.115	0.032
2047	0.020	0.260	0.226	0.046	0.080	0.136	0.115	0.032
2048	0.020	0.260	0.226	0.046	0.080	0.136	0.115	0.032

TABLE 6.3 - 42 (cont)
Present Value Analysis
Selected Alternative Analysis

$1 Million Total Expenditure Per Year
Beginning in Year 1998

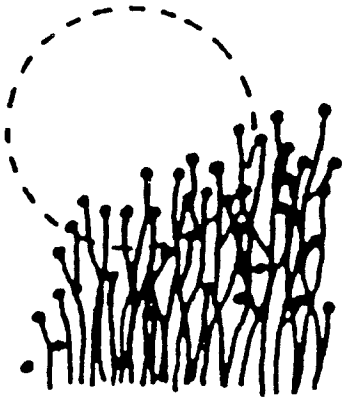
Values Presented in 1993 Dollars
P=F(1+i)^-n

Year	P.V. of Capital	P.V. of O & M	P.V. of Total	P.V. of 1 $MM/Year 1993$	Present Value < 1 Million
1993	0.0000	893,738	$893,738	970,874	o.k.
1994	0.0000	867,707	$867,707	942,596	o.k.
1995	0.0000	842,434	$842,434	915,142	o.k.
1996	0.0000	817,897	$817,897	888,487	o.k.
1997	0.0000	794,075	$794,075	862,609	o.k.
1998	0.7665	75,625	$842,155	837,484	o.k.
1999	0.7442	73,422	$817,626	813,092	o.k.
2000	0.7225	71,284	$793,812	789,409	o.k.
2001	0.7015	69,207	$770,691	766,417	o.k.
2002	0.6811	67,192	$748,244	744,094	o.k.
2003	0.6612	65,235	$726,450	722,421	o.k.
2004	0.6420	63,335	$705,291	701,380	o.k.
2005	0.6233	61,490	$684,749	680,951	o.k.
2006	0.6051	59,699	$664,805	661,118	o.k.
2007	0.5875	57,960	$645,442	641,862	o.k.
2008	0.5704	56,272	$626,642	623,167	o.k.
2009	0.5538	54,633	$608,391	605,016	o.k.
2010	0.5376	53,042	$590,671	587,395	o.k.
2011	0.5220	51,497	$573,467	570,286	o.k.
2012	0.5068	49,997	$556,764	553,676	o.k.
2013	0.4920	48,541	$540,547	537,549	o.k.
2014	0.4777	47,127	$524,803	521,893	o.k.
2015	0.4638	45,754	$509,518	506,692	o.k.
2016	0.4503	44,422	$494,677	491,934	o.k.
2017	0.4371	43,128	$480,269	477,606	o.k.
2018	0.4244	41,872	$466,281	463,695	o.k.
2019	0.4120	40,652	$452,700	450,189	o.k.
2020	0.4000	39,468	$439,514	437,077	o.k.
2021	0.3884	38,318	$426,713	424,346	o.k.
2022	0.3771	37,202	$414,284	411,987	o.k.
2023	0.3661	36,119	$402,218	399,987	o.k.
2024	0.3554	35,067	$390,503	388,337	o.k.
2025	0.3451	34,045	$379,129	377,026	o.k.
2026	0.3350	33,054	$368,086	366,045	o.k.
2027	0.3253	32,091	$357,365	355,383	o.k.
2028	0.3158	31,156	$346,957	345,032	o.k.
2029	0.3066	30,249	$336,851	334,983	o.k.
2030	0.2977	29,368	$327,040	325,226	o.k.
2031	0.2890	28,513	$317,515	315,754	o.k.
2032	0.2806	27,682	$308,267	306,557	o.k.
2033	0.2724	26,876	$299,288	297,628	o.k.
2034	0.2645	26,093	$290,571	288,959	o.k.
2035	0.2568	25,333	$282,108	280,543	o.k.
2036	0.2493	24,595	$273,891	272,372	o.k.
2037	0.2420	23,879	$265,913	264,439	o.k.
2038	0.2350	23,183	$258,168	256,737	o.k.
2039	0.2281	22,508	$250,649	249,259	o.k.
2040	0.2215	21,852	$243,348	241,999	o.k.
2041	0.2150	21,216	$236,261	234,950	o.k.
2042	0.2088	20,598	$229,379	228,107	o.k.
2043	0.2027	19,998	$222,698	221,463	o.k.
2044	0.1968	19,416	$216,212	215,013	o.k.
2045	0.1911	18,850	$209,914	208,750	o.k.
2046	0.1855	18,301	$203,800	202,670	o.k.
2047	0.1801	17,768	$197,865	196,767	o.k.
2048	0.1749	17,251	$192,101	191,036	o.k.

APPENDIX E

MISCELLANEOUS

NEWSLETTER
PROGRESS REPORTS #1 - OCTOBER 1991



The Future of Monument and Fountain Creeks

Progress Report #1
October 1991

A report to the community on planning for stormwater management, resource protection, recreation and community development for the Monument Creek/ Fountain Creek Basins in Colorado Springs

Submitted by:
City Engineering Division (Contact Ken Sampley, 578-6606) and City Comprehensive Planning Division (Contact Craig Blewitt, 578-6692)
The City of Colorado Springs

Edited by:
Robert M. Searns for CH2MHILL, Inc.

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What are the Creek Basin Studies and Why is the City Pursuing These Studies?

The Planning Process

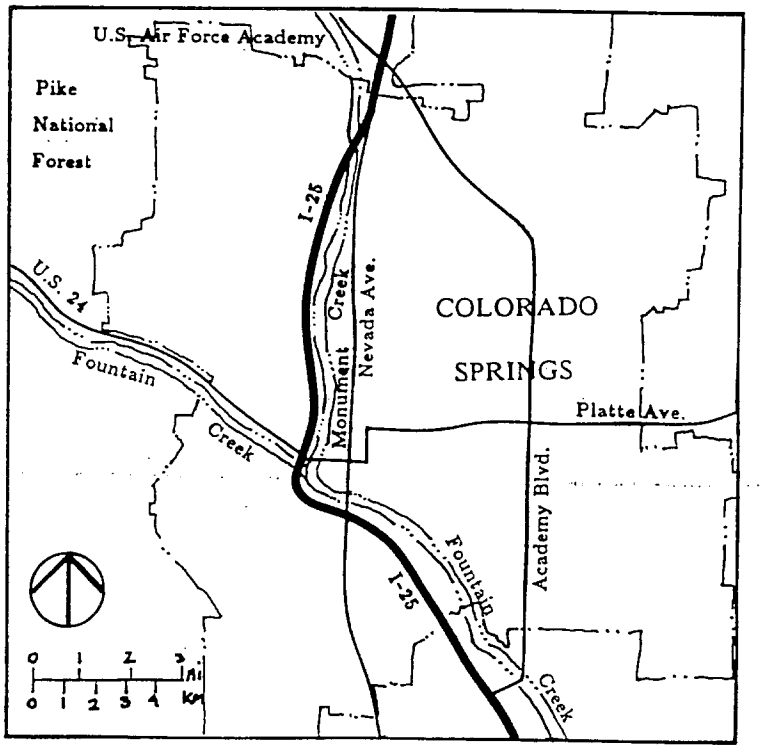
The process will address an 11-mile reach of Monument Creek and a 7-mile reach of Fountain Creek, with combined watersheds of 420 square miles. The objective of the plan is to address the safe conveyance of floodwater and to balance this need with other community objectives. These other objectives include: water quality, wildlife, open space, transportation and aesthetics. The plan will also consider the role of Monument Creek, I-25 and the surrounding properties in shaping the future character of Colorado Springs. A similar plan is being pursued at the same time along Fountain Creek and the findings of each plan will be coordinated into a comprehensive vision for these two major drainage systems.

The plan is being carried out as a joint venture between the City Engineering Division and the City Comprehensive Planning Division. Consulting services on Monument Creek are being provided under the direction of **CH2MHILL, Inc.** (engineering) in association with **Kiowa Engineering, Inc.** (engineering); **Thomas and Thomas, Inc.** (landscape architecture); **Urban Edges, Inc.** (multi-objective planning); and **Erik Olgeirson, Ph.D.** (ecologist). Consulting services on Fountain Creek are being provided under the direction of Muller Engineering, Inc. (engineering); Obering, Wurth & Associates (engineering); Thomas and Thomas (landscape architecture); Aquatic and Wetland Consultants, Inc. (ecology); and Geotechnical Consultants, Inc. (geology).

(continued on following page)

Why It's Needed

The Monument Creek and Fountain Creek Basins have a history of flooding, erosion and other problems associated with stormwater runoff. This fast-moving and sometimes violent flow of stormwater can threaten homes, businesses, bridges, utility pipes and other public and private infrastructure. More importantly, lives can be at stake. First and foremost, we have a legal obligation to safely manage storm runoff to minimize the damage and dangers. This management process includes both planning to limit development in flood-prone areas and structural measures which can help contain and convey water in a manner which causes the least damage.



However, there are other important integral considerations. Rivers and streams are a vital, yet endangered American resource. Although at times channelization and similar measures are necessary, the indiscriminate use of such can result in loss of stream habitat and wetland areas. Besides being places of beauty and solace, these areas sustain an overwhelming proportion of our wildlife. Fully, 75% of North American bird species depend on wetlands and stream corridors for survival—not to mention numerous mammals, fish and other species.

We also have a legal obligation to address water quality. In November of 1990, The U.S. Environmental Protection Agency published regulations addressing stormwater runoff. Now, we must address not only pollution from outlet pipes but from stormwater that runs off our streets, yards and roofs. This is most effectively done through well-planned stormwater management practices. Colorado Springs is required by federal law to pursue these pollution-reduction policies and practices.

This planning process is also tied to the U.S. Army Corps of Engineers review process under Section 404 of the U.S. Clean Water Act. (P.L. 92-500). The process includes a "Letter of Permission" (LOP) which requires a thorough look at environmental as well as storm drainage issues.

Finally, there is an opportunity to transform once troublesome streams into major urban recreational amenities—attractive places to hike, bicycle, explore nature and otherwise enjoy the outdoors close to home. While it must be recognized that stream corridors now exist within an urban setting and as such cannot be kept totally natural, attractive stream corridors can still be a focal point for quality urban redevelopment benefiting the community in many ways.

Lively Discussion and Many Great Ideas Expressed at the First Public Meeting

The First Public Meeting in this planning process was held on the evening of September 12, 1991. There were over 40 people in attendance. The meeting began with presentations by Gary Haynes, Ken Sampley and Craig Blewitt of the city staff describing the upcoming planning effort in both the Monument and Fountain Creek basins. Jon Sorensen and Jim Wulliman of CH2MHILL presented slides depicting some of the flooding and erosion problems along Monument Creek. Robert Searns of Urban Edges discussed the concept of multi-objective stream planning.

Following the presentations by staff and consultants, the meeting participants discussed visions for the future of the Monument and Fountain Creek corridors. Everyone seemed to recognize that flood damage reduction was also a key objective. Most people commenting called for a multi-objective approach. Preferred concepts included: resource preservation, trails (at least a minimum trail system to provide access and appreciation), recreation facilities, interpretive areas, systems of linear parks, quality redevelopment in the area and, where possible, "soft" (as opposed to "hard") structural treatment.

In addition to not wanting "hardscape" solutions, concerns were expressed about air and water pollution, widening of I-25 to eight lanes and trails being located too close to back yards. One notable suggestion called for "testing" each stream planning proposal for its consistency with multi-objective benefits such as wildlife preservation and recreation.

The discussion then turned to the economic and political considerations in implementing a multi-objective plan. People felt that a multi-objective stream corridor offered many economic benefits including increased property values, community redevelopment and tourism. They felt it was important to build a constituency of supporters for the project. Non-profit donations, military labor and volunteer projects were also cited as a way to implement projects.

Your Comments and Suggestions are Always Welcome

While we had a great turn-out at the first public meeting and many good suggestions, we always welcome additional comments and ideas. Please feel free to send your remarks to the attention of:

Mr. Ken Sampley, Civil Engineer Supervisor
or
Mr. Craig Blewitt, Senior Planner
c/o City of Colorado Springs
P.O. Box 1575 Mail Code 311
Colorado Springs, CO 80901-9983

Thanks for your participation in this exciting process!

Where We Will Go Next

The next step in the process includes an inventory of the creek corridor and the formulation of policies which will guide the planning process. The inventory will involve both touring the stream corridor and gathering technical data. The planning team will investigate such items as:

- Past and likely future flooding problems
- Erosion of the stream banks and stream bottom
- Risks to life and property posed by flooding
- The condition of the stream corridor as habitat for wildlife
- Opportunities for recreational and aesthetic benefits
- Water quality
- Future development opportunities along the corridor
- Land ownership and the needs of adjacent property owners
- What the community would like to see happen in the creek corridor

The study team will also develop planning guidelines. These guidelines will be developed by a multi-disciplinary team which will include engineers, planners, wildlife experts, environmental experts, landscape architects and other specialists. Representatives of citizen groups will also play a key role in shaping the guidelines and, ultimately, the plan.

The process also includes a field tour of the stream corridors, held on October 10, and attended by both the technical staff and citizens group representatives.

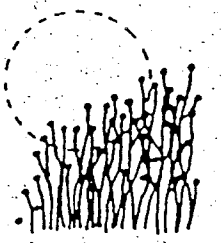
These guidelines will attempt to reconcile flood damage reduction objectives with the goal of preserving and enhancing the stream corridor as an important natural resource and recreational amenity. We will begin with the comments provided by the citizen participants at the September 12, 1991 public meeting and refine these in view of technical, economic, legal and political considerations. We will pursue the latest planning and engineering techniques which stress stream resource preservation and enhancement.

The findings of the inventory and the draft policy statements will be presented at the Second Public Meeting, tentatively scheduled for January 1992. We hope to have draft planning reports which address the range of considerations involved by March 1992, and a final plan in December 1992. These will also be presented for public review and comment. Please watch for announcements of upcoming public workshops.

City of Colorado Springs
P.O. Box 1575, Mail Code 311
Colorado Springs, CO 80901-9983

NEWSLETTER
PROGRESS REPORTS #2 - APRIL 1993

The Future of Monument Creek



Progress Report #2
April 1993

A report to the community on planning for stormwater management, resource protection, recreation, and community development for the Monument/Fountain Creek Drainage basin .

Draft Plans Ready for Review!

Draft Plans have been completed for the Monument and Fountain Creek Drainage Basin Planning Studies and the Pikes Peak Greenway. These Plans will be presented for public review and comment at a public meeting scheduled for May 11, 1993, 7:00 - 9:30 P.M. at the West Center for Intergenerational Learning.

Public Meeting Scheduled - May 11, 1993
7:00 - 9:30 P.M.
West Center for Intergenerational Learning
25 North 20th Street

Public input is essential to good planning. Your attendance and comments are welcome and encouraged.

Project Overview

Drainage Basin Planning Studies are being prepared for Monument Creek and Fountain Creek. These studies are being done in conjunction with the Pikes Peak Greenway Master Plan, a comprehensive plan for the north-south Monument/Fountain Creek corridor. The objective of the combined projects is to address the safe conveyance of floodwater and to balance this need with other community objectives for the creek corridors. These other objectives include water quality, wildlife habitat, open space, transportation, recreation, and aesthetics.

Public input is playing a critical role in identifying the problems to be addressed by the Plan, as well as recommended solutions. A Technical Advisory Committee was formed, and consists of representatives from various citizen interest groups and federal, state, and local resource agencies. This Committee has acted as a steering group to help identify problems, formulate goals and objectives, develop a range of alternative solutions, and evaluate the alternatives. The Draft Plans to be presented on May 11th are the product of this committee process.

We've Been Busy!

Inventory and Analysis

We have inventoried the existing conditions. These include: normal water flow and flooding characteristics, wildlife and vegetation, geomorphology (how the creek flows through surrounding landscapes), historic and cultural elements, land use, and recreational elements.

Goals and Objectives

- **Assure Public Safety and Welfare**
- **Protect and Enhance Aquatic and Ecosystems.**
- **Maintain and Enhance the Natural Beauty and the Quality of the Built Environment.**
- **Aid in Control of Pollution/ Enhance Water Quality.**
- **Maintain a High Level of Benefit to Cost.**
- **Promote Community Development**
- **Provide Recreational and Social Benefits.**

These goals were developed with the assistance of the Technical Advisory Committee. They also reflect the community values as expressed at the 1990 Colorado Springs Stormwater Management Workshop.

Opportunities, Constraints, and Alternative Development

For evaluation purposes, we have divided the Monument and Fountain Creek corridors into segments (called reaches) for purposes of analysis and planning. Monument Creek has been divided into seven (7) reaches and Fountain Creek into eight (8) reaches. Based upon the characteristics of the Creek corridors and the desired achievement of the Goals and Objectives, the following kinds of opportunities and constraints were defined.

Why is improving the Monument-Fountain Creek/I-25 Corridor important?

- Over 80,000 people travel along I-25 on a daily basis, many of whom are tourists getting their first impressions of Colorado Springs.
- Monument and Fountain Creeks carry the bulk of the storm water runoff generated within the Colorado Springs urban area.
- The main spine of the planned city-wide trails network runs along Monument and Fountain Creeks. All other existing and planned trails will feed into this primary trail corridor. When completed, the spine trail will serve non-motorized commuters and a growing number of recreational trail users.
- As the western and southern edge of the City's downtown, a major portion of the creek corridor is integral to the proposed "Park Ring" surrounding the Downtown as recommended by the Downtown Action Plan.
- The continuous stream flows and the large areas of remaining riparian vegetation support a diverse array of mammals, amphibians and reptiles, and birds making the creek corridor one of the city's most important wildlife habitats.

Examples of Opportunities:

- **storm water runoff conveyance**
- **continuous stream flow**
- **existing wildlife habitat and other environmentally important areas deserving protection**
- **potential park sites and landscaping opportunities**
- **potential continuous multi-use trail**
- **urban redevelopment opportunities**

Examples of Constraints:

- **severe creek bed and bank erosion at many locations.**
- **extensive dumping of debris within the floodplain and within view of the creeks**
- **extensive channel relocation and floodplain encroachment.**
- **utilities and roads threatened by erosion and flooding.**
- **structures in the channel which restrict flood flows.**
- **the mobile and dynamic nature of the creek.**

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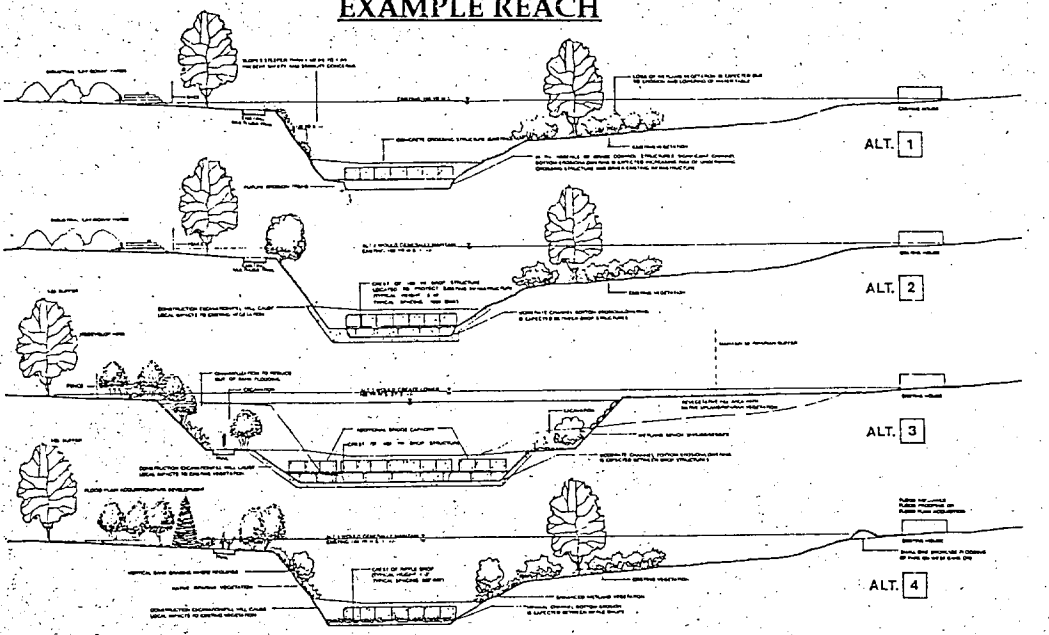
Alternative Development

The City and Consultant Team worked closely with the Study Group to refine a full range of development alternatives for each of the reaches. Three to four alternatives were developed for each reach. Generally, these alternatives may be categorized as follows:

Alternative 1 - No Action - Provides a baseline condition for alternative comparison.
Alternative 2 - Reactive Strategy - Action is oriented toward protecting existing infrastructure such as bridges and utility crossings endangered by undermining as a result of creek channel degradation.
Alternative 3 - Pro-active Strategy - Utilize conventional drop structures and bank stabilization to fully stabilize the entire creek corridor.
Alternative 4 - Pro-active Strategy with Ecological Restoration - Fully stabilize the creek channel utilizing naturalistic riffle drop structures enhanced with wetland and riparian vegetation.

EXAMPLE REACH



Where Will the Process Go Next?

The preliminary drafts of all three plans are now complete. We wish to present our ideas to you and elicit your input so we can proceed with the final phase of completion. Through the Summer and Fall, the plans will be presented to Citizen Groups, the Drainage Board, the Parks and Recreation Advisory Board, the City Planning Commission, and City Council for their consideration and formal adoption. Following this Public Meeting your comments will be evaluated and integrated into the final plans as appropriate.

Your Comments and Suggestions are Always Welcome

Please feel free to send your remarks to the attention of:

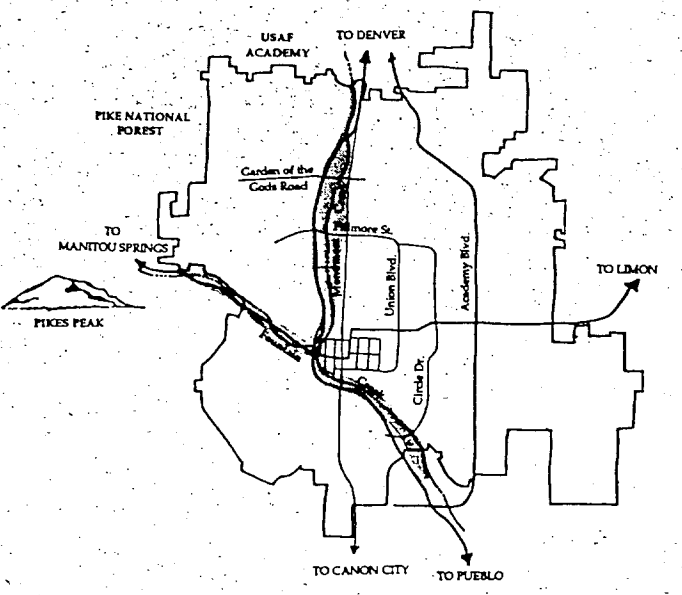
Mr. Ken Sampley, Civil Engineer Supervisor
or
Mr. Craig Blewitt, Senior Planner
c/o City of Colorado Springs
(719) 578-6834
P.O. Box 1575, Mail Code 350
Colorado Springs, CO 80901-9983

Thanks for your participation in this exciting process!

IMPORTANT PUBLIC MEETING CONCERNING YOUR ENVIRONMENT:

The Monument Creek Drainage Basin Planning Study
The Fountain Creek Drainage Basin Planning Study
The Pikes Peak Greenway Master Plan

Public Meeting Scheduled - May 11, 1993 7:00 - 9:30 P.M. West Center for Intergenerational Learning 25 North 20th Street



City of Colorado Springs
Comprehensive Planning Division
30 South Nevada Avenue, Suite 305
P.O. Box 1575, MC 350
Colorado Springs, CO 80901

TECHNICAL HYDROLOGY REVIEW COMMITTEE MEMBERS

TECHNICAL HYDROLOGY REVIEW COMMITTEE MEMBERS

Mr. Ken Sampley
City Engineering Division
Mail Code 435
P.O. Box 1575
Colorado Springs, CO 80901-1575

Mr. Alan Morrice
El Paso County
Department of Public Works
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Colorado Springs, CO 80907

Mr. Steve Schild
National Weather Service
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Colorado Springs, CO 80916

Mr. Glade Wilkes
USDA Soil Conservation Services
655 Parfet Street
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Mr. Phil Boawn
U.S. Army Corps of Engineer
P.O. Box 294
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Dr. John Liou
FEMA - Region VIII
Denver Federal Center
Building 710
Denver, CO 80225

Mr. Doug Cain
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Pueblo, CO 80903

Mr. Dan Bunting
Regional Building Department
101 West Costilla
Colorado Springs, CO 80903

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Lakewood, CO 80215-5517

Mr. Larry Lang
Colorado Water Conservation Board
Chief, Floodplain Section
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Building 721
Denver, CO 80203

Mr. Larry Muller
Muller Engineering Company, Inc.
550 S. Wadsworth Blvd., Suite 500
Lakewood, CO 80226

Mr. Jon Sorenson
CH2M-Hill, Inc.
P.O. Box 22508
Denver, CO 80222

Mr. Bruce Beach
U.S. Army Corps of Engineers
Albuquerque District
517 Gold Avenue S.W.
Albuquerque, NM 87103

MONUMENT/FOUNTAIN CREEK STUDY GROUP

MONUMENT/FOUNTAIN CREEK STUDY GROUP

LAST NAME	FIRST NAME	COMPANY NAME	ADDRESS	CITY	ST	ZIP CODE
Blakely	Kyle		2023 N. Nevada Avenue	Colorado Springs	CO	80907
Blewitt	Craig	Comp. Plng.	MC #350			0
Culp	Anita	U.S. Army Corps of Eng.	P.O. Box 294	Pueblo	CO	81002
Dilley	Gerald	PPACG	15 S. Seventh Street	Colorado Springs	CO	80905
Dodge	Stuart	Park & Rec Board	2610 Springs Grove Terrace	Colorado Springs	CO	80906
Fowler	Sarah	U.S. EPA	MC 8WM-WQ, 999 18th Street, #500	Denver	CO	80255
Goforth	Bruce	Colo. Div. of Wildlife	2126 N. Weber Street	Colorado Springs	CO	80907
Johnson	Susan	EPC Parks Dept.	1045 W. Rio Grande Street	Colorado Springs	CO	80906
Johnson	Johnny	Becker-Johnson	955 S. Union Boulevard	Colorado Springs	CO	80910
Laiho	Douglas	Muller Eng. Co., Inc.	550 S. Wadsworth Boulevard, Suite 500	Lakewood	CO	80226
Lord	David	Colorado College	14 E. Cache La Poudre	Colorado Springs	CO	80903
Mayerl	James	Dev. Services	MC #310			0
Morrice	Alan	EPC Eng. Div.	3105 N. Stone Avenue	Colorado Springs	CO	80906
Noonan	Bill	U.S. Fish & Wildlife Svc.	730 Simms Street, Suite 158	Golden	CO	80401
Putman	Terry	Parks & Rec. Dept.	MC #1200			0
Rapp	Gary	Dev. Services	MC #310			0
Rees	Jim	Capital Imp. Program	MC #450			0
Ridley	Skye	Pikes Peak Area Trails Coal.	2418 W. St. Vrain	Colorado Springs	CO	80904
Rombeck	Gary	Wastewater Div.	MC #1455			0
Sampley	Ken	Enginering Div.	MC #435			0
Searns	Bob	Urban Edges, Inc.	1401 Blake Street, Suite 301	Denver	CO	80202
Shapiro	Ellene	El Paso County Plng. Comm.	27 E. Vermijo, 5th Floor	Colorado Springs	CO	80903
Sorenson	Jon	CH2M Hill	P.O. Box 22508	Denver	CO	80222
Stansfield	John	Sierra Club	P.O. Box 588	Monument	CO	80132
Thomas	Parry	Thomas & Thomas	313 E. Costilla Street	Colorado Springs	CO	80903
Tilley	Martha	League of Women Voters	30 Mesa Road	Colorado Springs	CO	80903
Tippie	Dan	Wastewater Div.	MC# 1455			
Tobias	Larry	CONO	3020 Shrider Road	Colorado Springs	CO	80920
Wilson	Rick	Urban Edges, Inc.	1401 Blake Street, Suite 301	Denver	CO	80202
Wulliman	Jim	CH2M Hill	P.O. Box 22508	Denver	CO	80222

PROJECT MAILING LIST

PROJECT MAILING LIST

LAST NAME	FIRST NAME	COMPANY NAME	ADDRESS	CITY	ST	ZIP CODE
	Attn: Judy	Fountain Valley News	P.O. Box 400	Fountain	CO	80817
		Colo. Geological Society	1313 Sherman	Denver	CO	80202
		Soil Conservation	1313 Sherman	Denver	CO	80203
		League of Women Voters	P.O. Box 7888	Colorado Springs	CO	80933
		McDonald's of Colo. Spgs.,	210 N. Corona	Colorado Springs	CO	80903
		Penrose Public Library	20 N. Cascade Avenue	Colorado Springs	CO	80903
		East Library & Info. Ctr.	5550 N. Union Boulevard	Colorado Springs	CO	80918
		Geological Society	12455 W. 52nd Avenue	Arvada	CO	80002
Adams	Debra		1624 N. Tejon Street	Colorado Springs	CO	80907
Anderson	Jack	EPC Park Advisory Board	2097 Copley Road	Colorado Springs	CO	80920
Annand	Dick	Engineering Dist. 2	P.O. Box 536	Pueblo	CO	81002
Atchison	Harvey	Colo. Dept. of Trans.	4201 E. Arkansas Avenue	Denver	CO	80222
Avila	Nancy		4895 Nightingale Drive	Colorado Springs	CO	80907
Bakun	Adolph		1014 Panorama Drive	Colorado Springs	CO	80904
Bamberg	Sam		26050 E. Jamison Circle	Aurora	CO	80016
Beach	William		2456 Virgo Drive	Colorado Springs	CO	80906
Beck	Sally		Box H	Monument	CO	80132
Behrends	Keith	Ridge HOA	P.O. Box 25271	Colorado Springs	CO	80936
Bevington	Elizabeth	City of Colorado Springs	1513 Alamo Avenue	Colorado Springs	CO	80907
Biegelsen	Lew	Vantage Builders	1219 Lake Plaza Drive	Colorado Springs	CO	80906
Binion	Barbara	Gateway Comm. Action Comm.	2281 Farnsworth	Colorado Springs	CO	80916
Blakely	Kyle		2023 N. Nevada Avenue	Colorado Springs	CO	80907
Blewitt	Craig	Comp. Plng.	MC #350			0
Bohall	Gary		4045 S. Nonchalant Circle	Colorado Springs	CO	80917
Bolster	Denver	CONO & Villa Loma Civic Assn.	5326 Escapardo Way	Colorado Springs	CO	80917
Borden	Larry	Broadmoor Improvement Society	71 W. Cheyenne Mtn. Road	Colorado Springs	CO	80906
Bradley	Gary	City of Colorado Springs	P.O. Box 266	Colorado Springs	CO	80901
Brueggeman	Loretta	City of Colorado Springs	515 N. Custer Avenue	Colorado Springs	CO	80903
Bryant		LWVPPR	3825 Roxbury Court	Colorado Springs	CO	80906
Buck	John	Citizens' Goals	219 W. Colorado Avenue	Colorado Springs	CO	80903
Bunting	Dan	Reg. Bldg.	MC #1105			0
Campbell	Charlie		1624 N. Tejon Street	Colorado Springs	CO	80907
Carter	Bernie		1675 Oak Hills Drive	Colorado Springs	CO	80919
Churchill	Tim	Iver's Mtn. Greenery	1610 Mtn. Grennery Way	Colorado Springs	CO	80915
Conley	David		90 S. Cascade, Suite 1400	Colorado Springs	CO	80903
Conover	Gary	Aiken Audubon Society	P.O. Box 75	Colorado Springs	CO	80901
Conyers	Ken	Colo. Dept. of Transportation	Pueblo District Office, P.O. Box 536	Pueblo	CO	81001
Cook	Ken	PPACG Comm. Advis. Board	102 S. Tejon, Suite 750	Colorado Springs	CO	80903
Copps	Elaine		1205 Telemark Drive	Woodland Park	CO	80863
Correale	Joe	USAF Space Command	21 CES/CECB	Peterson AFB	CO	80914
Cramer	Warren	Dist. Deputy Engineer	P.O. Box 536	Pueblo	CO	81002
Ctr. Comm. Dev.		UCCS	P.O. Box 7150	Colorado Springs	CO	80933
Culp	Anita	U.S. Army Corps of Eng.	P.O. Box 294	Pueblo	CO	81002
Curtis	Michael		P.O. Box 182	Colorado Springs	CO	80901
Daley	Judith		2301 W. Vermijo	Colorado Springs	CO	80904
Dell	Karl	City of Woodland Park	1131 Paradise Vly. Drive	Woodland Park	CO	80863
Deutsch	Dave	Gas Dept.	MC #1125			0
Dilley	Gerald	PPACG	15 S. Seventh Street	Colorado Springs	CO	80905
Dines	Tom		1780-C S. Eighth Street	Colorado Springs	CO	80906
Dodge	Stuart	Park & Rec Board	2610 Springs Grove Terrace	Colorado Springs	CO	80906

LAST NAME	FIRST NAME	COMPANY NAME	ADDRESS	CITY	ST	ZIP CODE
Dolder	Karl	Colo. Concrete Mfg. Co.	P.O. Box 15587	Colorado Springs	CO	80935
Donley	Chuck		2670 N. Chelton Road	Colorado Springs	CO	80909
Drake	Barbara		716 N. Wahsatch	Colorado Springs	CO	80903
Dyer	Susan	Pikes Peak Library Dist.	P.O. Box 1579	Colorado Springs	CO	80901
Eagleton	John	Supply Management - CIG Co.	P.O. Box 1087	Colorado Springs	CO	80944
Easley	Tom	Div. of Parks & Outdoor Rec.	1313 Sherman Street, Suite 618	Denver	CO	80203
Easton	James	Colo. Interstate Gas	P.O. Box 1087	Colorado Springs	CO	80944
Eskanos	Robby	El Paso County Plng. Comm.	27 E. Vermijo, 5th Floor	Colorado Springs	CO	80903
Esmiol	Morris	El Paso County Plng. Comm.	27 E. Vermijo, 5th Floor	Colorado Springs	CO	80903
Farrow	John	Water Qlty Control Div.	4210 E. 11th Street, Suite 300	Denver	CO	80220
Fisher	Wayne		716 N. Wahsatch	Colorado Springs	CO	80903
Flora	Debi		1040 Hunters Ridge Drive	Colorado Springs	CO	80919
Fowler	Sarah	U.S. EPA	MC 8WM-WQ, 999 18th Street, #500	Denver	CO	80255
Fowler	John	Chamber of Commerce	Palmer Center #110	Colorado Springs	CO	80902
Frieden	Bradley		5820 Bourke Drive	Colorado Springs	CO	80919
Frucci	Adrienne	Admin. Assistant	27 E. Vermijo Avenue	Colorado Springs	CO	80903
Fujimoto	Michele	PPACG	15 S. Seventh Street	Colorado Springs	CO	80907
Gallagher	John		101 N. Cascade Avenue.	Colorado Springs	CO	80903
Gallegos	Ron	Elec. T & D Dept.	MC #710			0
Garrison	Leif		4110 Crosslen Lane	Colorado Springs	CO	80908
Gast	Brian	El Paso County Plng. Comm.	27 E. Vermijo, 5th Floor	Colorado Springs	CO	80903
Goforth	Bruce	Colo. Div. of Wildlife	2126 N. Weber Street	Colorado Springs	CO	80907
Goss	Les		1125 Cenotaph Way	Colorado Springs	CO	80904
Grogger	Paul	El Paso County Plng. Comm.	27 E. Vermijo, 5th Floor	Colorado Springs	CO	80903
Hanna	Kirk		15680 Hanover Road	Pueblo	CO	81008
Hannigan	Michael		Colorado College	Colorado Springs	CO	80903
Hauck	Barbara	Park & Rec Board	3035 Roche Drive S.	Colorado Springs	CO	80918
Hayes Bell	Fawn		29 E. Bijou, Suite 24	Colorado Springs	CO	80903
Heinrichsdorf	Gernot		400 Dahlia	Colorado Springs	CO	80904
Heritage	Michael	CMDI of Colorado, Inc.	P.O. Box 1455	Colorado Springs	CO	80901
Hettinger	Lora Lee		5 El Sereno	Colorado Springs	CO	80906
Hill	James	El Paso County Plng. Comm.	27 E. Vermijo, 5th Floor	Colorado Springs	CO	80903
Hjelkrem	Terry	City of Colorado Springs	6375 Mesedge Drive	Colorado Springs	CO	80919
Howell	Don	City of Woodland Park	P.O. Box G	Woodland Park	CO	80866
Howells	Jeri	El Paso County	27 E. Vermijo, 3rd Floor	Colorado Springs	CO	80903
Howlette	Sandy	MCI	1175 Chapel Hills Drive	Colorado Springs	CO	80920
Huber	Thomas	SPABA	2711 Templeton Gap Road	Colorado Springs	CO	80907
Hybl	William	El Pomar	10 Lake Circle	Colorado Springs	CO	80906
Ingersol	Barbara		3075 Wildhorse Lane	Colorado Springs	CO	80926
Irwin	Bob	Murphy and Company	2245 Broadway	Colorado Springs	CO	80904
Jackson	Dean	U.S. Air Force Academy	Dir. of Transportation	USAF Academy	CO	80840
James	John	EPC Health Dept.	301 S. Union Boulevard	Colorado Springs	CO	80909
Jarvis	Doug		8050 Chancellor Drive	Colorado Springs	CO	80920
Johnson	Johnny	Becker-Johnson	955 S. Union Boulevard	Colorado Springs	CO	80910
Johnson	Craig	Peterson Air Force Base	21 CES/CECC	Peterson AFB	CO	80914
Johnson	Rich	Harrison High School	1060 Harrison Road	Colorado Springs	CO	80906
Johnson	Susan	EPC Parks Dept.	1045 W. Rio Grande Street	Colorado Springs	CO	80906
Jones	Jodie	Pikes Peak Library Dist.	P.O. Box 1579	Colorado Springs	CO	80901
Jones	Ted	City of Colorado Springs	1351 Cragin Road	Colorado Springs	CO	80920
Jones	Pam		818 East Boulder	Colorado Springs	CO	80903

LAST NAME	FIRST NAME	COMPANY NAME	ADDRESS	CITY	ST	ZIP CODE
Kanas	Mary		737 Count Portales Drive	Colorado Springs	CO	80906
Kast	David		101 N. Cascade Avenue	Colorado Springs	CO	80903
Kendrick	Charles	Town of Palmer Lake	P.O. Box 866	Palmer Lake	CO	80133
Kiefer	Ginny	Colo. College, Tutt Library	1021 N. Cascade Avenue	Colorado Springs	CO	80903
King	Hugh	Street Division	MC# 1420			0
Kiou	John	FEMA - Region VIII	Denver Fed. Ctr. Bldg. 710	Denver	CO	80225
Kissler	Tracy	Falcon AF Base	50 CES/DEEP	Falcon AFB	CO	80912
Kornelly	Irene		830 N. Tejon, Suite 105	Colorado Springs	CO	80903
Kudebeh	Karin	Colo. Dept. of Health	4300 Cherry Creek Drive S.	Denver	CO	80222
Laiho	Douglas	Muller Eng. Co., Inc.	550 S. Wadsworth Boulevard, Suite 500	Lakewood	CO	80226
Lang	Larry	Colo. Water Conserv. Board	1313 Sherman	Denver	CO	80203
Liou	John	FEMA - Region VIII	Denver Federal Ctr. Bldg. 710	Denver	CO	80225
Lonergan	John		208 Crystal Hills Boulevard	Manitou Springs	CO	80829
Lord	David	Colorado College	14 E. Cache La Poudre	Colorado Springs	CO	80903
Lorenz	Ron	Fed. Highway Admin.	555 Zang Street, Suite 250	Lakewood	CO	80228
Lytle	Chris	City Eng. Division	MC #435			0
Maentz	George		815 Arcadia Place	Colorado Springs	CO	80903
Mais	Fred	Park & Rec. Dept.	MC #1200			0
Manning	Larry	City of Manitou Spgs.	606 Manitou Avenue	Manitou Springs	CO	80829
Marconi	Frank	Park & Rec Board	1306 Tesla	Colorado Springs	CO	80907
Margrave	Patti	City Park & Rec	MC #1200			0
Marshall	David	Park & Rec Board	13615 Vollmer Road	Colorado Springs	CO	80908
Mattoon	Martha	Park & Rec Board	1090 Garlock Lane	Colorado Springs	CO	80918
Mayerl	James	Dev. Services	MC #310			0
McClellan	David		6415 Lange Drive	Colorado Springs	CO	80918
McConnel	Susan	Keep Colo. Spgs., Beautiful	111 S. Tejon, Suite 110	Colorado Springs	CO	80903
McElhany	Andrew	Park & Rec Board	P.O. Box 6711	Colorado Springs	CO	80934
McGannon	Jim	City Park & Rec: Forestry	MC #1200			0
Meadows	Sally		128 Rainbow Place	Colorado Springs	CO	80906
Medina	Diana	Gas Division	MC #1125			0
Meldon	Robert		8660 Chipita Park Road	Chipita Park	CO	80809
Metzger	Linda		1295 Nacomis Drive	Colorado Springs	CO	80915
Miller	Brad	U.S. EPA	1 Denver Pl., 999 18th Street	Denver	CO	80225
Miller	Tom	Liberty Hyundai	1323 Motor City Drive	Colorado Springs	CO	80906
Mitchell	Curtis	Utilities Water	MC #630			0
Moore	Nichola		1904 Tesla Drive	Colorado Springs	CO	80909
Morrice	Alan	EPC Eng. Div.	3105 N. Stone Avenue	Colorado Springs	CO	80906
Munson	Joe	Organ. Westside Neighbors	2635 King Street	Colorado Springs	CO	80904
Musick	Pat	Palmer Foundation	10 Studio Place	Colorado Springs	CO	80904
Nails-Smoote'	Lorin		3055 Woodland Hills Drive #A-412	Colorado Springs	CO	80918
Neilon	Barbara	Tutt Library - Colo. College	1021 N. Cascade Avenue	Colorado Springs	CO	80903
Nelson	Kent		26 S. Tejon Street	Colorado Springs	CO	80903
Nelson	Mark		1815 N. Nevada Avenue.	Colorado Springs	CO	80907
Nethercot	Hugh	Digital Equipment Corp.	301 Rockrimmon Boulevard	Colorado Springs	CO	80919
Nicklin	Russ	Water Dept.	MC # 1260			0
Noonan	Bill	U.S. Fish & Wildlife Svc.	730 Simms Street, Suite 158	Golden	CO	80401
Novak	Jerry	Vintage Communities	7710 N. Union Boulevard	Colorado Springs	CO	80920
Nutt	Oral	El Paso County Plng. Comm.	27 E. Vermijo, 5th Floor	Colorado Springs	CO	80903
Orr	Thomas		P.O. Box 38474	Colorado Springs	CO	80937
Ost	Dick	Holland Park HOA	803 Hoorne	Colorado Springs	CO	80907

LAST NAME	FIRST NAME	COMPANY NAME	ADDRESS	CITY	ST	ZIP CODE
Oswald	Bob	Colo. Soil Conservation Board	1313 Sherman Street	Denver	CO	80203
Overlin	Linda		11750 Valle Verdi Drive	Colorado Springs	CO	80926
Paich	Mark		The Colorado College	Coloado Springs	CO	80903
Pals	Ken	El Paso Cty Parks	815 Arcadia Place	Colorado Springs	CO	80903
Pattee	Lynn		2537 Pegasus Drive	Colorado Springs	CO	80906
Payne	Sally	EPC Planning Dept.	27 E. Vermijo Avenue	Colorado Springs	CO	80903
Pease	Howard		1210 Montezuma Road	Colorado Springs	CO	80920
Peterson	Kip	Teller County Plng.	P.O. Box 1886	Woodland Park	CO	80866
Peterson	Lynn	League of Women Voters	2601 Marilyn Road	Colorado Springs	CO	80909
Phillips	Barbara	Colo. Spgs. Chamber of Commerce	P.O. Drawer B	Colorado Springs	CO	80901
Polok	Guenther		102 E. Pikes Peak Avenue., Suite 305	Colorado Springs	CO	80903
Purvis	Randall	City of Colorado Springs	13 S. Tejon Street, Suite 201	Colorado Springs	CO	80903
Putman	Terry	Parks & Rec. Dept.	MC #1200			0
Raabe	Geroge	Greencrest	3110 E. Wesley Lane	Colorado Springs	CO	80907
Rachwitz	Robert	Fire Department	MC #1510			0
Rahimi	Maurice	PPACG	27 East Vermijo Avenue	Colorado Springs	CO	80903
Ramsay	Robert		2 N. Cascade Avenue	Colorado Springs	CO	80903
Rapp	Gary	Dev. Services	MC #310			0
Rector	Philip	The Colorado College	1125 Glen Avenue	Colorado Springs	CO	80905
Rees	Jim	Capital Imp. Program	MC #450			0
Reid	Allan		1041 Caribou Drive	Monument	CO	80132
Rice-Jones	Judith	Park & Rec Board	1615 N. Wahsatch Avenue	Colorado Springs	CO	80907
Ridley	Skye	Pikes Peak Area Trails Coal.	2418 W. St. Vrain	Colorado Springs	CO	80904
Riley II	Leonard		6590 Delmonico Drive #104	Colorado Springs	CO	80919
Rohr	Al	Park & Rec Board	587 Upton Drive	Security	CO	80911
Rombeck	Gary	Wastewater Div.	MC #1455			0
Roop	Joseph		417 E. Williamette	Colorado Springs	CO	80903
Rowberg	Ken	EPC Plng. Dept.	27 E. Vermijo Avenue	Colorado Springs	CO	80903
Ruder	Jim		226 La Clede	Colorado Springs	CO	80906
Sampley	Ken	Enginering Div.	MC #435			0
Saska	Susan	Mtn. Shadows Comm.	2245 Ramsgate Terrace	Colorado Springs	CO	80919
Scandrett	Michael	Scandavic Enterprises, Inc.	P.O. Box 2489	Colorado Springs	CO	80901
Schooler	Terry	METEX District	25 N. Cascade Avenue, Suite 400	Colorado Springs	CO	80903
Searns	Bob	Urban Edges, Inc.	1401 Blake Street, Suite 301	Denver	CO	80202
Seylhouwer	Ron	Div. of Transp. Plng.	4201 E. Arkansas Avenue	Denver	CO	80222
Shapiro	Ellene	El Paso County Plng. Comm.	27 E. Vermijo, 5th Floor	Colorado Springs	CO	80903
Skiffington	Lawrence	Cheyenne Mountain Station	P.O. Box 38459	Colorado Springs	CO	80937
Smedsrud	Dave	City of Fountain	116 S. Main	Fountain	CO	80817
Smith	Don	Harrison High School	1060 Harrison Road	Colorado Springs	CO	80906
Smith	Don	EPC Dept. of Transp.	3105 N. Stone Street	Colorado Springs	CO	80907
Smith	Bob	Colo. Spgs. Cycling Club	5485 Wilson Road	Colorado Springs	CO	80919
Sorenson	Jon	CH2M Hill	P.O. Box 22508	Denver	CO	80222
Spaulding	Robin	Beidelman Center	MC #1200			0
Spence	Ed	USDA Soil Conserv. Svc.	1826 E. Platte Avenue	Colorado Springs	CO	80909
Stansfield	John	Sierra Club	P.O. Box 588	Monument	CO	80132
Steger	Don	HBA of Colo. Spgs.	3730 Sinton Road, Suite 110	Colorado Springs	CO	80907
Steger	Ron	U.S. Geological Survey	Pueblo Field Office	Pueblo	CO	81002
Switzer	Debbie	Mesa Springs HOA	1509 N. Chestnut	Colorado Springs	CO	80907
Tebedo	MaryAnne		1915 Snyder Avenue	Colorado Springs	CO	80909
Thomas	Parry	Thomas & Thomas	313 E. Costilla Street	Colorado Springs	CO	80903

LAST NAME	FIRST NAME	COMPANY NAME	ADDRESS	CITY	ST	ZIP CODE
Tilley	Martha	League of Women Voters	30 Mesa Road	Colorado Springs	CO	80903
Tippie	Dan	Wastewater Div.	MC # 1455			0
Titus	Jane	Park & Rec Board	5040 Cliff Point Circle E.	Colorado Springs	CO	80919
Tobias	Larry	CONO	3020 Shrider Road	Colorado Springs	CO	80920
Torres	Robert	Dist. Design Engineer	P.O. Box 536	Pueblo	CO	81002
Trusdle	John		9825 Milne Road	Colorado Springs	CO	80928
Tudor	Bob		7420 Tudor Road	Colorado Springs	CO	80919
Tutt	Thayer	El Pomar	10 Lake Circle	Colorado Springs	CO	80906
Tyson	Wes	City Atty. Office	MC # 510			0
Van Der Wege	Marcia	School Dist. 20	7610 N. Union Boulevard	Colorado Springs	CO	80920
Vaupel	William	WE Vaupel Consultants	3141 Deliverance Drive	Colorado Springs	CO	80918
Voos	Greg	URS Consultants	1040 S. Eighth Street	Colorado Springs	CO	80906
Vradenburg	Beatrice	Business of Arts Center	1231 E. High Point Lane	Colorado Springs	CO	80904
Wade	Bob	Wade's Pancake House	16 S. Walnut	Colorado Springs	CO	80905
Walker	Melissa	Gard. of Gods	MC #1200			0
Waller	Nancy		404 Rose Drive	Colorado Springs	CO	80911
Walters	Barbara	Midland Area	2509 Bott Avenue	Colorado Springs	CO	80904
Watt	Steve	Wilson & Company	455 E. Pikes Peak Avenue, Suite 200	Colorado Springs	CO	80903
Weinert	Phil		15590 Castle Gate Ct.	Colorado Springs	CO	80921
Wenham	P.J.	LWVPPR	3801 Wesley Drive	Colorado Springs	CO	80907
Whitney	Dwight	Town of Monument	P.O. Box 325	Monument	CO	80132
Wild	Ruth		2080 Mesa Road	Colorado Springs	CO	80904
Wilson	Rick	Urban Edges, Inc.	1401 Blake Street, Suite 301	Denver	CO	80202
Wilson	Charles		5541 Constitution Court	Colorado Springs	CO	80915
Winkler	Jan	Downtown Colo. Spgs.	P.O. Box 1542	Colorado Springs	CO	80901
Worley	Hank		102 N. Cascade, Suite 208	Colorado Springs	CO	80903
Wulliman	Jim	CH2M Hill	P.O. Box 22508	Denver	CO	80222
Yergensen	Gene		115 S. Weber, Suite 200	Colorado Springs	CO	80903
Young	Leon	City of Colorado Springs	30 S. Nevada Avenue, Suite 401	Colorado Springs	CO	80903
Zehrer	Dave		188 Princeton Drive	Colorado Springs	CO	80909
Ziegler	Lee	League of Women Voters	15125 W. Coachman Drive	Black Forest	CO	80908
Zinn	Sheila		4903 Constitution	Colorado Springs	CO	80915

U.S. ARMY CORPS OF ENGINEERS' STANDARD RESOURCE MAPPING NOMENCLATURE

CITY OF COLORADO SPRINGS
COLORADO

INTEROFFICE MEMORANDUM

DATE: October 2, 1991

TO: Ken, Bob, Steve, & Rob

FROM: Bruce A. Thorson, Assistant City Engineer

SUBJECT: STANDARD RESOURCE MAPPING NOMENCLATURE FOR DRAINAGE BASIN PLANNING STUDIES

Attached is a list of standard resource mapping nomenclature from the Corps of Engineers which will be used by them in the List of Categories Of Activities process to evaluate existing environmental conditions and features in each of our drainage basin planning studies. We have previously agreed to utilize this standard nomenclature in our drainage basin planning studies. These standards should be used for Sand Creek, Shooks Run, Spring Creek, North Rockrimmon, and any future drainage basin planning studies.

Please transmit this information to the consultants on these drainage basin planning studies. It is noted in the letter, individual plant species or specific features are different for each basin and would still need to be described.

Bruce A. Thorson

Bruce A. Thorson
Assistant City Engineer

Attachment

c: Gary R. Haynes, City Engineer
Christine Lytle, Stormwater/Environmental Engineer
Chris Smith, Subdivision Administrator
Jerry Banks, Supervising Civil Engineer

btm1002

DEPARTMENT OF THE ARMY
ALBUQUERQUE DISTRICT, CORPS OF ENGINEERS
P.O.BOX 1580
ALBUQUERQUE, NEW MEXICO 87103-1580
FAX (505) 766-2770

REPLY TO
ATTENTION OF:

September 25, 1991

Construction-Operations Division
Regulatory Branch

Mr. Gary R. Haynes
Colorado Springs City Engineering Division
P.O. Box 1575 (m. c. 435)
Colorado Springs, Colorado 80901 - 1575

Dear Mr. Haynes:

Reference is made to the following ongoing Drainage Basin Planning Studies (DBPS) and proposed Section 404 List of Categories of Activities (LCA) for three basins in Colorado Springs, Colorado:

a. Sand Creek Drainage Basin, CE Action No. CO-OYT-0636.

b. Shooks Run Drainage Basin, CE Action No. CO-OYT-0637.

c. Spring Creek Drainage Basin, CE Action No. CO-OYT-0638.

Enclosed is a list of standard resource mapping nomenclature which we will be using in the LCA process to evaluate the existing environmental conditions and features of each basin. We have found it confusing to have each basin study use a different set of terms. For example, one basin study used the name "wetland swale" for a particular plant community and another study used the same name, but for a very different community type. Even with the standard terms, individual plant species or specific features are different for each basin and would still need to be described. However, using the same general terms for each basin should promote more consistent general descriptions. I therefore request these terms be used in the environmental descriptions and mapping in the subject DBPS's. I also request the nomenclature be used in any new DBPS's for which we are proposing an LCA.

Should you have any questions regarding the use of the list or wish to change the list, please feel free to write or call Ms. Anita Culp at (719) 543-9459.

Sincerely,

Robert E. Meehan

Robert E. Meehan, P.E.
Chief, Construction-Operations Division

Enclosure

September 1991

STANDARD NOMENCLATURE FOR RESOURCE MAPPING

VEGETATION

Predominant Community	Comments
1. Mature Riparian Woodland (includes wetland woodland)	1. riparian - hydrologically associated with a waterway. describe understory (ex. grass/ forb, shrub, no understory)
2. Immature Riparian Woodland	2. immature trees - typically <5 years in age
3. Woodland	3. non riparian
4. Riparian Shrubland (includes wetland shrubland)	4. shrubland - very little or no tree overstory
5. Riparian Grassland (includes wetland grassland)	5. mostly grasses, some forbs
6. Grassland	6. non riparian
7. Herbaceous Wetland	7. mostly forbs (sedges, spike rushes, etc.), some grasses
8. Emergent Wetland	8. plants rooted in deep standing water (bulrushes, cattails, etc.)

STREAMBED OR CHANNEL BOTTOM COMPOSITION

Predominate Feature	Comments
1. Silt/Clay	
2. Sand	
3. Gravel	
4. Cobble	
5. Stone	
6. Rubble	6. broken concrete and asphalt
7. Bedrock	
8. Hard Lined	8. impervious linings such as concrete, soil cement and grouted rock

STREAMBANK OR CHANNEL SIDES (FOR LOW OR FLOOD FLOWS)

Predominant Feature *	Comments
1. Concrete/Soil-cement Lined	
2. Riprap Lined	
3. Informal Rubble	3. typically dumped, no formal design
4. Grass Lined	4. designed lining
5. Natural (no dumping or bank modifications)	
6. Eroded	
7. Pond (natural or constructed)	
8. Seasonal Pond (natural or constructed)	8. ordinarily dry for > 1-3 months yearly

* This list should be expanded as needed to describe the general types of streambanks and hard or soft linings in the basin.

STREAM FLOW

Predominant Feature	Comments
1. Perennial	
2. Intermittent	

RECREATION

Predominant Feature	Comments
1. Trails	1. formal or informal
2. Maintenance Roads	2. with or without use as a trail
3. Parks/Sanctuaries	

IMPORTANT WILDLIFE

Kind	Comments
1. Threatened or Endangered Species	1. state or federal
2. Local Importance	2. of local importance to region

OUTSTANDING NATURAL SCENIC FEATURES

Dominant Feature	Comments
1. Geological	1. ex. - outstanding scenic cliffs
2. Vegetation	2. outstanding, unusual or unique vegetation
3. Other	

DRAINAGE FACILITY INVENTORY
SUMMARY TABULATION

DRAINAGE FACILITY INVENTORY

Fountain Creek Drainage Basin Planning Study
City of Colorado Springs, Colorado
July, 1994

Attached is a printout of the Lotus 1-2-3 data base of the drainage facilities inventoried as part of the Fountain Creek Drainage Basin Planning Study. These facilities have been electronically drafted on an AutoCAD format of the City of Colorado Springs' FIMS base mapping. Per previous instructions, the AutoCAD files were provided to the City to be incorporated into the City's FIMS.

FOUNTAIN CREEK DRAINAGE FACILITY INVENTORY

STRUCTURE NUMBER	MAP #	LOCATION DESCRIPTION	SIZE	TYPE	SLOPE	LENGTH	MAINTAIN RESPONSIBLE	PIPE CHARACT.	SPILLWAY CHARACT.	CONDITION	REMARKS	JURISDICTION NO.
99 - CHA - 1	135.0/320.2	150' SE OF CIRCLE DR CROSSING OF FTN CRK	12'x12'x35'	CONC1		50'	CITY			EXCELLENT	ENERGY DISSIPATOR & RIPRAP APRON	
99 - PIP - 2	135.0/320.2	FROM 99-CHA-1 TO 99-MAN-3	60"	RCP		340'	CITY					
99 - MAN - 3	135.2/320.4	NEAR LAS VEGAS ST. & SOUTH OF CIRCLE DR					CITY				POSSIBLE PIPE SIZE CHANGE	
99 - PIP - 4	135.2/320.4	FROM 99-MAN-3 TO 99-INL-5	72"	RCP		370'	CITY					
99 - INL - 5	135.2/320.4	150' SE OF CIRCLE DR OVERPASS @ HANCOCK	8.5'x9'	GRATE			CITY			EXCELLENT		
99 - PIP - 6	135.2/320.4	FROM 99-INL-5 TO 99-INL-7	36"	RCP		1580'	CITY				ALSO ON MAP 135.0/320.4	
99 - INL - 7	135.0/320.4	NW CORNER HANCOCK EXPRESSWAY & DELTA DR	4'	D-10-R			CITY			EXCELLENT		
99 - PIP - 8	135.0/320.4	FROM 99-INL-7 TO ?	30"	RCP			CITY				FROM INLET TO WYE?	
99 - PIP - 9	135.0/320.4	FROM 99-PIP-8 TO 99-INL-10	24"	RCP			CITY					
99 - INL - 10	135.0/320.4	NE CORNER HANCOCK & DELTA DR	8'	D-10-R			CITY			EXCELLENT		
99 - PIP - 11	135.0/320.4	FROM 99-PIP-8 (WYE?) TO 99-MAN-12					CITY				ALSO ON MAP 135.2/320.4	
99 - MAN - 12	135.2/320.4	DELTA DRIVE					CITY					
99 - PIP - 13	135.2/320.4	FROM 99-MAN-12 TO 99-INL-14	18"	RCP		10'	CITY					
99 - INL - 14	135.2/320.4	425' N OF HANCOCK & DELTA DR, W SIDE	4'	D-10-R			CITY			EXCELLENT		
99 - PIP - 15	135.2/320.4	FROM 99-MAN-12 TO 99-INL-16	18"	RCP		60'	CITY					
99 - INL - 16	135.2/320.4	425' N OF HANCOCK & DELTA DR, E SIDE	6'	D-10-R			CITY			EXCELLENT		
99 - PIP - 17	135.2/320.4	FROM 99-INL-5 TO 99-CHA-18	48"	RCP		45'	CITY			EXCELLENT	TRANSITION FROM V-DITCH TO INLET	
99 - CHA - 18	135.2/320.4	FROM 99-PIP-17 TO 99-PIP-19	0'x2'x18'	ASPH		1080'					ASPHALT LINED V-DITCH	
99 - PIP - 19	135.2/320.4	@ ON/OFF RAMPS OF CIRCLE DR N BND	42"	RCP		160'					END SECTION AT EAST END	
99 - CHA - 20	135.2/320.4	FROM 99-PIP-19 N ALONG E SIDE CIRCLE DR	0'x2'x25'	ASPH		660'					ASPHALT LINED V-DITCH	
99 - PIP - 21	135.2/320.4	OFF RAMP FROM CIRCLE DR N BND.	24"	CMP		120'					OUTFALLS INTO V-DITCH (99-CHA-18)	
99 - PIP - 22	135.2/320.4	FROM 99-INL-5 TO 99-MAN-23	36"	RCP		310'						
99 - MAN - 23	135.2/320.4	NE SIDE HANCOCK & N OF CIRCLE DR										
99 - PIP - 24	135.2/320.4	FROM 99-MAN-23 TO 99-CHA-25	36"	RCP		120'						
99 - CHA - 25	135.2/320.4	FROM 99-PIP-24 TO 99-PIP-26	0'x2'x20'	ASPH		650'					END SECTION AT ENTRANCE	
99 - PIP - 26	135.2/320.4	FROM 99-CHA-25 TO 99-CHA-27	36"	CMP		160'					ASPHALT LINED V-DITCH	
99 - CHA - 27	135.2/320.4	FROM 99-PIP-26 TO 99-PIP-28	0'x2'x20'	ASPH		300'						
99 - PIP - 28	135.2/320.4	FROM 99-PIP-27 TO 99-CHA-29	36"	CMP		130'					ASPHALT LINED V-DITCH	
99 - CHA - 29	135.2/320.4	FROM 99-PIP-28 N ALONG W SIDE CIRCLE DR	0'x2'x18'	ASPH		470'						
99 - PIP - 30	135.4/320.4	SPRING CREEK FILING NO. 1	24"	CMP		90'	PRIVATE				ASPHALT LINED V-DITCH	
99 - INL - 31	135.4/320.4	SPRING CREEK FILING NO.1	6'	D-10-R			PRIVATE				THEN OVERLAND TO 99-CHA-29	
99 - PIP - 32	135.4/320.4	FROM 99-INL-31 TO 99-INL-33	6"	PVC		115'	PRIVATE					
99 - INL - 33	135.4/320.4	SPRING CREEK FILING NO.1	2'	GRATE			PRIVATE					
99 - PIP - 34	135.0/320.2	W OF LAS VEGAS ST & S OF CIRCLE DR	36"	RCP			CITY					
99 - PIP - 35	135.0/320.2	FROM 99-PIP-34 TO 99-PIP-36	42"	CMP		115'	CITY				OUTFALL AT FOUNTAIN CRK NOT FOUND	
99 - PIP - 36	135.0/320.2	FROM 99-PIP-35 TO ? (UNDER RR TRACKS)	36"	CMP			CITY					
99 - PIP - 37	135.2/320.2	APPROX 275' NW OF CIRCLE DR OVERPASS	24"	CMP		100'					ENTRANCE TO PIPE NOT FOUND	
99 - PIP - 38	135.2/320.2	FROM OUTFALL @ FTN CREEK TO 99-INL-39	72"/60"	RCP		500'	CITY				UNDER RR TRACKS & LAS VEGAS ST	
99 - INL - 39	135.2/320.2	100' W OF ON/OFF RAMP & UNION BLVD	10'x5'	GRATE			CITY				END SECTION AND RIPRAP @ OUTFALL	
99 - PIP - 40	135.2/320.2	FROM 99-INL-39 TO 99-MAN-41	60"	RCP		40'	CITY				AN UNDEVELOPED PARCEL OF LAND	
99 - MAN - 41	135.2/320.2	W ON/OFF RAMP & UNION BLVD					CITY					
99 - PIP - 42	135.2/320.2	FROM 99-MAN-41 TO 99-INL-43	24"x36"	RCP		180'	CITY					
99 - INL - 43	135.2/320.2	NE CORNER OF ON/OFF RAMP & UNION BLVD	2 @ 10'	D-10-R			CITY				INLETS CONNECTED AS ONE INLET	
99 - PIP - 44	135.2/320.2	FROM 99-INL-43 TO 99-INL-45	24"	RCP		425'	CITY				ALSO ON MAP 135.2/320.4	
99 - INL - 45	135.2/320.4	425' E OF 99-INL-43 IN N CURB	8'	D-10-R								
99 - PIP - 46	135.2/320.4	SPRING CREEK FILING NO. 1	18"	RCP		40'	PRIVATE				OUTFALLS TO 99-INL-45	
99 - INL - 47	135.2/320.4	SPRING CREEK FILING NO. 1	4'	D-10-R			PRIVATE					
99 - PIP - 48	135.2/320.2	FROM 99-INL-39 TO 99-MAN-49				200'	CITY					
99 - MAN - 49	135.2/320.2	200' N OF UNION BLVD ON/OFF RAMP					CITY					
99 - PIP - 50	135.2/320.2	FROM 99-MAN-49 TO 99-INL-51	18"	RCP		25'	CITY					

STRUCTURE NUMBER	MAP #	LOCATION DESCRIPTION	SIZE	TYPE	SLOPE	LENGTH	MAINTAIN RESPONSIBLE	PIPE CHARACT.	SPILLWAY CHARACT.	CONDITION	REMARKS	JURISDICTION NO.
99 - INL - 51	135.2/320.2	240' N OF ON/OFF RAMP & UNION BLVD	6'	D-10-R			CITY					
99 - PIP - 52	135.2/320.2	FROM 99-MAN-49 TO 99-INL-53	2 @ 54"x33"			100'	CITY				CONFIGURATION OF PIPES UNKNOWN	
99 - INL - 53	135.2/320.2	240' N OF ON/OFF RAMP & UNION BLVD	16'	D-10-R			CITY				INLET OPEN FRONT & BACK	
99 - PIP - 54	135.2/320.2	FROM 99-MAN-49 TO 99-MAN-55				115'	CITY					
99 - MAN - 55	135.2/320.2	235' N OF 99-INL-53 E SIDE OF UNION BLVD					CITY					
99 - PIP - 56	135.2/320.2	FROM 99-MAN-55 TO 99-INL-57	18"	RCP		20'	CITY					
99 - INL - 57	135.2/320.2	250' N OF 99-INL-53, E SIDE UNION BLVD	10'	D-10-R								
99 - PIP - 58	135.2/320.2	FROM 99-MAN-55 TO 99-MAN-59				235'	CITY					
99 - MAN - 59	135.2/320.2	240' N OF 99-MAN-55					CITY					
99 - PIP - 60	135.2/320.2	FROM 99-MAN-59 TO 99-MAN-61				475'	CITY					
99 - MAN - 61	135.4/320.2	480' N OF 99-MAN-59					CITY				ALSO ON MAP 135.4/320.2	
99 - PIP - 62	135.2/320.2	FROM 99-PIP-60 TO 99-INL-63	18"	RCP		20'	CITY					
99 - INL - 63	135.2/320.2	530' N OF 99-INL-57	10'	D-10-R			CITY				POSSIBLE WYE @ 99-PIP-60	
99 - PIP - 64	135.4/320.2	FROM 99-MAN-61 TO 99-INL-65	18"	RCP		10'	CITY					
99 - INL - 65	135.4/320.2	180' N OF 99-INL-63 E SIDE OF UNION BLVD	10'	D-10-R			CITY					
99 - PIP - 66	135.4/320.2	FROM 99-MAN-61 TO 99-MAN-67				285'	CITY					
99 - MAN - 67	135.4/320.2	290' N OF 99-MAN-61					CITY					
99 - PIP - 68	135.4/320.2	FROM 99-MAN-67 TO 99-MAN-69				375'	CITY					
99 - MAN - 69	135.4/320.2	380' N OF 99-MAN-67 E SIDE OF UNION BLVD					CITY					
99 - PIP - 70	135.4/320.2	FROM 99-PIP-68 TO 99-INL-71	18"	RCP		30'	CITY					
99 - INL - 71	135.4/320.2	460' N OF 99-INL-65, E SIDE OF UNION BLVD	10'	D-10-R			CITY				POSSIBLE WYE @ 99-PIP-68	
99 - PIP - 72	135.4/320.2	FROM 99-MAN-69 TO 99-INL-73	18"	RCP		340'	CITY					
99 - INL - 73	135.4/320.2	590' N OF 99-INL-71, E SIDE OF UNION BLVD	8'	D-10-R			CITY					
99 - PIP - 74	135.2/320.2	1000' NW ALONG LAS VEGAS ST FROM 99-PIP-37	24"	CMP		90'	CITY					
99 - PIP - 75	135.2/320.2	APPROX 600' NW OF 99-PIP-74	24"	STEEL		60'					CULVERT UNDER LAS VEGAS ST	
99 - CHA - 76	135.6/319.8	DIVERSION CANAL FOR WASTEWATER FACILITY		UNL			CITY				ROAD DITCH CULVERT	
99 - CHA - 77	135.6/319.8	FROM 99-CHA-76 TO 99-PIP-78		NAT		430'	CITY				ALSO ON 135.6/319.8 & 135.4/319.8	
99 - PIP - 78	135.6/319.8	FROM 99-CHA-77 TO 99-CHA-79	18"	CMP		125'	CITY				SIZE VARIES	
99 - CHA - 79	135.6/319.8	FROM 99-PIP-78 TO 99-CUL-80		NAT		180'	CITY				ONLY OUTFALL FOR 99-PIP-83 ?	
99 - CUL - 80	135.6/319.8	FROM 99-CHA-79 TO 99-CUL-81 UNDER D&RGW RR	13'	CLSPN		20'					ROAD DITCH SIZE VARIES	
99 - CUL - 81	135.6/319.8	FROM 99-CUL-80 TO 99-PIP-83 UNDER RR SPUR		CLSPN		50'					13.4' WIDE	
99 - CHA - 82	135.6/319.8	FROM 99-CUL-81 TO BUS FACILITY PARKING LOT		CONC1		215'	CITY				10' WIDE	
99 - PIP - 83	135.6/319.8	FROM 99-CUL-81 TO 99-MAN-84	60"	CMP			CITY				2.5' WIDE CONC. TROUGH	
99 - MAN - 84	135.8/319.8	APPROX 1750' S OF TRANSIT DR & HANCOCK					CITY				ALSO MAP 135.8/319.8	
99 - PIP - 85	135.8/319.8	FROM 99-MAN-84 TO 99-INL-86	18"	CMP		25'	CITY				GRATED LID	
99 - INL - 86	135.8/319.8	IN CITY BUS FACILITY PARKING LOT	5'	D-10-R			CITY					
99 - PIP - 87	135.8/319.8	FROM 99-MAN-84 TO 99-PIP-88	48"	CMP		150'	CITY					
99 - PIP - 88	135.8/319.8	FROM 99-PIP-87 TO 99-CHA-90	36"	CMP		550'	CITY				UNDER HANCOCK EXPRESSWAY	
99 - PIP - 89	135.8/319.8	FROM 99-PIP-88 UNDER ROAD	2 @ 15"	RCP		40'	CITY					
99 - CHA - 90	135.8/319.8	FROM 99-PIP-88 TO 99-PIP-91		UNL		500'	CITY				CULVERT PIPE UNDER ROAD	
99 - PIP - 91	135.8/319.8	FROM 99-CHA-90 TO ?	36"	CMP			CITY				ROAD DITCH @ CEMETARY	
99 - PIP - 92	135.8/319.8	PIPE UNDER ROAD INTO 99-CHA-90	12"	RCP		35'	CITY				ENTRANCE LOCATION UNKNOWN	
99 - PIP - 93	135.8/319.8	PIPE UNDER ROAD INTO 99-CHA-90	15"	RCP		40'	CITY					
99 - PIP - 94	135.8/319.8	FROM 99-CHA-90 TO ? POSSIBLY 99-CHA-96	28"x42"				CITY					
99 - PIP - 95	135.8/319.8	PIPE UNDER ROAD TO 99-CHA-90	10"	RCP		90'	CITY				OUTFALL NOT LOCATED	
99 - CHA - 96	135.8/319.8	FROM 99-PIP-87 TO 99-PIP-97		NAT		1590'	CITY					
99 - PIP - 97	135.8/319.8	PIPE UNDER CEMETARY ENTRANCE TO 99-CHA-96	24"	CMP		120'	CITY				DITCH ALONG E SIDE OF HANCOCK	
99 - PIP - 98	135.8/319.8	FROM 99-MAN-84 TO 99-CHA-107	54"	CMP			CITY					
99 - PIP - 99	135.8/319.8	FROM 99-PIP-98 TO 99-MAN-100					CITY				ALSO ON MAP 135.8/319.6	
99 - MAN - 100	135.8/319.8	W OF HANCOCK APPROX 1400' S OF TRANSIT DR					CITY				CONNECTION TO 54" CMP ASSUMED	

STRUCTURE NUMBER	MAP #	LOCATION DESCRIPTION	SIZE	TYPE	SLOPE	LENGTH	MAINTAIN RESPONSIBLE	PIPE CHARACT.	SPILLWAY CHARACT.	CONDITION	REMARKS	JURISDICTION NO.
99 - PIP - 101	135.8/319.8	FROM 99-MAN-100 TO 99-INL-102	24"	RCP		70'	CITY					
99 - INL - 102	135.8/319.8	@ NE CORNER OF BUS FACILITY PARKING LOT	4'	D-10-R			CITY					
99 - PIP - 103	135.8/319.8	FROM 99-INL-102 TO 99-INL-104	18"	RCP		250'	CITY				ALSO ON MAP 135.8/319.6	
99 - INL - 104	135.8/319.6	W SIDE OF BUS FACILITY PARKING AREA	4'	D-10-R			CITY					
99 - PIP - 105	135.8/319.6	FROM 99-PIP-98 TO 99-INL-106	24"	CMP		340'	CITY					
99 - INL - 106	135.8/319.6	IN SANTA FE ST 425' E OF INSTITUTE ST	6'	D-10-R			CITY					
99 - CHA - 107	135.8/319.6	99-PIP-98 TO 99-PIP-120 (ON MAP 136.0/319.6)		NAT		340'	CITY				CHANNEL THROUGH FOUNTAIN PARK	
99 - PIP - 108	135.8/319.6	FROM 99-CHA-107 TO 99-INL-109	36"	RCP		410'	CITY					
99 - INL - 109	135.8/319.6	HILLSIDE COMMUNITY CENTER PARKING LOT	4'	D-10-R			CITY					
99 - PIP - 110	135.8/319.6	FROM 99-INL-109 TO 99-INL-111	24"	RCP		80'	CITY					
99 - INL - 111	135.8/319.6	HILLSIDE COMMUNITY CENTER PARKING LOT	20'	D-10-R			CITY					
99 - PIP - 112	135.8/319.6	FROM 99-INL-111 TO 99-INL-113	18"	RCP		300'	CITY				ALSO ON MAP 136.0/319.6	
99 - INL - 113	136.0/319.6	@ THE HILLSIDE COMMUNITY CENTER	16'	D-11								
99 - PIP - 114	136/0/319.6	FROM 99-INL-113 TO 99-INL-115					CITY				ASSUMED CONFIGURATION	
99 - INL - 115	136.0/319.6	INSTITUTE ST ACROSS FROM 99-INL-113	18"x18"	GRATE			CITY					
99 - PIP - 116	135.8/319.6	FROM 99-PIP-98 TO 99-INL-117	24"	RCP		340'	CITY				ALSO ON MAP 135.8/319.8	
99 - INL - 117	135.8/319.6	TRANSIT DR, N OF BUS FACILITY	6'	D-10-R			CITY					
99 - PIP - 118	135.8/319.6	FROM 99-INL-117 TO 99-INL-119				40'	CITY				SIZE UNKNOWN	
99 - INL - 119	135.8/319.6	W SIDE TRANSIT DR OPPOSITE 99-INL-117	12'	D-10-R			CITY					
99 - PIP - 120	136.0/319.6	FROM 99-CHA-107 TO 99-INL-121	54"	RCP		240'	CITY				CONCRETE HEADWALL @ OUTFALL	
99 - INL - 121	136.0/319.6	S SIDE FOUNTAIN BLVD @ CEDAR ST	15'	D-10-R			CITY					
99 - PIP - 122	136.0/319.6	FROM 99-PIP-120 TO 99-INL-123	18"	RCP		15'	CITY					
99 - INL - 123	136.0/319.6	SE CORNER OF FOUNTAIN PARK PARKING LOT	3'x1.5'	GRATE			CITY					
99 - PIP - 124	136.0/319.6	FROM 99-INL-121 TO 99-MAN-125	42"	RCP		180'	CITY					
99 - MAN - 125	136.0/319.6	S SIDE FOUNTAIN BLVD, 150' E OF CEDAR ST					CITY					
99 - PIP - 126	136.0/319.6	99-MAN-125 TO 99-MAN-127				165'	CITY				ALSO ON MAP 136.0/319.8	
99 - MAN - 127	136.0/319.8	S SIDE FOUNTAIN BLVD & 110' W OF HANCOCK					CITY					
99 - PIP - 128	136.0/319.8	FROM 99-MAN-127 TO 99-MAN-129				110'	CITY					
99 - MAN - 129	136.0/319.8	@ NW CORNER OF FOUNTAIN BLVD & HANCOCK					CITY					
99 - PIP - 130	136.0/319.8	FROM 99-MAN-129 TO 99-INL-131	24"			30'	CITY					
99 - INL - 131	136.0/319.8	@ NW CORNER OF HANCOCK & FOUNTAIN	15'	D-10-R			CITY					
99 - PIP - 132	136.0/319.8	FROM 99-MAN-129 TO 99-MAN-133				20'	CITY					
99 - MAN - 133	136.0/319.8	@ NE CORNER OF FOUNTAIN & HANCOCK					CITY					
99 - PIP - 134	136.0/319.8	FROM 99-MAN-133 TO 99-INL-135	42"	RCP		35'	CITY					
99 - INL - 135	136.0/319.8	IN HANCOCK @ NE COR OF HANCOCK & FOUNTAIN	50'	D-10-R			CITY				VERY LARGE INLET	
99 - PIP - 136	136.0/319.6	FROM 99-INL-121 TO 99-INL-137	36"x54"	RCP		50'	CITY					
99 - INL - 137	136.0/319.6	@ NW COR OF FOUNTAIN BLVD & CEDER ST	25'	D-11			CITY					
99 - PIP - 138	136.0/319.6	FROM 99-INL-137 TO NORTH	30"	RCP			CITY				STUB OUT FOR FUTURE SYSTEM	
99 - PIP - 139	136.0/319.6	FROM 99-INL-137 TO 99-INL-140	24"	RCP		30'	CITY					
99 - INL - 140	136.0/319.6	@ NE OF FOUNTAIN BLVD & CEDER ST	25'	D-11			CITY					
99 - CHA - 141	136.0/319.6	FROM 99-CHA-107 TO 99-PIP-142		NAT		500'	CITY				SWALE IN FOUNTAIN PARK	
99 - PIP - 142	136.0/319.6	FROM 99-CHA-141 TO 99-INL-143	10"	PVC		55'	CITY					
99 - INL - 143	136.0/319.6	HILLSIDE COMMUNITY CENTER	4'	D-10-R			CITY					
99 - PIP - 144	136.0/319.6	APPROX 130' N FOUNTAIN BLVD	24"x36"	CMP			CITY					
99 - CHA - 145	135.6/319.8	FROM 99-CUL-81 TO 99-CHA-146		NAT		1140'	CITY				ALSO ON 135.6/319.6 & 135.8/319.6	
99 - CHA - 146	135.8/319.6	FROM 99-CHA-145 TO 99-PIP-147	2'x2'x10'	CONC1		225'	CITY					
99 - PIP - 147	135.8/319.6	FROM 99-CHA-146 TO 99-INL-148	24"	RCP		50'	CITY					
99 - INL - 148	135.8/319.6	S SIDE OF CUL-DE-SAC @ END OF TRANSIT DR	8'	D-10-R			CITY					
99 - PIP - 149	135.8/319.4	N FROM FOUNTAIN CR TO 99-INL-150	24"	RCP			CITY					
99 - INL - 150	135.8/319.4	@ S END EL PASO ST ON W SIDE OF STREET	3'x2'	GRATE			CITY				OUTFALL END @ FTN CRK NOT LOCATED	

STRUCTURE NUMBER	MAP #	LOCATION DESCRIPTION	SIZE	TYPE	SLOPE	LENGTH	MAINTAIN RESPONSIBLE	PIPE CHARACT.	SPILLWAY CHARACT.	CONDITION	REMARKS	JURISDICTION NO.
99 - PIP - 151	135.8/319.4	FROM 99-INL-150 TO 99-PIP-152	24"	RCP		320'	CITY					
99 - PIP - 152	135.8/319.4	FROM 99-PIP-151 TO 99-INL-153	12"	RCP		10'	CITY					
99 - INL - 153	135.8/319.4	@ SW COR OF EL PASO ST & GILLETTE ST	3'x2'	GRATE			CITY					
99 - PIP - 154	135.8/319.4	FROM 99-PIP-151/99-PIP-152 TO 99-INL-155	12"	RCP		160'	CITY					
99 - INL - 155	135.8/319.4	@ SW COR OF EL PASO ST & LAS VEGAS ST	3'x2'	GRATE			CITY					
99 - PIP - 156	135.8/319.2	FOUNTAIN CRK, 300' E OF NEVADA AVE BRIDGE	12"	PVC							ENTRANCE UNKNOWN	
99 - PIP - 157	135.8/319.2	FOUNTAIN CRK @ NEVADA AVE TO 99-MAN-158	48"	RCP		525'	CITY				CONC HEADWALL @ OUTLET	
99 - MAN - 158	135.8/319.2	160' S OF NEVADA AVE & LAS VEGAS ST					CITY					
99 - PIP - 159	135.8/319.2	FROM 99-MAN-158 TO 99-INL-160	18"	RCP		35'	CITY					
99 - INL - 160	135.8/319.2	W SIDE NEVADA AVE 150' S OF LAS VEGAS ST	8'	TYPE R			CITY					
99 - PIP - 161	135.8/319.2	FROM 99-MAN-158 TO 99-INL-162	18"	RCP		25	CITY					
99 - INL - 162	135.8/319.2	E SIDE NEVADA AVE, 150' S OF LAS VEGAS ST	8'	TYPE R			CITY					
99 - PIP - 163	135.8/319.2	FROM 99-INL-162 TO 99-INL-164	18"	CMP		35'	CITY					
99 - INL - 164	135.8/319.2	E SIDE NEVADA AVE NORTH OF 99-INL-162	3'x2'	GRATE			CITY					
99 - PIP - 165	135.8/319.2	FROM 99-INL-162 TO ?	12"	PVC			CITY				PIPE INLET UNKNOWN	
99 - PIP - 166	135.8/319.2	FROM 99-MAN-158 TO 99-PIP-167					CITY				POSSIBLE WYE CONNECTION	
99 - PIP - 167	135.8/319.2	FROM 99-PIP-166 TO 99-INL-168	12"	RCP		40'	CITY					
99 - INL - 168	135.8/319.2	NE CORNER OF NEVADA AVE & LAS VEGAS ST	4'	D-10-R			CITY					
99 - PIP - 169	135.8/319.2	FROM 99-PIP-166/99-PIP-167 TO 99-PIP-170					CITY				POSSIBLE WYE CONNECTION	
99 - PIP - 170	135.8/319.2	FROM 99-PIP-169 TO 99-INL-171	24"	RCP		180'	CITY					
99 - INL - 171	135.8/319.2	N SIDE LAS VEGAS ST, 125' W OF NEVADA AVE	10'	TYPE R			CITY					
99 - PIP - 172	135.8/319.2	FROM 99-PIP-170 TO 99-INL-173	18"	RCP		25'	CITY				POSSIBLE WYE CONNECTION	
99 - INL - 173	135.8/319.2	@ NW CORNER OF NEVADA & LAS VEGAS ST	10'	TYPE R			CITY					
99 - PIP - 174	135.8/319.2	FROM 99-PIP-169/99-PIP-170 TO 99-PIP-175					CITY				POSSIBLE WYE CONNECTION	
99 - PIP - 175	135.8/319.2	FROM 99-PIP-174 TO 99-INL-176	18"	RCP		70'	CITY					
99 - INL - 176	135.8/319.2	W SIDE OF NEVADA AVE NEAR MILL ST	12'	TYPE R			CITY					
99 - PIP - 177	135.8/319.2	FROM 99-PIP-174/99-PIP-175 TO 99-PIP-178					CITY				POSSIBLE WYE CONNECTION	
99 - PIP - 178	135.8/319.2	FROM 99-PIP-177 TO 99-INL-179	18"			20'	CITY					
99 - INL - 179	135.8/319.2	@ NE COR OF NEVADA AVE & MILL ST	12'	TYPE R			CITY					
99 - PIP - 180	135.8/319.2	FROM 99-PIP-177/99-PIP-178 TO 99-PIP-181					CITY				ALSO MAP 136.0/319.2	
99 - PIP - 181	136.0/319.2	FROM 99-PIP-180 TO 99-INL-182	18"	RCP		15'	CITY					
99 - INL - 182	136.0/319.2	E SIDE NEVADA AVE, 150' S OF RR CROSSING	1.5'x2'	GRATE			CITY					
99 - PIP - 183	136.0/319.2	FROM 99-PIP-180/99-PIP-181 TO 99-PIP-184					CITY					
99 - PIP - 184	136.0/319.2	FROM 99-PIP-183 TO 99-INL-185	18"	RCP		35'	CITY					
99 - INL - 185	136.0/319.2	E SIDE NEVADA AVE & N OF RR CROSSING	1.5'x2'	GRATE			CITY					
99 - PIP - 186	136.0/319.2	FROM 99-PIP-183/99-PIP-184 TO 99-PIP-187					CITY				POSSIBLE WYE CONNECTION	
99 - PIP - 187	136.0/319.2	FROM 99-PIP-186 TO 99-INL-188	18"	RCP		10'	CITY					
99 - INL - 188	136.0/319.2	W SIDE OF MEDIAN OF NEVADA AVE, N OF RR	1.5'x2'	GRATE			CITY					
99 - PIP - 189	136.0/319.2	FROM 99-PIP-186/99-PIP-187 TO 99-PIP-190										
99 - PIP - 190	136.0/319.2	FROM 99-PIP-189 TO 99-INL-191	12"	RCP		70'						
99 - INL - 191	136.0/319.2	NEVADA AVE ON RAMP, S OF VICTORIA ST	3'x2'	GRATE								
99 - PIP - 192	136.0/319.2	FROM 99-INL-191 TO 99-INL-193	12"	RCP		15'						
99 - INL - 193	136.0/319.2	E OF 99-INL-191	2.5'	D-10-R								
99 - PIP - 194	136.0/319.2	FROM 99-PIP-189/99-PIP-190 TO 99-PIP-195					CITY				POSSIBLE WYE CONNECTION	
99 - PIP - 195	136.0/319.2	FROM 99-PIP-194 TO 99-INL-196	12"	RCP		20'	CITY					
99 - INL - 196	136.0/319.2	W SIDE NEVADA AVE, 180' N OF RR CROSSING	1.5'x2'	GRATE			CITY					
99 - PIP - 197	136.0/319.2	FROM 99-PIP-194/99-PIP-195 TO 99-PIP-198					CITY				POSSIBLE WYE CONNECTION	
99 - PIP - 198	136.0/319.2	FROM 99-PIP-197 TO 99-INL-199	18"	RCP		25'	CITY					
99 - INL - 199	136.0/319.2	E SIDE NEVADA AVE, 200' N OF RR CROSSING	2'	D-10-R			CITY				WITH 1.5'x2' GRATE	
99 - PIP - 200	136.0/319.2	FROM 99-INL-199 TO 99-INL-201	12"	RCP		60'	CITY					

STRUCTURE NUMBER	MAP #	LOCATION DESCRIPTION	SIZE	TYPE	SLOPE	LENGTH	MAINTAIN RESPONSIBLE	PIPE CHARACT.	SPILLWAY CHARACT.	CONDITION	REMARKS	JURISDICTION NO.
99 - INL - 201	136.0/319.2	SE CORNER OF NEVADA ON RAMP & VICTORIA ST	3'x2'	GRATE			CITY					
99 - PIP - 202	136.0/319.2	FROM 99-PIP-197/99-PIP-198 TO 99-PIP-203					CITY					
99 - PIP - 203	136.0/319.2	FROM 99-PIP-202 TO 99-INL-204	18"	RCP		45'	CITY				POSSIBLE WYE CONNECTION	
99 - PIP - 204	136.0/319.2	W SIDE NEVADA AVE ON RAMP @ FOUNTAIN BLVD	2'x1.5'	GRATE			CITY					
99 - PIP - 205	136.0/319.2	FROM 99-INL-204 TO 99-INL-206	12"	RCP		15'	CITY					
99 - INL - 206	136.0/319.2	E SIDE NEVADA AVE ON RAMP NEAR 99-INL-204	2'x1.5'	GRATE			CITY					
99 - PIP - 207	136.0/319.2	FROM 99-PIP-202/99-PIP-203 TO 99-INL-208					CITY					
99 - INL - 208	136.0/319.2	E SIDE NEVADA AVE, & 480' N OF RR CROSSING	2'x1.5'	GRATE			CITY					
99 - PIP - 209	136.0/319.2	FROM 99-INL-208 TO 99-INL-210	18"	RCP		45'	CITY					
99 - INL - 210	136.0/319.2	@ NE COR OF FOUNTAIN BLVD & NEVADA ON-RAMP	2'x1.5'	GRATE			CITY					
99 - PIP - 211	136.0/319.2	FROM 99-INL-208 TO 99-INL-212	12"	RCP		60'	CITY					
99 - INL - 212	136.0/319.2	200' N OF VICTORIA ST, W SIDE NEVADA AVE	2'x1.5'	GRATE			CITY					
99 - PIP - 213	136.0/319.2	FROM 99-INL-212 TO 99-INL-214	12"	RCP		50'	CITY					
99 - INL - 214	136.0/319.2	END OF FOUNTAIN BLVD W OF NEVADA AVE	2'x1.5'	GRATE			CITY					
99 - PIP - 215	136.0/319.2	FROM 99-INL-208 TO LAS ANIMAS ST & NEVADA AVE					CITY					
99 - PIP - 216	136.0/319.2	FROM 99-PIP-215 @ LAS ANIMAS TO 99-INL-217					CITY				LOCATION IN STREET UNKNOWN	
99 - INL - 217	136.0/319.2	@ TIP OF MEDIAN @ N SIDE OF LAS ANIMAS	2'	D-10-R			CITY				CONNECTION CONFIGURATION UNKNOWN	
99 - PIP - 218	136.0/319.2	FROM 99-PIP-215 @ LAS ANIMAS TO 99-INL-219					CITY			PLUGGED	WITH 2'x2' GRATE	
99 - INL - 219	136.0/319.2	E SIDE NEVADA AVE @ LAS ANIMAS	10'	D-10-R			CITY				CONNECTION CONFIGURATION UNKNOWN	
99 - PIP - 220	136.0/319.2	FROM 99-PIP-215 @ LAS ANIMAS TO 99-INL-221	12"	RCP		100'	CITY				UNDER CONSTRUCTION	
99 - INL - 221	136.0/319.2	@ NW CORNER OF NEVADA & LAS ANIMAS	2.5"	D-10-R			CITY					
99 - PIP - 222	136.0/319.2	NEVADA AVE FROM LAS ANIMAS TO RIO GRANDE ST					CITY					
99 - PIP - 223	136.0/319.2	FROM 99-PIP-222 TO 99-INL-224					CITY				LOCATION IN STREET UNKNOWN	
99 - INL - 224	136.0/319.2	@ TIP OF MEDIAN @ N SIDE OF RIO GRANDE ST	2'	D-10-R			CITY				CONNECTION CONFIGURATION UNKNOWN	
99 - PIP - 225	136.0/319.2	FROM 99-PIP-222 TO 99-INL-226					CITY			PLUGGED	WITH 2'x2' GRATE	
99 - INL - 226	136.0/319.2	@ NE CORNER OF NEVADA & RIO GRANDE ST	2'	D-10-R			CITY				CONNECTION CONFIGURATION UNKNOWN	
99 - PIP - 227	136.0/319.2	FROM 99-PIP-222 TO 99-INL-228	12"	TILE			CITY			PLUGGED		
99 - INL - 228	136.0/319.2	@ NW CORNER OF NEVADA & RIO GRANDE ST	3'	D-10-R			CITY				CONNECTION CONFIGURATION UNKNOWN	
99 - PIP - 229	136.0/319.2	FROM 99-PIP-222 TO MORENO AVE & NEVADA AVE					CITY					
99 - PIP - 230	136.2/319.2	FROM 99-PIP-229 TO 99-INL-231					CITY				LOCATION IN NEVADA UNKNOWN	
99 - INL - 231	136.2/319.2	@ TIP OF MEDIAN S SIDE OF MORENO AVE	2'x1.5'	GRATE			CITY				CONNECTION CONFIGURATION UNKNOWN	
99 - PIP - 232	136.2/319.2	FROM 99-PIP-229 TO 99-INL-233					CITY			PLUGGED		
99 - INL - 233	136.2/319.2	@ SW CORNER OF NEVADA & MORENO	3'	D-10-R			CITY				CONNECTION CONFIGURATION UNKNOWN	
99 - PIP - 234	136.2/319.2	FROM 99-INL-233 TO 99-INL-235	24"	CMP		70'	CITY					
99 - INL - 235	136.2/319.2	@ NW CORNER OF NEVADA & MORENO	3.7'	D-10-R			CITY					
99 - PIP - 236	136.2/319.2	FROM 99-PIP-229 TO 99-INL-237	12"	RCP			CITY					
99 - INL - 237	136.2/319.2	@ TIP OF MEDIAN, N SIDE OF MORENO	2'	D-10-R			CITY				CONNECTION CONFIGURATION UNKNOWN	
99 - PIP - 238	136.2/319.2	FROM 99-PIP-229 TO 99-INL-239					CITY					
99 - INL - 239	136.2/319.2	@ TIP OF MEDIAN, S SIDE OF CIMARRON ST	3'x2'	GRATE			CITY				ASSUMED ALIGNMENT	
99 - PIP - 240	136.2/319.2	FROM 99-INL-239 TO 99-INL-241					CITY			PLUGGED		
99 - INL - 241	136.2/319.2	@ TIP OF MEDIAN, N SIDE OF CIMARRON ST	2.5	D-10-R		90'	CITY					
99 - PIP - 242	136.2/319.2	FROM 99-PIP-238 TO 99-INL-243					CITY			PLUGGED		
99 - INL - 243	136.2/319.2	W SIDE NEVADA AVE, 40' S OF CIMARRON ST	2'	D-10-R			CITY				CONNECTION CONFIGURATION UNKNOWN	
99 - PIP - 244	136.2/319.2	FROM 99-PIP-240 TO 99-INL-245	10"	RCP		65'	CITY			PLUGGED		
99 - INL - 245	136.2/319.2	@ NW CORNER OF NEVADA & CIMARRON	2'x1.5'	GRATE			CITY					
99 - PIP - 246	136.2/319.2	FROM 99-INL-241 TO 99-INL-247					CITY					
99 - INL - 247	136.2/319.2	@ TIP OF MEDIAN S SIDE OF COSTILLA ST	3'x2'	GRATE			CITY				ASSUMED ALIGNMENT	
99 - PIP - 248	136.2/319.2	FROM 99-INL-247 TO 99-INL-249	15"	TILE		85'	CITY			PLUGGED		
99 - INL - 249	136.2/319.2	@ TIP OF MEDIAN, N SIDE OF COSTILLA ST	2'	D-10-R			CITY					
99 - PIP - 250	136.2/319.2	FROM 99-PIP-246 TO 99-INL-251					CITY				CONNECTION CONFIGURATION UNKNOWN	

STRUCTURE NUMBER	MAP #	LOCATION DESCRIPTION	SIZE	TYPE	SLOPE	LENGTH	MAINTAIN RESPONSIBLE	PIPE CHARACT.	SPILLWAY CHARACT.	CONDITION	REMARKS	JURISDICTION NO.
99 - INL - 251	136.2/319.2	W SIDE NEVADA AVE 25' S OF COSTILLA ST	2'	D-10-R			CITY			PLUGGED		
99 - PIP - 252	136.2/319.2	FROM 99-INL-251 TO 99-INL-253	15"	RCP			CITY				ALIGNMENT ASSUMED	
99 - INL - 253	136.2/319.2	@ NW CORNER OF COSTILLA & NEVADA	2'x1.5'	GRATE			CITY					
99 - PIP - 254	136.2/319.2	FROM 99-INL-253 TO ?	15"	TILE			CITY				PIPE INLET UNKNOWN	
99 - PIP - 255	136.2/319.2	FROM 99-INL-249 TO ?	15"	TILE			CITY				PIPE INLET UNKNOWN	
99 - PIP - 256	135.8/319.2	FROM FOUNTAIN CRK 180' W OF NEVADA	24"	CMP		70'	CITY					
99 - INL - 257	135.8/319.2	IN DORCHESTER PARK 180' W OF NEVADA AVE	4'	TYPE R			CITY				2.1x1.5' GRATE IN LID	
99 - CHA - 258	135.8/319.2	FROM 99-INL-257 TO N THROUGH PARK	0'x0.5'x7.5'	CONC1		410'	CITY					
99 - PIP - 259	135.8/319.2	FROM FTN CRK @ TEJON ST TO 99-PIP-260					CITY				POSSIBLE WYE CONNECTION	
99 - PIP - 260	135.8/319.2	FROM 99-PIP-259 TO 99-INL-261	24"	CMP		25'	CITY					
99 - INL - 261	135.8/319.2	W SIDE TEJON ST 70' S OF LAS VEGAS ST	4'	D-10-R			CITY					
99 - PIP - 262	135.8/319.2	FROM 99-INL-261 TO 99-INL-263	12"	CMP			CITY				ASSUMED ALIGNMENT	
99 - INL - 263	135.8/319.2	E SIDE TEJON OPPOSITE 99-INL-261	4'	D-10-R			CITY					
99 - PIP - 264	135.8/319.2	FROM 99-PIP-259/99-PIP-260 TO 99-PIP-265					CITY				POSSIBLE WYE CONNECTION	
99 - PIP - 265	135.8/319.2	FROM 99-PIP-264 TO 99-INL-266	12"	RCP		20'	CITY					
99 - INL - 266	135.8/319.2	@ NW CORNER TEJON ST AND LAS VEGAS ST	3'	D-10-R			CITY					
99 - PIP - 267	135.8/319.2	FROM 99-PIP-264/99-PIP-265 TO 99-PIP-268					CITY				POSSIBLE WYE CONNECTION	
99 - PIP - 268	135.8/319.2	FROM 99-PIP-267 TO 99-INL-269					CITY				ASSUMED ALIGNMENT	
99 - INL - 269	135.8/319.2	@ NE CORNER TEJON ST & LAS VEGAS ST	4'	D-10-R			CITY			FULL OF DIRT		
99 - PIP - 270	135.8/319.2	FROM 99-PIP-267/99-PIP-268 TO 99-PIP-271					CITY				POSSIBLE WYE CONNECTION	
99 - PIP - 271	135.8/319.2	FROM 99-PIP-270 TO 99-INL-272	12"	CMP			CITY				ASSUMED ALIGNMENT	
99 - INL - 272	135.8/319.2	E SIDE TEJON ST, 70' N OF LAS VEGAS ST	7'	D-10-R			CITY			BROKEN LID		
99 - PIP - 273	135.8/319.2	FROM 99-PIP-270/99-PIP-271 TO 99-INL-274	24"	RCP			CITY				ASSUMED ALIGNMENT	
99 - INL - 274	135.8/319.2	W SIDE TEJON ST, 125' N OF LAS VEGAS ST	3.5'x7.5'	GRATE			CITY					
99 - PIP - 275	135.8/319.2	FROM 99-INL-274 TO ?	15"	RCP			CITY				PIPE TO ENTRANCE UNKNOWN	
99 - PIP - 276	135.8/319.2	FROM 99-INL-274 TO 99-PIP-277	24"	RCP			CITY				POSSIBLE WYE CONNECTION	
99 - PIP - 277	135.8/319.2	FROM 99-PIP-276 TO 99-INL-278				15'	CITY					
99 - INL - 278	135.8/319.2	@ SE CORNER OF TEJON ST & MILL ST	7'	D-10-R			CITY					
99 - PIP - 279	135.8/319.2	FROM 99-PIP-276 TO 99-INL-280	12"			55'	CITY				POSSIBLE WYE CONNECTION	
99 - INL - 280	135.8/319.2	@ SW CORNER OF TEJON ST & MILL ST	3'	D-10-R			CITY					
99 - PIP - 281	135.8/319.2	FROM 99-PIP-279/99-PIP-276 TO 99-MAN-282					CITY				ALSO ON MAP 136.0/319.2	
99 - MAN - 282	136.0/319.2	@ INTERSECTION OF TEJON ST & MILL ST					CITY					
99 - PIP - 283	136.0/319.2	FROM 99-PIP-281 TO 99-INL-284					CITY				ASSUMED ALIGNMENT	
99 - INL - 284	136.0/319.2	@ NW CORNER OF TEJON ST & MILL ST	4'	D-10-R			CITY					
99 - PIP - 285	136.0/319.2	FROM 99-INL-284 TO 99-INL-286	18"			15'	CITY					
99 - INL - 286	136.0/319.2	W SIDE TEJON ST JUST N OF 99-INL-284	6'	D-10-R			CITY					
99 - PIP - 287	136.0/319.2	FROM 99-INL-286 TO ?	18"	RCP			CITY				ENTRANCE UNKNOWN	
99 - PIP - 288	136.0/319.2	FROM 99-MAN-282 TO 99-INL-289					CITY				ASSUMED ALIGNMENT	
99 - INL - 289	136.0/319.2	@ NE CORNER OF TEJON ST & MILL ST	3'	D-10-R			CITY					
99 - PIP - 290	136.0/319.2	FROM 99-MAN-282 TO 99-PIP-291					CITY				POSSIBLE WYE CONNECTION	
99 - PIP - 291	136.0/319.2	FROM 99-PIP-290 TO 99-INL-292	12"				CITY				CONNECTION CONFIGURATION UNKNOWN	
99 - INL - 292	136.0/319.2	CENTER TEJON ST JUST N OF RR CROSSING	3.4'x2.4'	GRATE			CITY					
99 - PIP - 293	136.0/319.2	FROM 99-PIP-290/99-PIP-291 TO 99-PIP-294					CITY				POSSIBLE WYE CONNECTION	
99 - PIP - 294	136.0/319.2	FROM 99-PIP-293 TO 99-INL-295	18"	CMP			CITY				ASSUMED ALIGNMENT	
99 - INL - 295	136.0/319.2	W SIDE TEJON ST & JUST N OF RR CROSSING	18'	D-10-R			CITY				WITH 2.5'x2' GRATE	
99 - PIP - 296	136.0/319.2	FROM 99-INL-295 TO ?	36"	CMP							PIPE INLET UNKNOWN	
99 - PIP - 297	136.0/319.2	FROM 99-INL-295 TO ?	24"	CMP							PIPE INLET UNKNOWN	
99 - PIP - 298	136.0/319.2	FROM 99-PIP-293/99-PIP-294 TO 99-PIP-299					CITY				POSSIBLE WYE CONNECTION	
99 - PIP - 299	136.0/319.2	FROM 99-PIP-298 TO 99-INL-300	18"	CMP		10'	CITY					
99 - INL - 300	136.0/319.2	CENTER TEJON ST @ S SIDE OF TEJON & FOUNTAIN	2.5'x1.5'	GRATE			CITY					

STRUCTURE NUMBER	MAP #	LOCATION DESCRIPTION	SIZE	TYPE	SLOPE	LENGTH	MAINTAIN RESPONSIBLE	PIPE CHARACT.	SPILLWAY CHARACT.	CONDITION	REMARKS	JURISDICTION NO.
99 - PIP - 301	136.0/319.2	FROM 99-PIP-298/99-PIP-299 TO 99-PIP-302					CITY					
99 - PIP - 302	136.0/319.2	FROM 99-PIP-301 TO 99-INL-303	10"	CMP		15'	CITY				POSSIBLE WYE CONNECTION	
99 - INL - 303	136.0/319.2	@ SE CORNER OF TEJON ST & FOUNTAIN BLVD	2'x1.5'	GRATE			CITY					
99 - PIP - 304	136.0/319.2	FROM 99-PIP-301 TO 99-INL-305					CITY				ASSUMED ALIGNMENT	
99 - INL - 305	136.0/319.2	@ SW CORNER OF TEJON ST & FOUNTAIN BLVD.	2'x1.5'	GRATE			CITY					
99 - PIP - 306	136.0/319.2	FROM 99-INL-305(OR 99-PIP-301) TO 99-INL-307	18"	TILE			CITY				CONNECTION CONFIGURATION UNKNOWN	
99 - INL - 307	136.0/319.2	@ NW CORNER OF TEJON ST & FOUNTAIN BLVD.	2.5'	D-10-R			CITY					
99 - CHA - 308	136.0/319.2	FROM 99-INL-307 ALONG W SIDE OF TEJON	2.5'x2.5'x1.5'	CONC1		215'	CITY				DEPTH VARIES	
99 - PIP - 309	136.0/319.2	FROM 99-INL-303(OR 99-PIP-301) TO 99-CHA-310	18"	TILE		60'	CITY				CONCRETE HEADWALL @ ENTRANCE	
99 - CHA - 310	136.0/319.2	@ TEJON & FOUNTAIN BLVD ALONG E SIDE TEJON	2.5'x2.5'x1.5'	CONC1		210'	CITY				DEPTH VARIES	
99 - PIP - 311	136.0/319.2	FROM 99-PIP-301/99-PIP-302 TO 99-PIP-312					CITY				POSSIBLE WYE CONNECTION	
99 - PIP - 312	136.0/319.2	FROM 99-PIP-311 TO 99-INL-313	14"	CMP			CITY				ASSUMED ALINGMENT	
99 - INL - 313	136.0/319.2	E SIDE OF TEJON ST S OF LAS ANIMAS ST	7'	D-10-R			CITY					
99 - PIP - 314	136.0/319.2	FROM 99-PIP-311/99-PIP-312 TO 99-PIP-315					CITY				POSSIBLE WYE CONNECTION	
99 - PIP - 315	136.0/319.2	FROM 99-PIP-314 TO 99-INL-316	12"	RCP			CITY				ASSUMED ALIGNMENT	
99 - INL - 316	136.0/319.2	@ NW CORNER TEJON ST & LAS ANIMAS ST	2.5'	D-10-R			CITY					
99 - PIP - 317	136.0/319.2	FROM 99-PIP-314 (?) TO 99-INL-318					CITY				CONNECTION CONFIGURATION UNKNOWN	
99 - INL - 318	136.0/319.2	@ NE CORNER TEJON ST & LAS ANIMAS ST	7'	D-10-R			CITY					
99 - PIP - 319	136.0/319.2	FROM 99-PIP-314/99-PIP-315 TO 99-PIP-320					CITY				POSSIBLE WYE CONNECTION	
99 - PIP - 320	136.0/319.2	FROM 99-PIP-319 TO 99-INL-321	12"	TILE			CITY				ASSUMED ALIGNMENT	
99 - INL - 321	136.0/319.2	@ NW CORNER OF TEJON ST & RIO GRANDE ST	2.5'	D-10-R			CITY					
99 - PIP0 - 322	136.0/319.2	FROM 99-PIP-319 (?) TO 99-INL-323					CITY				CONNECTION CONFIGURATION UNKNOWN	
99 - INL - 323	136.0/319.2	E SIDE TEJON ST S OF RIO GRANDE ST	7'	D-10-R			CITY					
99 - PIP - 324	136.0/319.2	FROM 99-PIP-319 (?) TO 99-INL-325					CITY				CONNECTION CONFIGURATION UNKNOWN	
99 - INL - 325	136.0/319.2	@ NE CORNER OF TEJON ST & RIO GRANDE ST	7'	D-10-R			CITY					
99 - PIP - 326	136.0/319.2	FROM 99-PIP-319/99-PIP-320 TO 99-PIP-327					CITY				POSSIBLE WYE CONNECTION	
99 - PIP - 327	136.0/319.2	FROM 99-PIP-326 TO 99-INL-328	15"	CMP			CITY				ASSUMED ALIGNMENT	
99 - INL - 328	136.0/319.2	W SIDE TEJON ST S OF MORENO AVE	7'	D-10-R			CITY					
99 - PIP - 329	136.0/319.2	FROM 99-PIP-324/99-PIP-325 TO 99-PIP-330					CITY				ALSO ON MAP 136.2/319.2	
99 - PIP - 330	136.2/319.2	FROM 99-PIP-329 TO 99-INL-331	18"x24"				CITY				ASSUMED ALIGNMENT	
99 - INL - 331	136.2/319.2	@ SE CORNER TEJON ST & MORENO AVE	7'	D-10-R			CITY					
99 - PIP - 332	136.2/319.2	FROM 99-PIP-329/99-PIP-330 TO 99-PIP-333					CITY				POSSIBLE WYE CONNECTION	
99 - PIP - 333	136.2/319.2	FROM 99-PIP-332 TO 99-INL-334	18"	TILE			CITY				ASSUMED ALIGNMENT	
99 - INL - 334	136.2/319.2	E SIDE TEJON ST & N OF MORENO AVE	2.5'	D-10-R			CITY					
99 - PIP - 335	136.2/319.2	FROM 99-PIP-332 TO 99-INL-336					CITY				CONNECTION CONFIGURATION UNKNOWN	
99 - INL - 336	136.2/319.2	@ NW CORNER OF TEJON ST & MORENO AVE	2'	D-10-R			CITY			PLUGGED	WITH GRATE ALSO	
99 - PIP - 337	136.2/319.2	FROM 99-PIP-332/99-PIP-333 TO 99-PIP-338					CITY				POSSIBLE WYE CONNECTION	
99 - PIP - 338	136.2/319.2	FROM 99-PIP-337 TO 99-INL-339	14"	RCP			CITY				ASSUMED ALIGNMENT	
99 - INL - 339	136.2/319.2	@ NW CORNER TEJON ST & CIMARRON ST	2'x1.5'	GRATE			CITY					
99 - PIP - 340	136.2/319.2	FROM 99-PIP-337 TO 99-INL-341					CITY				CONNECTION CONFIGURATION UNKNOWN	
99 - INL - 341	136.2/319.2	@ SW CORNER TEJON ST & CIMMARON ST	2.5'	D-10-R			CITY					
99 - PIP - 342	136.2/319.2	FROM 99-PIP-337/99-PIP-338 TO 99-PIP-343					CITY				POSSIBLE WYE CONNECTION	
99 - PIP - 343	136.2/319.2	FROM 99-PIP-342 TO 99-INL-344	12"	RCP			CITY				ASSUMED ALIGNMENT	
99 - INL - 344	136.2/319.2	@ NE CORNER TEJON ST & CIMARRON ST	3'	D-10-R			CITY					
99 - PIP - 345	136.2/319.2	FROM 99-PIP-342/99-PIP-343 TO 99-PIP-346					CITY				POSSIBLE WYE CONNECTION	
99 - PIP - 346	136.2/319.2	FROM 99-PIP-345 TO 99-INL-347					CITY				CONNECTION CONFIGURATION UNKNOWN	
99 - INL - 347	136.2/319.2	@ SW CORNER TEJON ST & COSTILLA ST	2.5'	D-10-R			CITY					
99 - PIP - 348	136.2/319.2	FROM 99-INL-347 TO 99-INL-349	12"				CITY				ASSUMED ALIGNMENT	
99 - INL - 349	136.2/319.2	@ NW CORNER TEJON ST & COSTILLA ST	2.5'	D-10-R			CITY					
99 - PIP - 350	136.2/319.2	FROM 99-PIP-345/99-PIP-346 TO 99-INL-351					CITY				CONNECTION CONFIGURATION UNKNOWN	

STRUCTURE NUMBER	MAP #	LOCATION DESCRIPTION	SIZE	TYPE	SLOPE	LENGTH	MAINTAIN RESPONSIBLE	PIPE CHARACT.	SPILLWAY CHARACT.	CONDITION	REMARKS	JURISDICTION NO.
99 - INL - 351	136.2/319.2	@ NE CORNER OF TEJON ST & COSTILLA ST	2.5'	D-10-R			CITY					
99 - PIP - 352	136.0/319.2	FROM ? TO 99-INL-353					CITY				PROBABLE END TO TEJON SYSTEM	
99 - INL - 353	136.0/319.2	N SIDE MILL ST @ ALLEY W OF TEJON ST	4'	D-10-R			CITY				OUTFALL & SIZE UNKNOWN	
99 - PIP - 354	135.8/319.2	FROM FTN CREEK 330' W OF TEJON ST TO N	24"			75'	PRIVATE					
99 - CHA - 355	136.0/319.2	FROM 99-INL-295 W 160' TO 99-CHA-356		NAT		160'	CITY				NOT FIELD VERIFIED	
99 - CHA - 356	136.0/319.2	FROM 99-CHA-355 TO 99-PIP-381 ALONG RR	1.5'x2.75'x7'	CONC		860'	CITY				SITE VARIES	
99 - PIP - 357	136.0/319.2	FROM 99-CHA-355 TO 99-INL-358	14"	TILE		65'	CITY				ALSO ON MAP 136.0/319.0	
99 - INL - 358	136.0/319.2	@ END OF CASCADE ST JUST N OF D&RGW RR	2.5'	D-10-R			CITY					
99 - PIP - 359	136.0/319.2	FROM 99-INL-358 TO 99-INL-360	18"/12"				CITY				ASSUMED ALIGNMENT WITH SIZE CHANGE	
99 - INL - 360	136.0/319.2	@ NE CORNER CASCADE AVE & FOUNTAIN BLVD	3'	D-10-R			CITY					
99 - PIP - 361	136.0/319.2	FROM 99-INL-360 TO 99-MAN-362	12"	PVC		20'	CITY					
99 - MAN - 362	136.0/319.2	E SIDE OF CASCADE AVE, N OF 99-INL-360					CITY					
99 - PIP - 363	136.0/319.2	FROM 99-MAN-362 N TO ?	12"	STEEL			CITY				PIPE ENTRANCE UNKNOWN	
99 - PIP - 364	136.0/319.2	FROM 99-INL-358 TO 99-INL-365	8"	TILE		30'	CITY					
99 - INL - 365	136.0/319.2	@ S END OF MEDIAN OPPOSITE 99-INL-358	2.5'	D-10-R			CITY					
99 - PIP - 366	136.0/319.2	FROM 99-INL-365 TO 99-INL-367	10"/12"	TILE			CITY				ASSUMED ALIGNMENT	
99 - INL - 367	136.0/319.2	@ MEDIAN @ N SIDE OF CASCADE	2.5'	D-10-R			CITY					
99 - PIP - 368	136.0/319.2	FROM 99-INL-367 TO 99-INL-369	12"	TILE			CITY				ASSUMED ALIGNMENT	
99 - INL - 369	136.0/319.2	@ MEDIAN @ N SIDE OF CASCADE & LAS ANIMAS	2.5'	D-10-R			CITY					
99 - PIP - 370	136.0/319.2	FROM 99-INL-369 TO 99-MAN-371	12"	TILE		45'	CITY					
99 - MAN - 371	136.0/319.2	@ NE CORNER CASCADE & LAS ANIMAS					CITY					
99 - PIP - 372	136.0/319.2	FROM 99-INL-369 TO 99-INL-373	12"	TILE			CITY				ASSUMED ALIGNMENT	
99 - INL - 373	136.0/319.2	@ MEDIAN @ N SIDE OF CASCADE & RIO GRANDE	2.5'	D-10-R			CITY					
99 - PIP - 374	136.0/319.2	FROM 99-INL-373 TO 99-MAN-375	10"	TILE		45'	CITY					
99 - MAN - 375	136.0/319.2	@ NE CORNER CASCADE & RIO GRANDE										
99 - PIP - 376	136.0/319.2	FROM 99-MAN-375 TO 99-MAN-377	2 @ 12"	CMP							GATE TO EAST	
99 - MAN - 377	136.2/319.2	@ SE CORNER OF CASCADE & MORENO AVE									ALSO ON MAP 136.2/319.2	
99 - PIP - 378	136.2/319.2	FROM 99-MAN-377 TO 99-INL-379	12"	RCP							GATE TO EAST	
99 - INL - 379	136.2/319.2	N SIDE MORENO BETWEEN CASCADE & TEJON ST	2.5'x1.5'	GRATE							CONNECTION CONFIGURATION UNKNOWN	
99 - PIP - 380	136.2/319.2	FROM 99-INL-379 TO ?	10"	RCP								
99 - PIP - 381	136.0/319.0	FROM 99-CHA-356 TO 99-INL-382	24"	CMP		45'	CITY				ENTRANCE TO PIPE UNKNOWN	
99 - INL - 382	136.0/319.2	@ S END SAHWATCH ST N OF D&RGW RR	10'	D-10-R			CITY					
99 - PIP - 383	135.8/319.0	@ FTN CRK 665' W OF TEJON TO 99-INL-384	30"	CMP		65'	PRIVATE				1.5'x1.5' GRATE IN LID	
99 - INL - 384	135.8/319.0	@ 500' S OF LAS VEGAS & 665' W OF TEJON	3'x7.5'	GRATE			PRIVATE				NOT FIELD VERIFIED	
99 - CHA - 385	135.8/319.0	FROM N SIDE LAS VEGAS ST TO 99-PIP-386	6'x0.67'x6'	CONC1		190'					NOT FIELD VERIFIED	
99 - PIP - 386	135.8/319.0	FROM 99-CHA-385 TO S END OF SAHWATCH ST	18"/18"x30"	RCP		75'					OUT TO TEJON THEN TO 99-INL-384	
99 - PIP - 387	135.8/319.0	FROM FOUNTAIN CRK TO 99-INL-388	24"	RCP			CITY					
99 - INL - 388	135.8/319.0	@ S SIDE LAS VEGAS ST 1360' W OF TEJON ST	8'	D-10-R			CITY				OUTFALL @ CREEK NOT FOUND	
99 - PIP - 389	135.8/319.0	FROM 99-INL-388 TO 99-INL-390	12"x18"			50'	CITY					
99 - INL - 390	135.8/319.0	@ N SIDE LAS VEGAS OPPOSITE 99-INL-388	8'	D-10-R							ASSUMED ALIGNMENT	
99 - PIP - 391	135.8/319.0	@ 450' S OF LAS VEGAS & SIERRA MADRE	2 @ 12"	CMP		40'	CITY					
99 - PIP - 392	135.8/319.0	275' S OF CONEJOS ST & MILL ST	2 @ 24"	CMP		40'	CITY					
99 - PIP - 393	136.0/318.8	FROM FOUNTAIN CRK TO 99-PIP-394 & 99-PIP-395	2 @ 30"	CMP		50'	CITY				CONCRETE & RIPRAP @ ENTRANCE	
99 - PIP - 394	136.0/318.8	FROM 99-PIP-393 TO ?	2 @ 60"	CMP			CITY					
99 - PIP - 395	136.0/318.8	FROM 99-PIP-393 TO ?	42"	CMP			CITY				ENTRANCE LOCATION UNKNOWN	
99 - PIP - 396	136.0/318.8	FROM 99-PIP-395 (?) TO 99-INL-397	24"	CMP			CITY				CONFIGURATION UNKNOWN	
99 - INL - 397	136.0/319.0	W SIDE SIERRA MADRE ST @ FOUNTAIN BLVD	9'	D-10-R			CITY				CONNECTION CONFIGURATION UNKNOWN	
99 - PIP - 398	136.0/319.0	FROM 99-INL-397 TO 99-INL-399	10"	CMP		50'	CITY					
99 - INL - 399	136.0/319.0	@ SE CORNER OF SIERRA MADRE & FOUNTAIN	2'x1.5'	GRATE			CITY				ASSUMED ALIGNMENT	
99 - PIP - 400	136.0/319.0	FROM 99-INL-399 TO 99-INL-401	10"	CMP		65'	CITY					

STRUCTURE NUMBER	MAP #	LOCATION DESCRIPTION	SIZE	TYPE	SLOPE	LENGTH	MAINTAIN RESPONSIBLE	PIPE CHARACT.	SPILLWAY CHARACT.	CONDITION	REMARKS	JURISDICTION NO.
99 - INL - 401	136.0/319.0	@ NE CORNER OF SIERRA MADRE & FOUNTAIN	2'x1.5'	GRATE			CITY					
99 - PIP - 402	136.0/318.8	FROM E SIDE FOUNTAIN CRK TO ?	18"	CMP							ENTRANCE TO PIPE UNKNOWN	
99 - PIP - 403	136.0/318.8	FROM E SIDE FOUNTAIN CRK TO ?	8"	CMP							ENTRANCE TO PIPE UNKNOWN	
99 PIP - 404	136.2/318.8	FROM E SIDE FOUNTAIN CRK TO 99-MAN-406	12"	CMP							ENTRANCE TO PIPE UNKNOWN	
99 PIP - 405	136.2/318.8	@ POWER PLANT 400' S OF CIMARRON	30"	CMP			CITY				CONNECTION CONFIGURATION ASSUMED	
99 MAN - 406	136.2/319.0	FROM 99-MAN-406 TO 99-INL-408					CITY				NOT FIELD VERIFIED	
99 - PIP - 407	136.2/319.0	W SIDE CONEJOS ST & 500' S OF CIMARRON ST	18"	CMP			CITY				ASSUMED ALIGNMENT	
99 - INL - 408	136.2/319.0	FROM 99-MAN-406 TO 99-INL-410	4'	D-10-R			CITY					
99 - PIP - 409	136.2/319.0	W SIDE CONEJOS ST, 250' S OF CIMARRON ST	18"	CMP			CITY				ASSUMED ALIGNMENT	
99 - INL - 410	136.2/319.0	STA. 33+00	4'	D-10-R			CITY					
99 - CHA - 1000	135.0/320.2	CIRCLE DR OVERPASS @ STA. 35+00 (EASTBOUND)	VARIES	RIP2		40'					RIPRAP APRON FOR CONC CHANNEL	
99 - BRI - 1001	135.0/320.2	CIRCLE DR OVERPASS @ STA. 35+00 (WESTBOUND)		MSPAN		360'					ROCK GABIONS @ EAST ABUT	
99 - BRI - 1002	135.2/320.2	FOUNTAIN CRK. STA. 37+00 (RT. SIDE)		MSPAN		360'						
99 - CHA - 1003	135.2/320.2	FROM STA. 37+00 TO STA. 37+60 (RT. SIDE)	VARIES	RIP2								
99 - CHA - 1004	135.0/320.2	STA. 42+00 (RT. SIDE)	VARIES	RIP2		60'					ROCK GABION BANK CUTOFF WALL	
99 - CHA - 1005	135.2/320.0	FROM STA. 64+25 TO STA. 64+75 (RT. SIDE)	VARIES	RIP2		30'					1/2 RIPRAP & 1/2 ROCK GABION	
99 - CHA - 1006	135.2/320.0	JANITELL RD OVERPASS @ STA. 67+30	VARIES	RIP2		50'					RIPRAP APRON @ 72" RCP OUTFALL	
99 - BRI - 1007	135.2/320.0	STA. 67+50 (LT. SIDE)		MSPAN		300'					LOOSE RIPRAP @ ELECTRIC TOWER	
99 - CHA - 1008	135.4/319.8	STA. 87+80 (170' LEFT)	48"	CONC		8'					RIPRAP @ ABUTMENTS	
99 - DRP - 1009	135.4/319.8	US 24 BYPASS ON RAMP @ FTN CR STA. 94+00	H=4'	CONC		50'					48" FLARED END SECTION	
99 - BRI - 1010	135.4/319.8	@ CONFLUENCE w/WASTEWATER DIVERSION CANA		MSPAN		710'				OLD	DROP/DIVERSION STRUCTURE	
99 - CHA - 1011	135.4/319.8	FROM STA. 98+60 TO STA. 100+60 (LT. SIDE)	VARIES	RIP2		50'						
99 - CHA - 1012	135.4/319.8	FROM STA. 100+25 TO STA. 105+00 (RT. SIDE)	VARIES	RIP2		200'					LARGE BOULDERS OPPOSITE CONFLUENCE	
99 - CHA - 1013	135.4/319.8	U.S. 24 BYPASS @ STA. 102+00	VARIES	RIP2		475'					WIRE MESH OVER RIPRAP	
99 - BRI - 1014	135.6/319.6	FROM STA. 111+10 TO STA. 115+50 (LT. SIDE)		MSPAN							WIRE MESH OVER RIRPAP	
99 - CHA - 1015	135.6/319.6	FROM STA. 115+50 TO STA. 120+80 (LT. SIDE)	VARIES	RIP2		440'					ELEVATED	
99 - CHA - 1016	135.6/319.6	FROM STA. 116+30 TO STA. 116+80 (RT. SIDE)	VARIES	RIP2		530'					WIRE MESH OVER RIPRAP	
99 - CHA - 1017	135.6/319.6	STA. 120+00 (LT. SIDE)	VARIES	RIP2		50'					WIRED RIPRAP & TIMBER WALL ABOVE	
99 - CHA - 1018	135.6/319.6	@ FOUNTAIN CRK. STA. 125+25	48"	CONC		8'					WIRED RIPRAP @ ELECTRIC TOWER	
99 - DRP - 1019	135.6/319.6	@ FOUNTAIN CRK. STA. 128+00	H=3.5',W=20'			100'					48" FLARED END SECTION	
99 - DRP - 1020	135.6/319.6	STA. 131+00 (RT. SIDE)	H=8'	CONC		150'					GROUTED ROCK VERTICAL DROP	
99 - CHA - 1021	135.8/319.4	FROM STA. 132+30 TO STA. 151+50 (RT. SIDE)	VARIES	UNL		35'					DIVERTS FOUNTAIN CRK INTO CANAL	
99 - CHA - 1022	135.8/319.4	@ FOUNTAIN CRK. STA. 150+00	VARIES	RIP2		1920'					12" & 18" EFFLUENT OUTFALL	
99 - DRP - 1023	135.8/319.2	FROM STA. 156+20 TO STA. 160+10 (LT. SIDE)	H=3.5',W=4'	CONC		60'				POOR	INTERMITTENT RUBBLE ALONG BANK	
99 - CHA - 1024	135.8/319.2	FROM STA. 162+10 TO STA. 163+40 (LT. SIDE)	VARIES	RIP2		390'					CONCRETE VERTICAL DROP	
99 - CHA - 1025	135.8/319.2	STA. 165+00 (RT. SIDE)	VARIES	CONC2		130'					RIPRAP ALONG UPPER BANK	
99 - CHA - 1026	135.8/319.2	NEVADA AVE. BRIDGE @ STA. 165+80	VARIES	CONC							CONCRETE WALL HEIGHT VARIES	
99 - BRI - 1027	135.8/319.2	STA. 167+00 (LT. SIDE)		2SPAN		300'					HEADWALL @ 48" RCP OUTFALL	
99 - CHA - 1028	135.8/319.2	BETWEEN NEVADA AVE. & TEJON ST. (LT. SIDE)	VARIES	CONC								
99 - CHA - 1029	135.8/319.2	TEJON ST. BRIDGE @ STA. 171+75	VARIES	CONC2		420'					HEADWALL FOR TRIPLE 7'x9' CBC	
99 - BRI - 1030	135.8/319.2	FROM TEJON TO STA. 190+00 (LT. SIDE)		3SPAN		320'					CONCRETE WALL HEIGHT VARIES	
99 - CHA - 1031	135.8/319.2	FROM STA. 190+00 TO STA. 190+50 (LT. SIDE)	VARIES	CONC2		1780'						
99 - CHA - 1032	135.8/319.2	STA. 191+25 RT. SIDE - UNDER CONSTRUCTION	9' HIGH, 3' WIDE	RIP2		50'					CONCRETE WALL HEIGHT VARIES	
99 - CHA - 1033	135.8/319.2	STA. 194+70 (LT. SIDE)		RIP2							ROCK GABION WALLS	
99 - CHA - 1034	136.0/318.8	FROM STA. 197+00 TO STA. 213+00 (RT. SIDE)	VARIES	RIP1		150'					60" PIPE w/ROCK APRON	
99 - CHA - 1035	135.8/318.8	FROM STA. 201+40 TO STA. 202+70 (LT. SIDE)	VARIES	RIP2		1600'				POOR	RIPRAP CHANNEL, SOME GROUT	
99 - CHA - 1036	136.0/318.8	FROM STA. 207+00 TO STA. 209+00 (LT. SIDE)	VARIES	RIP2		130'					RIPRAP BANK @ POWER PLANT	
99 - CHA - 1037	136.0/318.8	FROM STA. 209+30 TO STA. 210+50 (LT. SIDE)	VARIES	RIP2		200'					GABIONS w/BROKEN CONCRETE	
99 - CHA - 1038	136.0/318.8	FROM STA. 210+00 TO CIMARRON ST. (LT. SIDE)	VARIES	RIP2		120'					GABIONS w/BROKEN CONCRETE	
99 - CHA - 1039	136.0/318.8	BEAR CRK CONFLUENCE @ STA. 213+90	VARIES	RIP2		2300'					ROCK GABION WALL	
99 - CHA - 1040	136.0/318.8		VARIES	RIP1		70'					VARYING RIPRAP PROTECTION	
											RIPRAP OUTFALL CHANNEL	

STRUCTURE NUMBER	MAP #	LOCATION DESCRIPTION	SIZE	TYPE	SLOPE	LENGTH	MAINTAIN RESPONSIBLE	PIPE CHARACT.	SPILLWAY CHARACT.	CONDITION	REMARKS	JURISDICTION NO.
99 - CHA - 1041	136.0/318.8	STA. 217+20 (LT. SIDE)	4'x1.5'x10'	RIP1		50'						
99 - DRP - 1042	136.0/318.8	@ FOUNTAIN CRK. STA. 218+90	H=2',W=8"	CONC		90'					GROUTED ROCK CHANNEL FOR 24" RCP	
99 - CHA - 1043	136.0/318.8	FROM STA. 220+10 TO STA. 220+40 (LT. SIDE)	VARIES	RIP2		30'						
99 - CHA - 1044	136.0/318.8	@ FOUNTAIN CRK. STA. 223+00 (LT. SIDE)	4'x2.5'x12'	RIP1		25'					ROCK & WIRE WALL	
99 - CHA - 1045	136.2/318.8	@ FOUNTAIN CRK. STA. 227+00 (LT. SIDE)	5'x1'x10'	RIP1		60'					GROUTED ROCK FOR 24" RCP	
99 - CHA - 1046	136.2/318.8	@ FOUNTAIN CRK. STA. 229+20 (LT. SIDE)	4'x1.5'x10'	RIP1		60'					GROUTED ROCK FOR 24" RCP	
99 - CHA - 1047	136.2/318.8	@ FOUNTAIN CRK. STA. 232+50 (LT. SIDE)	5'x3'x12'	RIP1		40'					GROUTED ROCK FOR 24" RCP	
99 - DRP - 1048	136.2/318.8	@ FOUNTAIN CRK. STA. 232+80		CONC							GROUTED ROCK FOR 24" RCP	
99 - BRI - 1049	136.2/318.8	CIMARRON ST. OVERPASS @ STA. 233+50		3SPAN		300'					FAILED DROP STRUCTURE	
99 - BRI - 1050	136.2/318.8	@ FOUNTAIN CRK. STA. 235+80		CLSPN		65'						
99 - BRI - 1051	136.2/318.8	I-25 ON-RAMP @ STA. 237+00		3SPAN		100'					PEDESTRIAN BRIDGE	
99 - BRI - 1052	136.2/318.8	I-25 OVERPASS @ STA. 238+50		MSPAN		300'						
99 - CHA - 1053	136.2/318.8	STA. 238+60 (LT. SIDE)	12"	CONC							LENGTH IS OVER CREEK & STREET	
99 - CHA - 1054	136.2/318.8	FROM STA. 240+50 TO STA. 243+90 (RT. SIDE)	VARIES	RIP2		340'					12" FLARED END SECTION	
99 - DRP - 1055	136.2/318.8	@ FOUNTAIN CRK. STA. 244+40	H=1',W-3'	CONC		40'					CONCRETE RUBBLE ALONG UPPER BANK	
99 - CHA - 1056	136.2/318.8	FROM STA. 244+50 TO STA. 245+60 (RT. SIDE)	VARIES	RIP2		110'					UTILITY CROSSING THAT CREATES DROP	
99 - BRI - 1057	136.2/318.8	U.S. HWY. 24 OVERPASS @ STA. 248+20		3SPAN		110'					VERY LARGE RIPRAP	
99 - DRP - 1058	136.2/318.6	@ FOUNTAIN CRK. STA. 255+00	H=2'	CONC		35'						
99 - BRI - 1059	136.2/318.6	8TH ST. OVERPASS @ STA. 256+80		CLSPN		70'					DROP w/PARSHALL FLUME	
99 - CHA - 1060	136.2/318.6	FROM STA. 260+00 TO STA. 265+40 (RT. SIDE)	VARIES	RIP2		550'						
99 - CHA - 1061	136.4/318.6	FROM STA. 265+50 TO STA. 269+25 (RT. SIDE)	VARIES	CONC2		375'					CONCRETE WALL @ TOP OF RIPRAP BANK	
99 - CHA - 1062	136.4/318.2	@ FOUNTAIN CRK. STA. 276+50 (LT. SIDE)	0'x0.5'x5'	CONC1		90'					CONCRETE WALL @ TOP NATURAL BANK	
99 - CHA - 1063	136.4/318.6	FROM STA. 276+50 TO STA. 278+00 (RT. SIDE)	VARIES	RIP2		150'					CONCRETE SWALE TO CREEK	
99 - CHA - 1064	136.4/318.4	STA. 283+00 (RT. SIDE)	48"	CONC		8'					12"-18" ROCK RIPRAP	
99 - CHA - 1065	136.4/318.4	STA. 291+00 (RT. SIDE)	2-48"	CONC		8'					48" FLARED END SECTION	
99 - CHA - 1066	136.4/318.6	FROM STA. 300+50 TO STA. 310+80 (RT. SIDE)	VARIES	RIP2		1030'					TWIN 48" FLARED END SECTIONS	
99 - DRP - 1067	136.6/318.2	@ FOUNTAIN CRK STA. 315+10		CONC						POOR	INTERMITTENT PROTECTION	
99 - CHA - 1068	136.6/318.2	@ FOUNTAIN CRK. STA. 317+60 (LT. SIDE)		CONC1						FAILED		
99 - CHA - 1069	136.6/318.2	@ FOUNTAIN CRK. STA. 320+00 (RT. SIDE)	VARIES	RIP2						FAILED	OUTFALL CHANNEL FOR 10'x10' CBC	
99 - DRP - 1070	136.6/318.2	STA. 320+30	H=1'	CONC		40'					RIPRAP OUTFALL FOR 36" PIPE	
99 - BRI - 1071	136.6/318.2	U.S.HWY.24 OVERPASS @ STA. 321+00 (EASTBOUND)		3SPAN		90'					CONC. ENCASEMENT/DROP STRUCTURE	
99 - BRI - 1072	136.6/318.2	U.S.HWY.24 OVERPASS @ STA. 321+00 (WESTBOUND)		3SPAN		90'						
99 - CHA - 1073	136.6/318.2	@ FOUNTAIN CRK. STA. 324+50 (RT. SIDE)	4'x0.67'x5'	CONC1		35'						
99 - BRI - 1074	136.6/318.2	21ST ST. OVERPASS @ STA. 328+60		3SPAN		120'					CONC SWALE ABOVE 48" RCP OUTFALL	
99 - DRP - 1075	136.6/318.2	STA. 329+00	H=1'	CONC		60'						
99 - CHA - 1076	136.8/318.2	@ FOUNTAIN CRK. STA. 330+20 (LT. SIDE)	VARIES	RIP2		20'					CONC. ENCASEMENT/DROP STRUCTURE	
99 - CHA - 1077	136.8/318.0	STA. 340+00 (RT. SIDE)	VARIES	CONC							RIPRAP @ 30" RCP OUTFALL	
99 - CHA - 1078	136.8/318.0	@ FOUNTAIN CRK. STA. 345+80 (RT. SIDE)		CONC2							CONC. HEADWALL FOR 36" RCP	
99 - CHA - 1079	136.8/318.0	@ FOUNTAIN CRK. STA. 346+00	VARIES	RIP2						ERODED	CONCRETE APRON @ 66" RCP	
99 - BRI - 1080	136.8/318.0	25TH ST. OVERPASS @ STA. 351+40		2SPAN		90'					RIPRAP @ 36" RCP OUTFALL	
99 - BRI - 1081	136.8/318.0	26TH ST. OVERPASS @ STA. 357+10		3SPAN		70'						
99 - CHA - 1082	136.8/318.0	@ FOUNTAIN CRK. STA. 357+40 (RT. SIDE)	5'x0.67'x5'	CONC1		30'						
99 - CHA - 1083	136.8/318.0	FROM STA. 359+30 TO STA. 361+30 (RT. SIDE)	VARIES	CONC2		200'				POOR	CONCRETE CHUTE FOR 18"X28" CMP	
99 - CHA - 1084	136.8/318.0	FROM STA. 361+10 TO STA. 363+20 (LT. SIDE)	VARIES	RIP2		210'					CONCRETE WALL @ TOP OF BANK	
99 - BRI - 1085	137.0/318.0	@ FOUNTAIN CRK. STA. 366+00		CLSPN		60'				POOR	INTERMITTENT RIPRAP	
99 - CHA - 1086	137.0/317.8	@ FOUNTAIN CRK. STA. 369+10 (RT. SIDE)		RIP2							PEDESTRIAN BRIDGE (TWIN-T)	
99 - DRP - 1087	137.0/317.8	@ FOUNTAIN CRK. STA. 369+10		CONC							GROUTED ROCK DISSIPATOR @ 48" RCP	
99 - CHA - 1088	137.0/317.8	FROM STA. 369+10 TO STA. 372+20 (RT. SIDE)	VARIES	RIP2		310'				FAILED		
99 - BRI - 1089	137.0/317.8	@ FOUNTAIN CRK. STA. 370+70		CLSPN		40'					GROUTED ROCK WALL	
99 - CHA - 1090	137.0/317.8	FROM STA. 372+20 TO STA. 374+00 (RT. SIDE)	VARIES	CONC2		180'					PRIVATE ONE LANE BRIDGE	
											CONCRETE WALL ALONG CREEK	

STRUCTURE NUMBER	MAP #	LOCATION DESCRIPTION	SIZE	TYPE	SLOPE	LENGTH	MAINTAIN RESPONSIBLE	PIPE CHARACT.	SPILLWAY CHARACT.	CONDITION	REMARKS	JURISDICTION NO.
99 - CHA - 1091	137.0/317.8	FROM STA. 374+00 TO STA. 374+60 (RT. SIDE)	VARIES	RIP2		60'					ROCK WALL ALONG CREEK	
99 - CHA - 1092	137.0/317.8	@ FOUNTAIN CRK. STA. 374+80 (LT. SIDE)		ASPH							ASPHALT APRON @ 24" RCP OUTFALL	
99 - CHA - 1093	137.0/317.8	FROM STA. 380+30 TO STA. 381+40 (RT. SIDE)	VARIES	CONC2		110'					CONCRETE WALL ALONG CREEK	
99 - CHA - 1094	137.0/317.8	STA. 383+40 (RT. SIDE)	VARIES	CONC		15'					CONCRETE HEADWALL FOR 48" CMP	
99 - CHA - 1095	137.0/317.8	FROM STA. 384+60 TO STA. 385+60 (RT. SIDE)	VARIES	CONC2		100'					CONCRETE WALL ALONG CREEK	
99 - BRI - 1096	137.0/317.8	@ FOUNTAIN CRK. STA. 386+40		CLSPN		40'					PRIVATE ACCESS BRIDGE	
99 - DRP - 1097	137.0/317.8	STA. 386+60	H=1'	CONC		50'					CONC. ENCASEMENT/DROP STRUCTURE	
99 - BRI - 1098	137.0/317.8	31ST ST. OVERPASS @ STA. 388+00		3SPAN		75'						
99 - CHA - 1099	137.0/317.8	@ FOUNTAIN CRK. STA. 388+80 (RT. SIDE)		CONC2							CONC. HEADWALL FOR 9'x26' ARCH CMP	
99 - CHA - 1100	137.2/317.6	FROM STA. 399+30 TO STA. 409+80	VARIES	CONC2							SAFEWAY SITE UNDER CONSTRUCTION	
99 - DRP - 1101	137.2/317.6	STA. 409+20	H=4'	CONC		70'					GATED DROP STRUCTURE	
99 - CHA - 1102	137.2/317.6	STA 409+50 (RT. SIDE)	4'x4.33'x4'	CONC		175'					DIVERSION CHANNEL	
99 - CHA - 1103	137.2/317.6	STA. 410+00 (GAGING STATION)	VARIES	CONC		50'					CONCRETE/ROCK ENERGY DISSIPATOR	
99 - DRP - 1104	137.2/317.6	STA. 416+40	H=1'	CONC							CONCRETE ENCASEMENT/DROP STRUCTURE	
99 - CHA - 1105	137.2/317.6	STA. 418+30	VARIES	CONC		L=10'					CONCRETE CHUTE	
99 - BRI - 1106	137.2/317.6	RIDGE RD. OVERPASS @ STA. 422+00		3SPAN		70'						