

APPENDIX D

PROJECTED COSTS AND COMPLETION DATES

- **Table D-1 – Not Used**
- **Table D-2 - Not Used**
- **Table D-3 - Not Used**
- **Table D-4 - Not Used**
- **Table D-5 - Wastewater System Infrastructure Alternative 1.A.(1).a No New Satellite Plant - Preliminary Costs**
- **Table D-6 - Wastewater System Infrastructure Alternative 2.A.(1).a, b, c New Upper Hocking Water Pollution Control Facility - Preliminary Costs**
- **Table D-7 - Wastewater System Infrastructure Alternative 2.A.(2).a, b, c New Upper Hocking Water Pollution Control Facility - Preliminary Costs**
- **Table D-8 - Wastewater System Infrastructure Alternative 2.A.(1).a, b, c New Hunters Run Water Pollution Control Facility - Preliminary Costs**
- **Table D-9 - Wastewater System Infrastructure Projected Costs and Completion Dates**

TABLE D-5
CITY OF LANCASTER
WATER AND WASTEWATER IMPROVEMENTS MASTER PLAN
WASTEWATER SYSTEM INFRASTRUCTURE
ALTERNATIVE 1A(1)-a NO NEW SATELLITE PLANT - PRELIMINARY COSTS

WW Infrastructure Description		Quantity	Unit	Unit Cost	Total Cost	Location Remarks
IMMEDIATE NEEDS						
Pipe Section Number	Pipe Diameter					
1	12	2941	feet	157.59	\$ 463,473	North of SR 188 and Royalton Rd intersection in development areas C-2, I-3 and I-4.
2	12	701	feet	157.59	\$ 110,493	North of SR 188 and US 33 Bypass intersection in development area I-4.
3	12	1836	feet	157.59	\$ 289,304	Southwest of SR 188 and US 33 Bypass intersection in development area C-4.
4	15	1538	feet	174.24	\$ 267,894	Northwest of SR 188 and US 33 Bypass intersection in development area C-3.
5	18	1907	feet	190.93	\$ 364,136	North of SR 188 and US 33 Bypass intersection in development areas I-3 and I-4.
6	18	1530	feet	190.93	\$ 292,129	Anchor Ave west of Mill Park Drive.
7	12	1193	feet	157.59	\$ 188,075	Mill Park Drive south of Dave John's Ave
8	18	1484	feet	190.93	\$ 283,356	Dave John's Ave
9	18	1302	feet	190.93	\$ 248,675	Mill Park Drive north of Dave John's Ave
10	8	1470	feet	149.72	\$ 220,083	Anchor Ave east of Mill Park Drive.
11	18	905	feet	190.93	\$ 172,731	Mill Park Drive north of Anchor Ave
63	18	408	feet	190.93	\$ 77,932	Mill Park Drive north of Anchor Ave
1.0 mgd Rock Mill Lift Station		1	lump sum	588,000.00	\$ 588,000	Lift Station at Rock Mill Industrial Park, Phase 2 on Mill Park Drive.
Immediate Alternative 1A(1)a Subtotal					\$ 3,566,281	

TABLE D-5
CITY OF LANCASTER
WATER AND WASTEWATER IMPROVEMENTS MASTER PLAN
WASTEWATER SYSTEM INFRASTRUCTURE
ALTERNATIVE 1.A.(D)a NO NEW SATELLITE PLANT - PRELIMINARY COSTS

WW Infrastructure Description	Quantity	Unit	Unit Cost	Total Cost	Location Remarks
NEAR-TERM NEEDS					
12	18	feet	190.93	\$ 181,630	Northwest of Mill Park Drive and Anchor Ave intersection.
13	24	feet	243.15	\$ 1,553,500	West of Wilson Rd in development areas I-1, I-2 and I-15.
14	27	feet	269.26	\$ 1,816,192	Near Campground and Collins Rds in development areas I-6, I-7, I-15, C-8 and SF-3.
15	30	feet	187.55	\$ 568,759	Along the Hocking River east of Ety Road in development areas SF-3 and ED-1.
16	30	feet	187.55	\$ 1,506,507	Along the Hocking River west of Ety Road.
17	18	feet	190.93	\$ 1,038,182	Along Hunters Run near Delmont Rd in development areas C-5 and I-9.
18	15	feet	174.24	\$ 984,456	Along Hunters Run tributary near Crumley Rd in development areas C-5 and I-9.
19	21	feet	217.04	\$ 229,976	Along Hunters Run north of Crumley Rd in development area I-9.
20	12	feet	157.59	\$ 162,545	Along Hunters Run tributary south of Crumley Rd in development area C-10.
21	12	feet	157.59	\$ 297,313	Along Hunters Run tributary south of Crumley Rd in development area C-10.
23	18	feet	190.93	\$ 880,299	Along upper Hocking River tributary near Rainbow Dr. in development area SF-16.
24	8	feet	149.72	\$ 169,427	Along upper Hocking River tributary near Rainbow Dr. in development area SF-16.
25	18	feet	190.93	\$ 1,178,396	Along upper Hocking River tributary south of Rainbow Dr. in development areas SF-13, SF-16 and SF-17.
26	54	feet	284.77	\$ 2,075,262	Along Hunters Run near US 22 in development areas SF-7 and I-10.
27	54	feet	284.77	\$ 1,432,214	Along Hunters Run near Crumley Rd in development areas C-12, MF-3 and SF-7.
55	54	feet	284.77	\$ 1,555,357	Along the Fox Trail RR alignment north of Hubert Ave.
64	48	feet	255.49	\$ 426,676	Along Becks Knob Road near Crumley Road.
68	21	feet	217.04	\$ 229,614	Along Hunters Run near Crumley Rd in development areas I-9 and C-10.
69	54	feet	284.77	\$ 151,017	Northeast of Cenci Lake Park on Canal Street.
70	60	feet	314.06	\$ 956,900	West of the existing WPCF on Canal Street.
71	60	feet	314.06	\$ 193,776	West of the existing WPCF on Canal Street.
Rainbow Dr. Pump Station					
300,000 gpd pump station	1	lump sum	216,000.00	\$ 216,000	Pump Station near River Valley Highlands Subdivision on Rainbow Drive.
Force main	6530	feet	87.79	\$ 573,227	Force main from Rainbow Drive north of River Valley Highlands Subdivision to Near Term Section #25
Upper Hocking Pump Station					
6.5 mgd pump station	1	lump sum	2,785,000.00	\$ 2,785,000	Pump Station at Ety Road and West Fair Avenue.
Force main	15041	feet	139.67	\$ 2,100,709	Force main from pump station to intersection of Becks Knob Road and Crumley Rd.
Existing WPCF					
2.0 mgd peak flow upgrade	1	lump sum	6,000,000	\$ 6,000,000	New facility south of existing WPCF.
Near-Term Alternative 1.A.(a) Subtotal				\$ 29,262,884.00	

**TABLE D-5
CITY OF LANCASTER
WATER AND WASTEWATER IMPROVEMENTS MASTER PLAN
WASTEWATER SYSTEM INFRASTRUCTURE
ALTERNATIVE 1.A.(C).a NO NEW SATELLITE PLANT - PRELIMINARY COSTS**

WW Infrastructure Description		Quantity	Unit	Unit Cost	Total Cost	Location Remarks
2025 NEEDS						
28	10	763	feet	156.22	\$ 119,118	Along Hunters Run tributary near Shellenbarger Park in development areas C-10 and C-11.
29	12	2137	feet	157.59	\$ 336,739	Along Hunters Run tributary north of Crumley Road in development area SF-2.
30	15	3678	feet	174.24	\$ 640,796	Along Hunters Run near SR 188 and Royalton Rd intersection in development areas MF-2 and SF-1.
31	18	2465	feet	190.93	\$ 470,664	Along Hunters Run north of Crumley Road in development areas SF-1 and SF-2.
32	12	4308	feet	157.59	\$ 678,864	West of SR 188 and Becks Knob Rd intersection to Dave John's Ave in development areas C-6 and I-8.
33	15	4956	feet	174.24	\$ 863,577	Along Upper Hocking River tributary in development areas SF-9 and SF-10 and Greenfield Township.
34	15	4263	feet	174.24	\$ 742,698	Along Upper Hocking River tributary in development area SF-10 and Greenfield Township.
35	27	2353	feet	269.26	\$ 633,602	Along Hocking River south of US 33 in development area SF-10 and Greenfield Township.
36	30	383	feet	187.55	\$ 71,855	Along Hocking River south of US 33 in development areas C-8 and SF-3.
37	8	2816	feet	149.72	\$ 421,555	North of Rainbow Drive in development area SF-16.
38	8	1322	feet	149.72	\$ 197,911	Along Upper Hocking River tributary north of Rainbow Drive in development area SF-16.
39	8	3475	feet	149.72	\$ 520,277	North of River Valley Highlands Subdivision near Rainbow Drive in development area SF-16.
48	10	467	feet	156.22	\$ 72,941	Along Upper Hocking River tributary north of Rainbow Drive in development area SF-16 to the Rainbow Drive Pump Station.
53	8	2925	feet	149.72	\$ 437,931	Along Upper Hocking River tributary south of West Fair Avenue in development area SF-5.
54	15	2917	feet	174.24	\$ 508,290	Along Upper Hocking River tributary east of SR 188 and Becks Knob Road intersection in development area MF-3.
72	15	6730	feet	174.24	\$ 1,172,580	Along Pleasant Run east of Lynwood Lane.
73	15	2227	feet	174.24	\$ 388,089	Along Pleasant Run east of Lynwood Lane in development area C-19.
74	60	1191	feet	314.06	\$ 373,889	Treated effluent discharge from new facility south of existing WPCF.
75	48	983	feet	255.49	\$ 251,032	Along Baldwin Run northeast of existing WPCF.
Rainbow Dr. Pump Station						
850,000 gpd pump station	1	lump sum		514,000.00	\$ 514,000	Pump Station near River Valley Highlands Subdivision on Rainbow Drive.
Force main	8	6530	feet	93.43	\$ 610,054	Force main from Rainbow Drive north of River Valley Highlands Subdivision to Near Term Section #25
Upper Hocking Pump Station						
4.0 mgd upgrade	1	lump sum		1,861,000.00	\$ 1,861,000	Pump Station at Ely Road and West Fair Avenue.
Existing WPCF						
6.7 mgd peak flow upgrade	1	lump sum		20,100,000	\$ 20,100,000	New facility to treat peak flows
2025 Alternative 1A(j)a Subtotal					\$ 31,987,462.00	

**TABLE D-5
CITY OF LANCASTER
WATER AND WASTEWATER IMPROVEMENTS MASTER PLAN
WASTEWATER SYSTEM INFRASTRUCTURE
ALTERNATIVE 1.A.(1)a NO NEW SATELLITE PLANT - PRELIMINARY COSTS**

WW Infrastructure Description	Quantity	Unit	Unit Cost	Total Cost	Location Remarks	
2045 NEEDS						
40	12	198	feet	157.59	\$ 31,173	Along Hunters Run tributary east of Delmont Rd in development area MF-4.
41	10	5419	feet	156.22	\$ 846,518	Along Hunters Run tributary northeast of Crumley and Mt. Zion Rd intersection in development area SF-2.
42	18	10744	feet	Greenfield Twp Sewer	-	Along Upper Hocking River tributary in Greenfield Township.
43	15	6228	feet	174.24	\$ 1,085,188	Along Hocking River south of US 33 in Greenfield Township.
44	18	2503	feet	190.93	\$ 477,921	Along Hocking River south of US 33 in Greenfield Township.
45	18	8394	feet	Greenfield Twp Sewer	-	Along Upper Hocking River tributary in Greenfield Township.
46	24	5122	feet	243.15	\$ 1,245,383	Along Hocking River south of US 33 in Greenfield Township.
47	24	10516	feet	243.15	\$ 2,556,874	Along Upper Hocking River tributary in Greenfield Township.
49	10	197	feet	156.22	\$ 30,756	Along Upper Hocking River tributary north of Rainbow Drive in development area SF-16 near the Rainbow Drive Pump Station.
50	18	366	feet	190.93	\$ 69,808	Along Upper Hocking River tributary north of Rainbow Drive in development area SF-16 near the Rainbow Drive Pump Station.
Upper Hocking Pump Station 4.5 mgd upgrade	1	lump sum		2,052,000.00	\$ 2,052,000	Pump Station at Ety Road and West Fair Avenue.
Force main Existing WPCF	15041	feet		154.06	\$ 2,317,141	Force main from pump station to intersection of Becks Knob Road and Crumley Rd.
3.6 mgd upgrade	1	lump sum		\$ 12,800,000	\$ 12,800,000	New facility south of existing WPCF.
7.35 peak flow upgrade	1	lump sum		\$ 22,050,000	\$ 22,050,000	New facility to treat peak flows
				2045 Alternative 1A(1)a Subtotal	\$ 45,562,762.00	
TOTAL COST						
				Immediate Alternative 1A(1)a Subtotal	\$ 3,566,281	
				Near-Term Alternative 1A(1)a Subtotal	\$ 29,262,884.00	
				2025 Alternative 1A(1)a Subtotal	\$ 31,987,462.00	
				2045 Alternative 1A(1)a Subtotal	\$ 45,562,762.00	
				Wastewater Alternative 1A(1)a TOTAL	\$ 110,379,389	

Notes:

1. Costs are based on 2002 Dollars.
2. Costs include a 1.30 contingency factor and a 1.23 engineering cost factor.

TABLE D-6
CITY OF LANCASTER
WATER AND WASTEWATER IMPROVEMENTS MASTER PLAN
WASTEWATER SYSTEM INFRASTRUCTURE
ALTERNATIVE 2.A.(1).a,b,c NEW UPPER HOCKING WATER POLLUTION CONTROL FACILITY - PRELIMINARY COSTS

WW Infrastructure Description		Quantity	Unit	Unit Cost	Total Cost	Location Remarks
IMMEDIATE NEEDS						
Pipe Section Number	Pipe Diameter					
1	12	2941	feet	157.59	\$ 463,473	North of SR 188 and Royalton Rd intersection in development areas C-2, I-3 and I-4.
2	12	701	feet	157.59	\$ 110,493	North of SR 188 and US 33 Bypass intersection in development area I-4.
3	12	1836	feet	157.59	\$ 289,304	Southwest of SR 188 and US 33 Bypass intersection in development area C-4.
4	15	1538	feet	174.24	\$ 267,894	Northwest of SR 188 and US 33 Bypass intersection in development area C-3.
5	18	1907	feet	190.93	\$ 364,136	North of SR 188 and US 33 Bypass intersection in development areas I-3 and I-4.
6	18	1530	feet	190.93	\$ 292,129	Anchor Ave west of Mill Park Drive.
7	12	1193	feet	157.59	\$ 188,075	Mill Park Drive south of Dave John's Ave
8	21	1484	feet	217.04	\$ 322,105	Dave John's Ave
9	24	1302	feet	243.15	\$ 316,689	Mill Park Drive north of Dave John's Ave
10	8	1470	feet	149.72	\$ 220,083	Anchor Ave east of Mill Park Drive.
11	18	905	feet	190.93	\$ 172,731	Mill Park Drive north of Anchor Ave
63	27	408	feet	269.26	\$ 109,904	Mill Park Drive north of Anchor Ave
1.0 mgd Rock Mill Lift Station		1	lump sum	588,000.00	\$ 588,000	Lift Station at Rock Mill Industrial Park, Phase 2 on Mill Park Drive.
Immediate Alternative 2A(1) Subtotal					\$ 3,705,016	

TABLE D-6
CITY OF LANCASTER
WATER AND WASTEWATER IMPROVEMENTS MASTER PLAN
WASTEWATER SYSTEM INFRASTRUCTURE
ALTERNATIVE 2.A.(1).a,b,c NEW UPPER HOCKING WATER POLLUTION CONTROL FACILITY - PRELIMINARY COSTS

WW Infrastructure Description	Quantity	Unit	Unit Cost	Total Cost	Location Remarks
NEAR-TERM NEEDS					
12	27	feet	269.26	\$ 256,145	Northwest of Mill Park Drive and Anchor Ave intersection.
13	30	feet	187.55	\$ 1,198,269	West of Wilson Rd in development areas I-1, I-2 and I-15.
16	30	feet	187.55	\$ 1,506,307	Along the Hocking River east of Ely Road.
17	18	feet	190.93	\$ 1,038,182	Along Hunters Run near Delmont Rd in development areas C-5 and I-9.
18	15	feet	174.24	\$ 984,456	Along Hunters Run tributary near Crumley Rd in development areas C-5 and I-9.
19	21	feet	217.04	\$ 229,926	Along Hunters Run north of Crumley Rd in development area I-9.
20	12	feet	157.59	\$ 162,545	Along Hunters Run tributary south of Crumley Rd in development area C-10.
21	12	feet	188.7	\$ 297,313	Along Hunters Run tributary south of Crumley Rd in development area C-10.
23	18	feet	461.1	\$ 880,299	Along upper Hocking River tributary near Rainbow Dr. in development area SF-16.
24	8	feet	149.72	\$ 169,427	Along upper Hocking River tributary near Rainbow Dr. in development area SF-16.
25	18	feet	190.93	\$ 1,178,396	Along upper Hocking River tributary south of Rainbow Dr. in development areas SF-13, SF-16 and SF-17.
59	30	feet	187.55	\$ 1,215,559	Treated effluent discharge from new Upper Hocking WPCF to the Hocking River.
60	30	feet	187.55	\$ 129,293	West of Campground Rd in Rock Mill Industrial Park, Phase 1, development area I-15.
61	21	feet	217.04	\$ 934,961	West of Becks Knob Rd in development areas C-6 and I-8.
62	21	feet	217.04	\$ 1,004,488	Along Becks Knob Rd in development area I-9.
70	30	feet	187.55	\$ 571,441	West of the existing WPCF on Canal Street.
71	30	feet	187.55	\$ 115,719	West of the existing WPCF on Canal Street.
Rainbow Dr. Pump Station					
300,000 gpd pump station	1	lump sum	216,000.00	\$ 216,000	Pump Station near River Valley Highlands Subdivision on Rainbow Drive.
Force main	6530	feet	87.79	\$ 573,227	Force main from Rainbow Drive north of River Valley Highlands Subdivision to Near Term Section #25
Upper Hocking Pump Station					
4.75 mgd pump station	1	lump sum	2,146,000.00	\$ 2,146,000	Pump Station at Ely Road and West Fair Avenue.
Force main	13626	feet	119.23	\$ 1,624,648	Force main from pump station to intersection of Becks Knob Road and Crumley Rd.
Hunters Run Pump Station					
250,000 mgd pump station	1	lump sum	186,000.00	\$ 186,000	Pump Station at Becks Knob Road and Crumley Road.
Force main	1030	feet	82.15	\$ 84,575	Force main from pump station to intersection of north side of Becks Knob.
Upper Hocking WPCF					
2.0 mgd WPCF	1	lump sum	\$ 14,000,000	\$ 14,000,000	New WPCF on Campground Road in Rock Mill Phase 1 Industrial Park, development area I-15.
Near-Term Alternative 2A(1) Subtotal				\$ 30,703,376.00	

TABLE D-6
CITY OF LANCASTER
WATER AND WASTEWATER IMPROVEMENTS MASTER PLAN
WASTEWATER SYSTEM INFRASTRUCTURE
ALTERNATIVE 2.A.(1)-a,b,c NEW UPPER HOCKING WATER POLLUTION CONTROL FACILITY - PRELIMINARY COSTS

WW Infrastructure Description	Quantity	Unit	Unit Cost	Total Cost	Location Remarks	
2045 NEEDS						
40	12	198	feet	157.59	\$ 31,173	Along Hunters Run tributary east of Delmont Rd in development area MF-4.
41	10	5419	feet	156.22	\$ 846,518	Along Hunters Run tributary northeast of Crumley and Mt. Zion Rd intersection in development area SF-2.
42	18	10744	feet	Greenfield Twp Sewer	-	Along Upper Hocking River tributary in Greenfield Township.
43	15	6228	feet	174.24	\$ 1,085,188	Along Hocking River south of US 33 in Greenfield Township.
44	18	2503	feet	190.93	\$ 477,921	Along Hocking River south of US 33 in Greenfield Township.
45	18	8394	feet	Greenfield Twp Sewer	-	Along Upper Hocking River tributary in Greenfield Township.
46	24	5122	feet	243.15	\$ 1,245,383	Along Hocking River south of US 33 in Greenfield Township.
47	24	10516	feet	243.15	\$ 2,556,874	Along Upper Hocking River tributary in Greenfield Township.
49	10	197	feet	156.22	\$ 30,756	Along Upper Hocking River tributary north of Rainbow Drive in development area SF-16 near the Rainbow Drive Pump Station.
50	18	366	feet	190.93	\$ 69,808	Along Upper Hocking River tributary north of Rainbow Drive in development area SF-16 near the Rainbow Drive Pump Station.
Upper Hocking Pump Station						
4.0 mgd upgrade	1	lump sum		1,861,000.00	\$ 1,861,000	Pump Station at Ely Road and West Fair Avenue.
Force main	20	13626	feet	139.67	\$ 1,903,166	Force main from pump station to intersection of Becks Knob Road and Crumley Rd.
Hunters Run Pump Station						
1.2 mgd upgrade	1	lump sum		684,000.00	\$ 684,000	Pump Station at Becks Knob Road and Crumley Road.
Force main	1030	feet	99.85		\$ 102,797	Force main from pump station to intersection of north side of Becks Knob.
Upper Hocking WPCF						
2.7 mgd upgrade	1	lump sum		18,900,000	\$ 18,900,000	New WPCF on Campground Road in Rock Mill Phase 1 Industrial Park, development area I-Existing WPCF
1 mgd peak flow upgrade	1	lump sum		3,000,000	\$ 3,000,000	New facility to treat peak flows at Existing Plant
				2045 Alternative 2A(1) Subtotal	\$ 32,794,584.00	
TOTAL COST						
				Immediate Alternative 2A(1) Subtotal	\$ 3,705,016	
				Near-Term Alternative 2A(1) Subtotal	\$ 30,703,376.00	
				2025 Alternative 2A(1) Subtotal	\$ 36,921,357.00	
				2045 Alternative 2A(1) Subtotal	\$ 32,794,584.00	
				Wastewater Alternative 2A(1) TOTAL	\$ 104,124,333	

Notes:

- Costs are based on 2002 Dollars.
- Costs include a 1.30 contingency factor and a 1.23 engineering cost factor.

**TABLE D-7
CITY OF LANCASTER
WATER AND WASTEWATER IMPROVEMENTS MASTER PLAN
WASTEWATER SYSTEM INFRASTRUCTURE
ALTERNATIVE 2.A.(2),a,b,c NEW UPPER HOCKING WATER POLLUTION CONTROL FACILITY - PRELIMINARY COSTS**

WW Infrastructure Description		Quantity	Unit	Unit Cost	Total Cost	Location Remarks
IMMEDIATE NEEDS						
Pipe Section Number	Pipe Diameter					
1	12	2941	feet	157.59	\$ 463,473	North of SR 188 and Roylton Rd intersection in development areas C-2, I-3 and I-4.
2	12	701	feet	157.59	\$ 110,493	North of SR 188 and US 33 Bypass intersection in development area I-4.
3	12	1836	feet	157.59	\$ 289,304	Southwest of SR 188 and US 33 Bypass intersection in development area C-4.
4	15	1538	feet	174.24	\$ 267,894	Northwest of SR 188 and US 33 Bypass intersection in development area C-3.
5	18	1907	feet	190.93	\$ 364,136	North of SR 188 and US 33 Bypass intersection in development areas I-3 and I-4.
6	18	1530	feet	190.93	\$ 292,129	Anchor Ave west of Mill Park Drive.
7	12	1193	feet	157.59	\$ 188,075	Mill Park Drive south of Dave John's Ave
8	18	1484	feet	190.93	\$ 283,356	Dave John's Ave
9	18	1302	feet	190.93	\$ 248,675	Mill Park Drive north of Dave John's Ave
10	8	1470	feet	149.72	\$ 220,083	Anchor Ave east of Mill Park Drive.
11	18	905	feet	190.93	\$ 172,731	Mill Park Drive north of Anchor Ave
63	18	408	feet	190.93	\$ 77,932	Mill Park Drive north of Anchor Ave
1.0 mgd Rock Mill Lift Station		1	lump sum	588,000.00	\$ 588,000	Lift Station at Rock Mill Industrial Park, Phase 2 on Mill Park Drive.
Immediate Alternative 2A(2) Subtotal					\$ 3,566,281	

**TABLE D-7
CITY OF LANCASTER
WATER AND WASTEWATER IMPROVEMENTS MASTER PLAN
WASTEWATER SYSTEM INFRASTRUCTURE
ALTERNATIVE 2.A.(2).a,b,c NEW UPPER HOCKING WATER POLLUTION CONTROL FACILITY - PRELIMINARY COSTS**

WW Infrastructure Description	Quantity	Unit	Unit Cost	Total Cost	Location Remarks
NEAR-TERM NEEDS					
12	18	feet	190.93	\$ 181,630	Northwest of Mill Park Drive and Anchor Ave intersection.
13	24	feet	243.15	\$ 1,553,500	West of Wilson Rd in development areas I-1, I-2 and I-15.
16	30	feet	187.55	\$ 1,506,507	Along the Hocking River east of Ely Road.
17	18	feet	190.93	\$ 1,038,182	Along Hunters Run near Delmont Rd in development areas C-5 and I-9.
18	15	feet	174.24	\$ 984,456	Along Hunters Run tributary near Crumley Rd in development areas C-5 and I-9.
19	21	feet	217.04	\$ 229,926	Along Hunters Run north of Crumley Rd in development area I-9.
20	12	feet	157.59	\$ 162,545	Along Hunters Run tributary south of Crumley Rd in development area C-10.
21	12	feet	157.59	\$ 297,313	Along Hunters Run tributary south of Crumley Rd in development area C-10.
23	18	feet	190.93	\$ 880,299	Along upper Hocking River tributary near Rainbow Dr. in development area SF-16.
24	8	feet	149.72	\$ 169,427	Along upper Hocking River tributary near Rainbow Dr. in development area SF-16.
25	18	feet	190.93	\$ 1,178,396	Along upper Hocking River tributary south of Rainbow Dr. in development areas SF-13, SF-16 and SF-17.
27	27	feet	269.26	\$ 1,354,209	Along Hunters Run near Crumley Rd in development areas C-12, MF-3 and SF-7.
51	27	feet	269.26	\$ 1,868,067	Along Hunters Run and US 22 in development areas SF-7, SF-8 and I-10.
59	27	feet	269.26	\$ 1,745,142	Treated effluent discharge from new Upper Hocking WPCF to the Hocking River.
60	24	feet	243.15	\$ 167,622	West of Campground Rd in Rock Mill Industrial Park, Phase 1, development area I-15.
68	21	feet	217.04	\$ 229,614	Along Hunters Run near Crumley Rd in development areas I-9 and C-10.
70	36	feet	211.75	\$ 645,175	West of the existing WPCF on Canal Street.
71	36	feet	211.75	\$ 130,650	West of the existing WPCF on Canal Street.
Rainbow Dr. Pump Station					
300,000 gpd pump station	1	lump sum	216,000.00	\$ 216,000	Pump Station near River Valley Highlands Subdivision on Rainbow Drive.
Force main	6	feet	87.79	\$ 573,227	Force main from Rainbow Drive north of River Valley Highlands Subdivision to Near Term Section #25
Upper Hocking Pump Station					
4.75 mgd pump station	1	lump sum	2,146,000.00	\$ 2,146,000	Pump Station at Ely Road and West Fair Avenue.
Force main	16	feet	119.23	\$ 1,624,648	Force main from pump station to intersection of Becks Knob Road and Crumley Rd.
Upper Hocking WPCF					
2.0 mgd WPCF	1	lump sum	14,000,000	\$ 14,000,000	New WPCF on Campground Road in Rock Mill Phase 1 Industrial Park, development area I-15.
Near-Term Alternative 2A(2) Subtotal				\$ 32,882,535.00	

**TABLE D-7
CITY OF LANCASTER
WATER AND WASTEWATER IMPROVEMENTS MASTER PLAN
WASTEWATER SYSTEM INFRASTRUCTURE
ALTERNATIVE 2.A.(2).a,b,c NEW UPPER HOCKING WATER POLLUTION CONTROL FACILITY - PRELIMINARY COSTS**

WW Infrastructure Description	Quantity	Unit	Unit Cost	Total Cost	Location Remarks
2025 NEEDS					
15	3033	feet	187.55	\$ 568,759	Along the Hocking River west of Ely Road in development areas SF-3 and ED-1.
28	10	feet	119,118	\$ 1,191,118	Along Hunters Run tributary near Shellenbarger Park in development areas C-10 and C-11.
29	12	feet	336,739	\$ 4,040,868	Along Hunters Run tributary north of Crumley Road in development area SF-2.
30	15	feet	640,796	\$ 9,611,940	Along Hunters Run near SR 188 and Royaltown Rd intersection in development areas MF-2 and SF-1.
31	18	feet	470,664	\$ 8,471,952	Along Hunters Run north of Crumley Road in development areas SF-1 and SF-2.
32	12	feet	678,864	\$ 8,146,368	West of SR 188 and Becks Knob Rd intersection to Dave John's Ave in development areas C-6 and L-8.
33	15	feet	863,577	\$ 12,953,655	Along Upper Hocking River tributary in development areas SF-9 and SF-10 and Greenfield Township.
34	15	feet	742,698	\$ 11,140,470	Along Upper Hocking River tributary in development area SF-10 and Greenfield Township.
35	27	feet	633,602	\$ 17,107,254	Along Hocking River south of US 33 in development area SF-10 and Greenfield Township.
36	30	feet	187,55	\$ 5,626,500	Along Hocking River south of US 33 in development areas C-8 and SF-3.
37	8	feet	421,555	\$ 3,372,440	North of Rainbow Drive in development area SF-16.
38	8	feet	197,911	\$ 1,583,288	Along Upper Hocking River tributary north of Rainbow Drive in development area SF-16.
39	8	feet	520,277	\$ 4,162,216	North of River Valley Highlands Subdivision near Rainbow Drive in development area SF-16.
48	10	feet	72,941	\$ 729,410	Along Upper Hocking River tributary north of Rainbow Drive in development area SF-16 to the Rainbow Drive Pump Station.
52	27	feet	1,470,645	\$ 39,607,415	Along the Fox Trail RR alignment north of Hubert Ave.
53	8	feet	437,931	\$ 3,503,448	Along Upper Hocking River tributary south of West Fair Avenue in development area SF-5.
54	15	feet	508,290	\$ 7,624,350	Along Upper Hocking River tributary east of SR 188 and Becks Knob Road intersection in development area MF-3.
69	24	feet	128,945	\$ 3,090,680	Northeast of Cenci Lake Park on Canal Street.
72	15	feet	1,172,580	\$ 17,588,700	Along Pleasant Run east of Lynwood Lane.
73	15	feet	388,089	\$ 5,821,335	Along Pleasant Run east of Lynwood Lane in development area C-19.
75	48	feet	251,032	\$ 12,059,536	Along Baldwin Run northeast of existing WPCF.
Rainbow Dr. Pump Station					
850,000 gpd upgrade	1	lump sum	514,000.00	\$ 514,000	Pump Station near River Valley Highlands Subdivision on Rainbow Drive.
Force main	8	feet	93.43	\$ 747.44	Force main from Rainbow Drive north of River Valley Highlands Subdivision to Near Term Section #25
Upper Hocking Pump Station					
4.25 mgd upgrade	1	lump sum	1,957,000.00	\$ 1,957,000	Pump Station at Ely Road and West Fair Avenue.
Upper Hocking WPCF					
1.75 mgd upgrade	1	lump sum	12,250,000	\$ 12,250,000	New WPCF on Campground Road in Rock Mill Phase 1 Industrial Park, development area L-15.
Existing WPCF					
3.6 mgd peak flow upgrade	1	lump sum	10,800,000	\$ 10,800,000	New facility to treat peak flows at Existing Plant
2025 Alternative 2A(2) Subtotal				\$ 36,827,922.00	

**TABLE D-7
CITY OF LANCASTER
WATER AND WASTEWATER IMPROVEMENTS MASTER PLAN
WASTEWATER SYSTEM INFRASTRUCTURE
ALTERNATIVE 2.A.(2).a,b,c NEW UPPER HOCKING WATER POLLUTION CONTROL FACILITY - PRELIMINARY COSTS**

WW Infrastructure Description	Quantity	Unit	Unit Cost	Total Cost	Location Remarks
2045 NEEDS					
40	12	198 feet	\$ 157.59	\$ 31,173	Along Hunters Run tributary east of Delmont Rd in development area MF-4.
41	10	5419 feet	\$ 156.22	\$ 846,518	Along Hunters Run tributary notheast of Crumley and Mt. Zion Rd intersection in development area SF-2.
42	18	10744 feet	Greenfield Twp Sewer	-	Along Upper Hocking River tributary in Greenfield Township.
43	15	6228 feet	174.24	\$ 1,085,188	Along Hocking River south of US 33 in Greenfield Township.
44	18	2503 feet	190.93	\$ 477,921	Along Hocking River south of US 33 in Greenfield Township.
45	18	8394 feet	Greenfield Twp Sewer	-	Along Upper Hocking River tributary in Greenfield Township.
46	24	5122 feet	243.15	\$ 1,245,383	Along Hocking River south of US 33 in Greenfield Township.
47	24	10516 feet	243.15	\$ 2,556,874	Along Upper Hocking River tributary in Greenfield Township.
49	10	197 feet	156.22	\$ 30,756	Along Upper Hocking River tributary north of Rainbow Drive in development area SF-16 near the Rainbow Drive Pump Station.
50	18	366 feet	190.93	\$ 69,808	Along Upper Hocking River tributary north of Rainbow Drive in development area SF-16 near the Rainbow Drive Pump Station.
Upper Hocking Pump Station 4.0 mgd upgrade	1	lump sum	1,861,000.00	\$ 1,861,000	Pump Station at Ely Road and West Fair Avenue.
Force main Upper Hocking WPCF	13626	feet	139.67	\$ 1,903,166	Force main from pump station to intersection of Becks Knob Road and Crumley Rd.
2.75 mgd upgrade Existing WPCF	1	lump sum	\$ 19,250,000	\$ 19,250,000	New WPCF on Campground Road in Rock Mill Phase 1 Industrial Park, development area I-15.
1 mgd peak flow upgrade	1	lump sum	\$ 3,000,000	\$ 3,000,000	New facility to treat peak flows at Existing Plant
TOTAL COST				\$ 32,357,787.00	
Immediate Alternative 2A(2) Subtotal				\$ 3,566,281	
Near-Term Alternative 2A(2) Subtotal				\$ 32,882,535.00	
2025 Alternative 2A(2) Subtotal				\$ 36,827,922.00	
2045 Alternative 2A(2) Subtotal				\$ 32,357,787.00	
Wastewater Alternative 2A(2) TOTAL				\$ 105,634,525	

Notes:

1. Costs are based on 2002 Dollars.
2. Costs include a 1.30 contingency factor and a 1.23 engineering cost factor.

TABLE D-8
CITY OF LANCASTER
WATER AND WASTEWATER IMPROVEMENTS MASTER PLAN
WASTEWATER SYSTEM INFRASTRUCTURE
ALTERNATIVE 2.a.(1).a,b,c NEW HUNTERS RUN WATER POLLUTION CONTROL FACILITY - PRELIMINARY COSTS

WW Infrastructure Description		Quantity	Unit	Unit Cost	Total Cost	Location Remarks
IMMEDIATE NEEDS						
Pipe Section Number	Pipe Diameter					
1	12	2941	feet	157.59	\$ 463,473	North of SR 188 and Royalton Rd intersection in development areas C-2, I-3 and I-4.
2	12	701	feet	157.59	\$ 110,493	North of SR 188 and US 33 Bypass intersection in development area I-4.
3	12	1836	feet	157.59	\$ 289,304	Southwest of SR 188 and US 33 Bypass intersection in development area C-4.
4	15	1538	feet	174.24	\$ 267,894	Northwest of SR 188 and US 33 Bypass intersection in development area C-3.
5	18	1907	feet	190.93	\$ 364,136	North of SR 188 and US 33 Bypass intersection in development areas I-3 and I-4.
6	18	1530	feet	190.93	\$ 292,129	Anchor Ave west of Mill Park Drive.
7	12	1193	feet	157.59	\$ 188,075	Mill Park Drive south of Dave John's Ave
8	18	1484	feet	190.93	\$ 283,356	Dave John's Ave
9	18	1302	feet	190.93	\$ 248,675	Mill Park Drive north of Dave John's Ave
10	8	1470	feet	149.72	\$ 220,083	Anchor Ave east of Mill Park Drive.
11	18	905	feet	190.93	\$ 172,731	Mill Park Drive north of Anchor Ave
63	18	408	feet	190.93	\$ 77,932	Mill Park Drive north of Anchor Ave
1.0 mgd Rock Mill Lift Station		1	lump sum	588,000.00	\$ 588,000	Lift Station at Rock Mill Industrial Park, Phase 2 on Mill Park Drive.
Immediate Alternative 4A Subtotal					\$ 3,566,281	

TABLE D-8
CITY OF LANCASTER
WATER AND WASTEWATER IMPROVEMENTS MASTER PLAN
WASTEWATER SYSTEM INFRASTRUCTURE
ALTERNATIVE 2.A.(1).a,b,c NEW HUNTERS RUN WATER POLLUTION CONTROL FACILITY - PRELIMINARY COSTS

WW Infrastructure Description		Quantity	Unit	Unit Cost	Total Cost	Location Remarks
NEAR-TERM NEEDS						
12	18	951	feet	190.93	\$ 181,630	Northwest of Mill Park Drive and Anchor Ave intersection.
13	24	6389	feet	243.15	\$ 1,553,500	West of Wilson Rd in development areas I-1, I-2 and I-15.
14	27	6745	feet	269.26	\$ 1,816,192	Near Campground and Collins Rds in development areas I-6, I-7, I-15, C-8 and SF-3.
15	30	3033	feet	187.55	\$ 568,759	Along the Hocking River west of Ely Road in development areas SF-3 and ED-1.
16	30	8033	feet	187.55	\$ 1,506,507	Along the Hocking River east of Ely Road.
17	18	5438	feet	190.93	\$ 1,038,182	Along Hunters Run near Delmont Rd in development areas C-5 and I-9.
18	15	5650	feet	174.24	\$ 984,456	Along Hunters Run tributary near Crumley Rd in development areas C-5 and I-9.
19	21	1059	feet	217.04	\$ 229,926	Along Hunters Run north of Crumley Rd in development area I-9.
20	12	1031	feet	157.59	\$ 162,545	Along Hunters Run tributary south of Crumley Rd in development area C-10.
21	12	1887	feet	157.59	\$ 297,313	Along Hunters Run tributary south of Crumley Rd in development area C-10.
22	21	382	feet	217.04	\$ 82,947	Northwest of Becks Knob Road and Crumley Road intersection in development area I-9.
23	18	4611	feet	190.93	\$ 880,299	Along upper Hocking River tributary near Rainbow Dr. in development area SF-16.
24	8	1132	feet	149.72	\$ 169,427	Along upper Hocking River tributary near Rainbow Dr. in development area SF-16.
25	18	6172	feet	190.93	\$ 1,178,396	and SF-17.
65	21	337	feet	217.04	\$ 73,104	Treated water effluent from Hunters Run WPCF to Hunters Run.
70	27	3047	feet	269.26	\$ 820,401	West of the existing WPCF on Canal Street.
71	30	617	feet	187.55	\$ 115,719	West of the existing WPCF on Canal Street.
76	48	662	feet	255.49	\$ 169,260	Along Becks Knob Road near Crumley Road.
Rainbow Dr. Pump Station						
	300,000 gpd pump station	1	lump sum	216,000.00	\$ 216,000	Pump Station near River Valley Highlands Subdivision on Rainbow Drive.
	Force main	6	feet	87.79	\$ 573,227	Force main from Rainbow Drive north of River Valley Highlands Subdivision to Near Term Section #25
Upper Hocking Pump Station						
	6.5 mgd pump station	1	lump sum	2,785,000.00	\$ 2,785,000	Pump Station at Ely Road and West Fair Avenue.
	Force main	15041	feet	139.67	\$ 2,100,709	Force main from pump station to intersection of Becks Knob Road and Crumley Rd.
Hunters Run WPCF						
	2.0 mgd WPCF	1	lump sum	14,000,000	\$ 14,000,000	New WPCF on Crumley Road, development area I-9.
					Near-Term Alternative 4A Subtotal	\$ 31,503,499.00

**TABLE D-8
CITY OF LANCASTER
WATER AND WASTEWATER IMPROVEMENTS MASTER PLAN
WASTEWATER SYSTEM INFRASTRUCTURE
ALTERNATIVE 2.A.(1).a,b,c NEW HUNTERS RUN WATER POLLUTION CONTROL FACILITY - PRELIMINARY COSTS**

WW Infrastructure Description	Quantity	Unit	Unit Cost	Total Cost	Location Remarks
27	18	5029 feet	190.93	\$ 960,258	Along Hunters Run near Crumley Rd in development areas C-12, MF-3 and SF-7.
28	10	763 feet	156.22	\$ 119,118	Along Hunters Run tributary near Shellenbarger Park in development areas C-10 and C-11.
29	12	2137 feet	157.59	\$ 336,739	Along Hunters Run tributary north of Crumley Road in development area SF-2.
30	15	3678 feet	174.24	\$ 640,796	Along Hunters Run near SR 188 and Royaltan Rd intersection in development areas MF-2 and SF-1.
31	18	2465 feet	190.93	\$ 470,664	Along Hunters Run north of Crumley Road in development areas SF-1 and SF-2.
32	12	4308 feet	157.59	\$ 678,864	West of SR 188 and Becks Knob Rd intersection to Dave John's Ave in development areas C-6 and I-8.
33	15	4956 feet	174.24	\$ 863,577	Along Upper Hocking River tributary in development areas SF-9 and SF-10 and Greenfield Township.
34	15	4263 feet	174.24	\$ 742,698	Along Upper Hocking River tributary in development area SF-10 and Greenfield Township.
35	27	2353 feet	269.26	\$ 633,602	Along Hocking River south of US 33 in development area SF-10 and Greenfield Township.
36	30	383 feet	187.55	\$ 71,855	Along Hocking River south of US 33 in development areas C-8 and SF-3.
37	8	2816 feet	149.72	\$ 421,555	North of Rainbow Drive in development area SF-16.
38	8	1322 feet	149.72	\$ 197,911	Along Upper Hocking River tributary north of Rainbow Drive in development area SF-16.
39	8	3475 feet	149.72	\$ 520,277	North of River Valley Highlands Subdivision near Rainbow Drive in development area SF-16.
48	10	467 feet	156.22	\$ 72,941	Along Upper Hocking River tributary north of Rainbow Drive in development area SF-16 to the Rainbow Drive Pump Station.
51	18	6938 feet	190.93	\$ 1,324,631	Along Hunters Run and US 22 in development areas SF-7, SF-8 and I-10.
53	8	2925 feet	149.72	\$ 437,931	Along Upper Hocking River tributary south of West Fair Avenue in development area SF-5.
54	15	2917 feet	174.24	\$ 508,290	Along Upper Hocking River tributary east of SR 188 and Becks Knob Road intersection in development area MF-3.
66	48	19672 feet	255.49	\$ 5,025,967	Treated water effluent from Hunters Run WPCF to the Hocking River.
72	15	6730 feet	174.24	\$ 1,172,580	Along Pleasant Run east of Lynwood Lane.
73	15	2227 feet	174.24	\$ 388,089	Along Pleasant Run east of Lynwood Lane in development area C-19.
75	48	983 feet	255.49	\$ 251,032	Along Baldwin Run northeast of existing WPCF.
Rainbow Dr. Pump Station 850,000 gpd upgrade	1	lump sum	514,000.00	\$ 514,000	Pump Station near River Valley Highlands Subdivision on Rainbow Drive.
Force main	8	6530 feet	93.43	\$ 610,054	Force main from Rainbow Drive north of River Valley Highlands Subdivision to Near Term Section #25
Upper Hocking Pump Station 4.0 mgd upgrade	1	lump sum	1,861,000.00	\$ 1,861,000	Pump Station at Ely Road and West Fair Avenue.
Hunters Run WPCF 2 mgd upgrade	1	lump sum	\$ 14,000,000	\$ 14,000,000	New WPCF on Crumley Road, development area I-9.
Existing WPCF 2.6 mgd peak flow upgrade	1	lump sum	\$ 7,800,000	\$ 7,800,000	New facility to treat peak flows at Existing Plant
2025 Alternative 4A Subtotal				\$ 40,624,429.00	

TABLE D-8
CITY OF LANCASTER
WATER AND WASTEWATER IMPROVEMENTS MASTER PLAN
WASTEWATER SYSTEM INFRASTRUCTURE
ALTERNATIVE 2.a.(1).a,b,c NEW HUNTERS RUN WATER POLLUTION CONTROL FACILITY - PRELIMINARY COSTS

WW Infrastructure Description	Quantity	Unit	Unit Cost	Total Cost	Location Remarks
2045 NEEDS					
40	12	198 feet	157.59	\$ 31,173	Along Hunters Run tributary east of Delmont Rd in development area MF-4.
41	10	5419 feet	156.22	\$ 846,518	Along Hunters Run tributary northeast of Crumley and Mt. Zion Rd intersection in development area SF-2.
42	18	10744 feet	Greenfield Twp Sewer	-	Along Upper Hocking River tributary in Greenfield Township.
43	15	6228 feet	174.24	\$ 1,085,188	Along Hocking River south of US 33 in Greenfield Township.
44	18	2503 feet	190.93	\$ 477,921	Along Hocking River south of US 33 in Greenfield Township.
45	18	8394 feet	Greenfield Twp Sewer	-	Along Upper Hocking River tributary in Greenfield Township.
46	24	5122 feet	243.15	\$ 1,245,383	Along Hocking River south of US 33 in Greenfield Township.
47	24	10516 feet	243.15	\$ 2,556,874	Along Upper Hocking River tributary in Greenfield Township.
49	10	197 feet	156.22	\$ 30,756	Along Upper Hocking River tributary north of Rainbow Drive in development area SF-16 near the Rainbow Drive Pump Station.
50	18	366 feet	190.93	\$ 69,808	Along Upper Hocking River tributary north of Rainbow Drive in development area SF-16 near the Rainbow Drive Pump Station.
Upper Hocking Pump Station					
4.5 mgd upgrade	1	lump sum	2,052,000.00	\$ 2,052,000	Pump Station at Ely Road and West Fair Avenue.
Force main	24	15041 feet	154.06	\$ 2,317,141	Force main from pump station to intersection of Becks Knob Road and Crumley Rd.
Hunters Run WPCF					
2.75 mgd upgrade	1	lump sum	\$ 19,250,000	\$ 19,250,000	New WPCF on Crumley Road, development area I-9.
Existing WPCF					
2 mgd peak flow upgrade	1	lump sum	\$ 6,000,000	\$ 6,000,000	New facility to treat peak flows at Existing Plant
2045 Alternative 4A Subtotal				\$ 35,962,762.00	
TOTAL COST					
Immediate Alternative 4A Subtotal				\$ 3,566,281	
Near-Term Alternative 4A Subtotal				\$ 31,503,499.00	
2025 Alternative 4A Subtotal				\$ 40,624,429.00	
2045 Alternative 4A Subtotal				\$ 35,962,762.00	
Wastewater Alternative 4A TOTAL				\$ 111,656,971	

Notes:
1. Costs are based on 2002 Dollars.
2. Costs include a 1.30 contingency factor and a 1.23 engineering cost factor.

TABLE D-9

CITY OF LANCASTER
 WATER AND WASTEWATER IMPROVEMENTS MASTER PLAN
 WASTEWATER SYSTEM INFRASTRUCTURE
 PROJECTED COSTS AND COMPLETION DATES

WW Infrastructure Description	Quantity	Unit	Unit Cost	Total Cost	Location Remarks
Rock Mill Corporate Park Phase 2 - Part 1 (Unit cost are 2002 for Phase 2 - Part 1)					
Pipe Diameter					
7	1193	feet	157.59 \$	188,000	Mill Park Drive south of Dave John's Ave
9	1302	feet	174.24 \$	226,900	Mill Park Drive north of Dave John's Ave
11	905	feet	157.59 \$	142,600	Mill Park Drive north of Anchor Ave
63	12	feet	157.59 \$	44,600	Mill Park Drive north of Anchor Ave
77	21	feet	210.20 \$	12,600	Anchor Ave west Mill Park Drive
78	102	feet	255.00 \$	26,000	Anchor Ave to Rock Mill Lift Station
79	15	feet	190.93 \$	2,900	Anchor Ave to Rock Mill Lift Station
1 mgd Rock Mill Lift Station	1	lump sum	938,284.00 \$	938,300	Lift Station at Rock Mill Industrial Park, Phase 2 on Mill Park Drive.
				RMCP P2 - P1 Subtotal	\$ 1,581,900
Rock Mill Corporate Park Phase 2 - Part 2					
1	1419	feet	159.04 \$	226,000	North of SR 188 and Royaltan Rd intersection in development areas C-2, I-3 and I-4.
4	1380	feet	176.33 \$	243,000	Northwest of SR 188 and US 33 Bypass intersection in development area C-3.
5	2803	feet	194.72 \$	546,000	North of SR 188 and US 33 Bypass intersection in development areas I-3 and I-4.
6	1131	feet	194.72 \$	220,000	Anchor Ave west of Mill Park Drive.
				RMCP P2 - P2 Subtotal	\$ 1,235,000
2005 NEEDS					
Property Purchase for Proposed Upper Hoeking WPCF	1	lump sum	1,000,000.00 \$	1,000,000	Along upper Hoeking River tributary south of Rainbow Dr. in development areas SF-13, SF-16 and SF-17.
Existing WPCF Rehabilitation	1	lump sum	650,000.00 \$	650,000	Upgrade/Rehabilitation to Existing WPCF/ Existing Collection System
				2005 Needs Subtotal	\$ 1,650,000
2006 NEEDS					
Rainbow Drive Sewer Rehab near Noland Dr.	1366	feet	146.41 \$	200,000	Along upper Hoeking River tributary south of Rainbow Dr. in development areas SF-13, SF-16 and SF-17.
25A	4108	feet	194.72 \$	800,000	Along upper Hoeking River tributary south of Rainbow Dr. in development areas SF-13, SF-16 and SF-17.
Existing WPCF Rehabilitation	1	lump sum	650,000.00 \$	650,000	Upgrade/Rehabilitation to Existing WPCF/ Existing Collection System
				2006 Needs Subtotal	\$ 1,650,000

TABLE D-9

CITY OF LANCASTER
 WATER AND WASTEWATER IMPROVEMENTS MASTER PLAN
 WASTEWATER SYSTEM INFRASTRUCTURE
 PROJECTED COSTS AND COMPLETION DATES

WW Infrastructure Description	Quantity	Unit	Unit Cost	Total Cost	Location Remarks
2007 NEEDS					
72A	15	feet	176.33 \$	298,000	Along Pleasant Run east of Lynwood Lane.
73	15	feet	176.33 \$	393,000	Along Pleasant Run east of Lynwood Lane in development area C-19.
Existing WPCF Rehabilitation	1	lump sum	650,000.00 \$	650,000	Upgrade/Rehabilitation to Existing WPCF/ Existing Collection System
			2007 Needs Subtotal	\$ 1,341,000	
2008 NEEDS (Lake and Allen Sewer Separation)					
80	8	1582 feet	146.75 \$	232,000	Near Rising Park on High Street and flowing south ID #81 at Lake Street
81	10	1698 feet	152.03 \$	238,000	East along Lake Street and then south along Maple Street to ID #82.
82	12	1415 feet	159.04 \$	225,000	South along Maple Street to ID # 83
83	15	1570 feet	176.33 \$	277,000	South along Maple Street to ID #84.
84	18	2151 feet	194.72 \$	419,000	South along Maple Street to the 42" interceptor at Water Street.
85	8	846 feet	146.75 \$	124,000	East along Allen Street to ID #82
86	8	1300 feet	146.75 \$	191,000	East along Sixth Avenue to ID #82
87	8	903 feet	146.75 \$	133,000	East along the right-of-way between King Street and Mulberry Street to ID #83
88	8	911 feet	146.75 \$	134,000	East along the right-of-way between Mulberry Street and Wheeling Street to ID #83
89	8	484 feet	146.75 \$	71,000	East along the right-of-way between Wheeling Street and Main Street to ID #83
Storm Sewer Work	12	2775 feet	82.50 \$	229,000	12" Gravity Storm Sewer Pipe
Storm Sewer Work	15	500 feet	90.75 \$	45,000	15" Gravity Storm Sewer Pipe
Storm Sewer Work	18	225 feet	99.00 \$	22,000	18" Gravity Storm Sewer Pipe
Storm Sewer Work	36	1200 feet	156.75 \$	188,000	Replace 30" Lake Street Combined Sewer w/36" ST
Storm Sewer Work	42	1000 feet	198.00 \$	198,000	Replace 42" Storm Sewer Pipe in kind
Storm Sewer Work	48	120 feet	742.50 \$	89,000	48" Bore and Jack Storm Sewer Pipe
Storm Sewer Work		5394 C.Y.	29.70 \$	160,000	Granular Backfill
Storm Sewer Work		2898 S.Y.	57.75 \$	167,000	Pavement Replacement
Storm Sewer Work		20 each	2,062.50 \$	41,000	Storm Sewer Manholes
Storm Sewer Work		3 each	1,980.00 \$	6,000	Catch Basins
Storm Sewer Work		1 each	24,750.00 \$	25,000	Repair 48" Discharge/Headwall on Maple Street
Storm Sewer Work		317 each	1,650.00 \$	523,000	Lateral Reconnection & two Cleanouts
Storm Sewer Work		7275 S.Y.	52.50 \$	382,000	Pavement Replacement
Existing WPCF Rehabilitation		1 lump sum	650,000.00 \$	650,000	Upgrade/Rehabilitation to Existing WPCF/ Existing Collection System
			2008 Needs Subtotal	\$ 4,789,000	

TABLE D-9

CITY OF LANCASTER
 WATER AND WASTEWATER IMPROVEMENTS MASTER PLAN
 WASTEWATER SYSTEM INFRASTRUCTURE
 PROJECTED COSTS AND COMPLETION DATES

WW Infrastructure Description	Quantity	Unit	Unit Cost	Total Cost	Location Remarks
2009 NEEDS					
59	30	6481 feet	187.55 \$	1,216,000	Treated effluent discharge from new Upper Hocking WPCF to the Hocking River.
60	30	689 feet	187.55 \$	129,000	West of Campground Rd in Rock Mill Industrial Park, Phase 1, development area I-15.
Upper Hocking Pump Station					
9 mgd pump station	1	lump sum	4,749,638.00 \$	4,750,000	Pump Station at Ety Road and West Fair Avenue.
Force main	13440	feet	195.50 \$	2,628,000	Force main from pump station to intersection of Becks Knob Road and Crumley Rd.
4.0 mgd WPCF	1	lump sum	39,360,000.00 \$	39,360,000	New WPCF on Campground Road in Rock Mill Phase 1 Industrial Park, development area I-7.
Existing WPCF Rehabilitation	1	lump sum	650,000.00 \$	650,000	Upgrade/Rehabilitation to Existing WPCF/ Existing Collection System
			2009 Needs Subtotal	\$ 48,733,000	
2010 NEEDS					
53	8	2925 feet	146.75 \$	429,000	Along Upper Hocking River tributary south of West Fair Avenue in development area SF-5.
54	15	2917 feet	176.33 \$	514,000	Along Upper Hocking River tributary east of SR 188 and Becks Knob Road intersection in development area MF-3.
Existing WPCF Rehabilitation	1	lump sum	650,000.00 \$	650,000	Upgrade/Rehabilitation to Existing WPCF/ Existing Collection System
			2010 Needs Subtotal	\$ 1,593,000	
2012 NEEDS					
10	8	1420 feet	146.75 \$	208,000	Anchor Ave east of Mill Park Drive.
25B	18	2065 feet	194.72 \$	402,000	Along upper Hocking River tributary south of Rainbow Dr. in development areas SF-13, SF-16 and SF-17.
61	21	4308 feet	220.04 \$	948,000	West of Becks Knob Rd in development areas C-6 and I-8.
Existing WPCF Rehabilitation	1	lump sum	1,300,000.00 \$	1,300,000	Upgrade/Rehabilitation to Existing WPCF/ Existing Collection System
			2012 Needs Subtotal	\$ 2,858,000	

TABLE D-9

CITY OF LANCASTER
 WATER AND WASTEWATER IMPROVEMENTS MASTER PLAN
 WASTEWATER SYSTEM INFRASTRUCTURE
 PROJECTED COSTS AND COMPLETION DATES

WW Infrastructure Description	Quantity	Unit	Unit Cost	Total Cost	Location Remarks
2015 NEEDS					
62	21	4628 feet	220.04	\$ 1,018,000	Along Becks Knob Rd in development area I-9.
17	18	5438 feet	194.72	\$ 1,059,000	Along Hunters Run near Delmont Rd in development areas C-5 and I-9.
18	15	5650 feet	176.33	\$ 996,000	Along Hunters Run tributary near Crumley Rd in development areas C-5 and I-9.
19	21	1059 feet	220.04	\$ 233,000	Along Hunters Run north of Crumley Rd in development area I-9.
20	12	1031 feet	159.04	\$ 164,000	Along Hunters Run tributary south of Crumley Rd in development area C-10.
21	12	1887 feet	159.04	\$ 300,000	Along Hunters Run tributary south of Crumley Rd in development area C-10.
70	30	3047 feet	187.55	\$ 571,000	West of the existing WPCF on Canal Street (Broad Street Express Sewer).
71	30	1989 feet	187.55	\$ 373,000	West of the existing WPCF on Canal Street (Broad Street Express Sewer).
75	48	1191 feet	275.36	\$ 328,000	Along Baldwin Run northeast of existing WPCF (Baldwin Run Express Sewer).
Hunters Run Pump Station					
1.5 mgd pump station	1	lump sum	1,265,631.00	\$ 1,266,000	Pump Station at Becks Knob Road and Crumley Road.
Force main	1030	feet	137.36	\$ 141,000	Force main from pump station to intersection of north side of Becks Knob.
Equalization Pump Station					
20 mgd pump station	1	lump sum	8,562,969.00	\$ 8,563,000	Pump Station at existing WPCF to Pump to Equalization
Misc. Equalization Structures	1	lump sum	636,000.00	\$ 636,000	Miscellaneous Structures Required for Equalization
Force Main	42	130 feet	230.00	\$ 30,000	Force Main at existing WPCF to move flow to Equalization
2 mg Equalization	1	lump sum	15,000,000.00	\$ 15,000,000	Equalization with screens and aeration at the existing WPCF
Existing WPCF Rehabilitation	1	lump sum	1,950,000.00	\$ 1,950,000	Upgrade/Rehabilitation to Existing WPCF/ Existing Collection System
			2015 Needs Subtotal	\$ 32,628,000	
2016 NEEDS					
12	27	951 feet	270.26	\$ 257,000	Northwest of Mill Park Drive and Anchor Ave intersection.
13	30	6389 feet	187.55	\$ 1,198,000	West of Wilson Rd in development areas I-1, I-2 and I-15.
Existing WPCF Rehabilitation	1	lump sum	1,950,000.00	\$ 1,950,000	Upgrade/Rehabilitation to Existing WPCF/ Existing Collection System
			2016 Needs Subtotal	\$ 3,405,000	

TABLE D-9

CITY OF LANCASTER
 WATER AND WASTEWATER IMPROVEMENTS MASTER PLAN
 WASTEWATER SYSTEM INFRASTRUCTURE
 PROJECTED COSTS AND COMPLETION DATES

WW Infrastructure Description	Quantity	Unit	Unit Cost	Total Cost	Location Remarks
2020 NEEDS					
27	18	feet	194.72	\$ 979,000	Along Hunters Run near Crumley Rd in development areas C-12, MF-3 and SF-7.
51	18	feet	194.72	\$ 1,351,000	Along Hunters Run and US 22 in development areas SF-7, SF-8 and I-10.
33	15	feet	176.33	\$ 874,000	Along Upper Hocking River tributary in development areas SF-9 and SF-10 and Greenfield Township.
34	15	feet	176.33	\$ 752,000	Along Upper Hocking River tributary in development area SF-10 and Greenfield Township.
35	27	feet	270.26	\$ 636,000	Along Hocking River south of US 33 in development area SF-10 and Greenfield Township.
36	30	feet	187.55	\$ 72,000	Along Hocking River south of US 33 in development areas C-8 and SF-3.
72B	15	feet	174.24	\$ 807,000	Along Pleasant Run east of Lynwood Lane.
28	10	feet	156.22	\$ 119,000	Along Hunters Run tributary near Shellenbarger Park in development areas C-10 and C-11.
29	12	feet	157.59	\$ 337,000	Along Hunters Run tributary north of Crumley Road in development area SF-2.
30	15	feet	174.24	\$ 641,000	Along Hunters Run near SR 188 and Royalton Rd intersection in development areas MF-2 and SF-1.
31	18	feet	190.93	\$ 471,000	Along Hunters Run north of Crumley Road in development areas SF-1 and SF-2.
Existing WPCF Rehabilitation	1	lump sum	1,300,000.00	\$ 1,300,000	Upgrade/Rehabilitation to Existing WPCF/ Existing Collection System
			2020 Needs Subtotal	\$ 8,339,000	

TABLE D-9

CITY OF LANCASTER
 WATER AND WASTEWATER IMPROVEMENTS MASTER PLAN
 WASTEWATER SYSTEM INFRASTRUCTURE
 PROJECTED COSTS AND COMPLETION DATES

WW Infrastructure Description	Quantity	Unit	Unit Cost	Total Cost	Location Remarks	
2025 NEEDS						
48	10	467	feet	156.22 \$	73,000 \$	Along Upper Hocking River tributary north of Rainbow Drive in development area SF-16 to the Rainbow Drive Pump Station.
49	10	197	feet	156.22 \$	31,000 \$	Along Upper Hocking River tributary north of Rainbow Drive in development area SF-16 near the Rainbow Drive Pump Station.
50	18	366	feet	190.93 \$	70,000 \$	Along Upper Hocking River tributary north of Rainbow Drive in development area SF-16 near the Rainbow Drive Pump Station.
23	18	4611	feet	190.93 \$	880,000 \$	Along upper Hocking River tributary near Rainbow Dr. in development area SF-16.
24	8	1132	feet	149.72 \$	169,000 \$	Along upper Hocking River tributary near Rainbow Dr. in development area SF-16.
37	8	2816	feet	149.72 \$	422,000 \$	North of Rainbow Drive in development area SF-16.
38	8	1322	feet	149.72 \$	198,000 \$	Along Upper Hocking River tributary north of Rainbow Drive in development area SF-16.
39	8	3475	feet	149.72 \$	520,000 \$	North of River Valley Highlands Subdivision near Rainbow Drive in development area SF-16.
40	12	198	feet	157.59 \$	31,000 \$	Along Hunters Run tributary east of Delmont Rd in development area MF-4.
41	10	5419	feet	156.22 \$	847,000 \$	Along Hunters Run tributary northeast of Crumley and Mt. Zion Rd intersection in development area SF-2.
Upper Hocking WPCF						
3 mgd upgrade	1	lump sum		29,520,000.00 \$	29,520,000 \$	New WPCF on Campground Road
Upper Hocking Pump Station						
4.5 mgd upgrade	1	lump sum		2,847,543.00 \$	2,848,000 \$	Pump Station at Ety Road and West Fair Avenue.
Existing WPCF Rehabilitation	1	lump sum		3,250,000.00 \$	3,250,000 \$	Upgrade/Rehabilitation to Existing WPCF/ Existing Collection System
				2025 Needs Subtotal	\$ 38,859,000	

TABLE D-9

CITY OF LANCASTER
 WATER AND WASTEWATER IMPROVEMENTS MASTER PLAN
 WASTEWATER SYSTEM INFRASTRUCTURE
 PROJECTED COSTS AND COMPLETION DATES

WW Infrastructure Description	Quantity	Unit	Unit Cost	Total Cost	Location Remarks
2030 NEEDS					
42	10744	feet	Greenfield Twp Sewer	-	Along Upper Hocking River tributary in Greenfield Township.
43	6228	feet	174.24	\$ 1,085,000	Along Hocking River south of US 33 in Greenfield Township.
44	2503	feet	190.93	\$ 478,000	Along Hocking River south of US 33 in Greenfield Township.
45	8394	feet	Greenfield Twp Sewer	-	Along Upper Hocking River tributary in Greenfield Township.
46	5122	feet	243.15	\$ 1,245,000	Along Hocking River south of US 33 in Greenfield Township.
47	10516	feet	243.15	\$ 2,557,000	Along Upper Hocking River tributary in Greenfield Township.
Hunters Run Pump Station					
1 mgd upgrade	1	lump sum	938,284.00	\$ 938,000	Pump Station at Becks Knob Road and Crumley Road.
Existing WPCF Rehabilitation	1	lump sum	3,250,000.00	\$ 3,250,000	Upgrade/Rehabilitation to Existing WPCF/ Existing Collection System
			2030 Needs Subtotal	\$ 9,553,000	
TOTAL COST					
			New/Current Construction Total	\$ 2,816,900	
			2005 Alternative 2A Subtotal	\$ 1,650,000	
			2006 Alternative 2A Subtotal	\$ 1,650,000	
			2007 Alternative 2A Subtotal	\$ 1,341,000	
			2008 Alternative 2A Subtotal	\$ 4,789,000	
			2009 Alternative 2A Subtotal	\$ 48,733,000	
			2010 Alternative 2A Subtotal	\$ 1,593,000	
			2012 Alternative 2A Subtotal	\$ 2,858,000	
			2015 Alternative 2A Subtotal	\$ 32,628,000	
			2018 Alternative 2A Subtotal	\$ 3,405,000	
			2020 Alternative 2A Subtotal	\$ 8,339,000	
			2025 Alternative 2A Subtotal	\$ 38,859,000	
			2030 Alternative 2A Subtotal	\$ 9,553,000	
			Wastewater Alternative 2A TOTAL	\$ 155,398,000	
					Running Total

TABLE D-9

CITY OF LANCASTER
 WATER AND WASTEWATER IMPROVEMENTS MASTER PLAN
 WASTEWATER SYSTEM INFRASTRUCTURE
 PROJECTED COSTS AND COMPLETION DATES

WW Infrastructure Description	Quantity	Unit	Unit Cost	Total Cost	Location Remarks
ANNUALIZED COST					
				Running Total	
2005 Alternative 2A			\$	121,000	\$121,000
2006 Alternative 2A			\$	121,000	\$242,000
2007 Alternative 2A			\$	99,000	\$341,000
2008 Alternative 2A			\$	352,000	\$693,000
2009 Alternative 2A			\$	3,586,000	\$4,279,000
2010 Alternative 2A			\$	117,000	\$4,396,000
2012 Alternative 2A			\$	210,000	\$4,606,000
2015 Alternative 2A			\$	2,401,000	\$7,007,000
2018 Alternative 2A			\$	251,000	\$7,258,000
2020 Alternative 2A			\$	614,000	\$7,872,000
2025 Alternative 2A			\$	2,859,000	\$10,731,000
2030 Alternative 2A			\$	703,000	\$11,434,000
Wastewater Alternative 2A TOTAL ANNUALIZED COST			\$	11,434,000	

Notes:

1. Costs are based on 2005 Dollars.
2. Costs include a 1.30 contingency factor and a 1.23 engineering cost factor.
3. All dates are construction completion dates.

Design Life for Analysis (Years) 20
 Interest Rate 4.000%
 Annualization Factor 0.0736