

APPENDIX C

RECOMMENDED ALTERNATIVE COSTS

1. **Table C-1 - All Recommended Master Plan and CSO Projects - Projected Costs and Completion Dates**

TABLE C-1

CITY OF LANCASTER
 LONG TERM CONTROL PLAN - ADDENDUM
 ALL RECOMMEND MASTER PLAN AND CSO PROJECTS
 PROJECTED COSTS AND COMPLETION DATES

WW Infrastructure Description		Quantity	Unit	Unit Cost	Total Cost	Location Remarks
Pipe Section Number	Pipe Diameter					
7	12	1,193	feet	\$158	\$ 188,000	Mill Park Drive south of Dave John's Ave
9	15	1,302	feet	\$174	\$ 227,000	Mill Park Drive north of Dave John's Ave
11	12	905	feet	\$158	\$ 143,000	Mill Park Drive north of Anchor Ave
63	12	283	feet	\$158	\$ 45,000	Mill Park Drive north of Anchor Ave
77	21	60	feet	\$210	\$ 13,000	Anchor Ave west Mill Park Drive
78	27	102	feet	\$255	\$ 26,000	Anchor Ave to Rock Mill Lift Station
79	18	15	feet	\$191	\$ 3,000	Anchor Ave to Rock Mill Lift Station
1 mgd Rock Mill Lift Station		1	lump sum	\$938,000	\$ 938,000	Lift Station at Rock Mill Industrial Park, Phase 2 on Mill Park Drive.
RMCP P2 - P1 Subtotal				\$	1,583,000	
Rock Mill Collection System - Phase 2						
1	12	1,419	feet	\$159	\$ 226,000	North of SR 188 and Royalton Rd intersection in development areas C-2, I-3 and I-4.
4	15	1,380	feet	\$176	\$ 243,000	Northwest of SR 188 and US 33 Bypass intersection in development area C-3.
5	18	2,803	feet	\$195	\$ 546,000	North of SR 188 and US 33 Bypass intersection in development areas I-3 and I-4.
6	18	1,131	feet	\$195	\$ 220,000	Anchor Ave west of Mill Park Drive.
RMCP P2 - P2 Subtotal				\$	1,235,000	
2005 Needs						
Property Purchase for Proposed Upper Hocking WPCF				1	lump sum	\$ 1,000,000
Ex. WPCF & Collec. Sys. Rehab				1	lump sum	\$ 650,000
2005 Needs Subtotal				\$	1,650,000	
2006 Needs						
Rainbow Drive Sewer Rehab near Noland Dr.	8 & 12	1,366	feet	\$146	\$ 200,000	Along upper Hocking River tributary south of Rainbow Dr. in development areas SF-13, SF-16 and SF-17.
25A	18	4,108	feet	\$195	\$ 800,000	Along upper Hocking River tributary south of Rainbow Dr. in development areas SF-13, SF-16 and SF-17.
Ex. WPCF & Collec. Sys. Rehab		1	lump sum	\$650,000	\$ 650,000	Upgrade/Rehabilitation to Existing WPCF/ Existing Collection System
2006 Needs Subtotal				\$	1,650,000	

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2007 Needs					
Pipe Section Number					
Pipe Diameter					
72A	1,692	feet	\$176	\$ 298,000	Along Pleasant Run east of Lynwood Lane.
73	2,201	feet	\$176	\$ 388,000	Along Pleasant Run east of Lynwood Lane in development area C-19.
Ex. WPCF & Collec. Sys. Rehab	1	lump sum	\$650,000	\$ 650,000	Upgrade/Rehabilitation to Existing WPCF/ Existing Collection System
			2007 Needs Subtotal	\$ 1,336,000	
2008 Needs					
80	1,582	feet	\$147	\$ 232,000	Near Rising Park on High Street and flowing south ID #81 at Lake Street
81	1,698	feet	\$152	\$ 258,000	East along Lake Street and then south along Maple Street to ID #82.
82	1,415	feet	\$159	\$ 225,000	South along Maple Street to ID # 83
83	1,570	feet	\$176	\$ 277,000	South along Maple Street to ID #84.
84	2,151	feet	\$195	\$ 419,000	South along Maple Street to the 42" interceptor at Water Street.
85	846	feet	\$147	\$ 124,000	East along Allen Street to ID #82
86	1,300	feet	\$147	\$ 191,000	East along Sixth Avenue to ID #82
87	903	feet	\$147	\$ 133,000	East along the right-of-way between King Street and Mulberry Street to ID #83
88	911	feet	\$147	\$ 134,000	East along the right-of-way between Mulberry Street and Wheeling Street to ID #83
89	484	feet	\$147	\$ 71,000	East along the right-of-way between Wheeling Street and Main Street to ID #83
Storm Sewer Work	12	feet	\$83	\$ 229,000	12" Gravity Storm Sewer Pipe
Storm Sewer Work	15	feet	\$91	\$ 45,000	15" Gravity Storm Sewer Pipe
Storm Sewer Work	18	feet	\$99	\$ 22,000	18" Gravity Storm Sewer Pipe
Storm Sewer Work	36	feet	\$157	\$ 188,000	Replace 30" Lake Street Combined Sewer w/36" ST
Storm Sewer Work	42	feet	\$198	\$ 198,000	Replace 42" Storm Sewer Pipe in kind
Storm Sewer Work	48	feet	\$743	\$ 89,000	48" Bore and Jack Storm Sewer Pipe
Storm Sewer Work	5,394	C.Y.	\$30	\$ 160,000	Granular Backfill
Storm Sewer Work	2,898	S.Y.	\$58	\$ 167,000	Pavement Replacement
Storm Sewer Work	20	each	\$2,063	\$ 41,000	Storm Sewer Manholes
Storm Sewer Work	3	each	\$1,980	\$ 6,000	Catch Basins
Storm Sewer Work	1	each	\$24,750	\$ 25,000	Repair 48" Discharge/Headwall on Maple Street
Storm Sewer Work	317	each	\$1,650	\$ 523,000	Lateral Reconnection & two Cleanouts
Storm Sewer Work	7,275	S.Y.	\$53	\$ 382,000	Pavement Replacement
Ex. WPCF & Collec. Sys. Rehab	1	lump sum	\$650,000	\$ 650,000	Upgrade/Rehabilitation to Existing WPCF/ Existing Collection System
			2008 Needs Subtotal	\$ 4,789,000	

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WW Infrastructure Description	Quantity	Unit	Unit Cost	Total Cost	Location Remarks
2009 NEEDS					
59	2,996	feet	\$188	\$ 562,000	Sewer along Collins Road to Proposed Upper Hocking WPCF
60	2,158	feet	\$188	\$ 405,000	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	\$4,750,000	\$ 4,750,000	Pump Station at Ety Road and West Fair Avenue.
Force main	13,440	feet	\$196	\$ 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	\$ 39,360,000	New WPCF on Campground Road in Rock Mill Phase 1 Industrial Park, development area I-7.
90	1,498	feet	\$188	\$ 281,000	Treated effluent discharge from new Upper Hocking WPCF to the Hocking River.
Ex. WPCF & Collec. Sys. Rehab	1	lump sum	\$650,000	\$ 650,000	Upgrade/Rehabilitation to Existing WPCF/ Existing Collection System
		2009 Needs Subtotal		\$ 48,636,000	
2010 NEEDS					
53	1,690	feet	\$147	\$ 248,000	Along Upper Hocking River tributary south of West Fair Avenue in development area SF-5.
54	2,917	feet	\$176	\$ 514,000	Along Upper Hocking River tributary east of SR 188 and Becks Knob Road intersection in development area MF-3.
Ex. WPCF & Collec. Sys. Rehab	1	lump sum	\$650,000	\$ 650,000	Upgrade/Rehabilitation to Existing WPCF/ Existing Collection System
		2010 Needs Subtotal		\$ 1,412,000	
2012 NEEDS					
10	1,420	feet	\$147	\$ 208,000	Anchor Ave east of Mill Park Drive.
25B	2,065	feet	\$195	\$ 402,000	Along upper Hocking River tributary south of Rainbow Dr. in development areas SF-13, SF-16 and SF-17.
61	5,478	feet	\$220	\$ 1,205,000	West of Becks Knob Rd in development areas C-6 and I-8.
Ex. WPCF & Collec. Sys. Rehab	1	lump sum	\$1,300,000	\$ 1,300,000	Upgrade/Rehabilitation to Existing WPCF/ Existing Collection System
		2012 Needs Subtotal		\$ 3,115,000	

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WW Infrastructure Description	Quantity	Unit	Unit Cost	Total Cost	Location Remarks
2015 NEEDS					
Pipe Section Number	Pipe Diameter				
62	21	4,292 feet	\$220	\$ 944,000	Along Becks Knob Rd in development area I-9.
17	18	5,438 feet	\$195	\$ 1,059,000	Along Hunters Run near Delmont Rd in development areas C-5 and I-9.
18	15	5,650 feet	\$176	\$ 996,000	Along Hunters Run tributary near Crumley Rd in development areas C-5 and I-9.
19	21	1,059 feet	\$220	\$ 233,000	Along Hunters Run north of Crumley Rd in development area I-9.
20	12	1,031 feet	\$159	\$ 164,000	Along Hunters Run tributary south of Crumley Rd in development area C-10.
21	12	1,944 feet	\$159	\$ 309,000	Along Hunters Run tributary south of Crumley Rd in development area C-10.
70	30	3,047 feet	\$188	\$ 571,000	West of the existing WPCF on Canal Street (Broad Street Express Sewer).
71	30	1,989 feet	\$188	\$ 373,000	West of the existing WPCF on Canal Street (Broad Street Express Sewer).
75	48	1,191 feet	\$275	\$ 328,000	Along Baldwin Run northeast of existing WPCF (Baldwin Run Express Sewer).
Misc. Express Sewer Structures	1	lump sum	\$636,000	\$ 636,000	Miscellaneous Structures Required for Express Sewers
Hunters Run Pump Station					
1.5 mgd Pump Station	1	lump sum	\$1,266,000	\$ 1,266,000	Pump Station at Becks Knob Road and Crumley Road.
Force main	16	1,030 feet	\$137	\$ 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	\$8,563,000	\$ 8,563,000	Pump Station at existing WPCF to Pump to Equalization
Force Main	42	130 feet	\$230	\$ 30,000	Force Main at existing WPCF to move flow to Equalization
2 mil gal Equalization	1	lump sum	\$5,000,000	\$ 5,000,000	Equalization with screens and aeration at the existing WPCF
Ex. WPCF & Collec. Sys. Rehab	1	lump sum	\$1,950,000	\$ 1,950,000	Upgrade/Rehabilitation to Existing WPCF/ Existing Collection System
		2015 Needs Subtotal		\$ 22,563,000	
2018 NEEDS					
12	27	1,336 feet	\$270	\$ 361,000	Northwest of Mill Park Drive and Anchor Ave intersection.
13	30	7,336 feet	\$188	\$ 1,376,000	West of Wilson Rd in development areas I-1, I-2 and I-15.
Ex. WPCF & Collec. Sys. Rehab	1	lump sum	\$1,950,000	\$ 1,950,000	Upgrade/Rehabilitation to Existing WPCF/ Existing Collection System
		2018 Needs Subtotal		\$ 3,687,000	

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27	3,844	feet	\$195	\$ 749,000	Along Hunters Run near Crumley Rd in development areas C-12, MF-3 and SF-7.
51	6,938	feet	\$195	\$ 1,351,000	Along Hunters Run and US 22 in development areas SF-7, SF-8 and I-10.
33	4,956	feet	\$176	\$ 874,000	Along Upper Hocking River tributary in development areas SF-9 and SF-10 and Greenfield Township.
34	4,263	feet	\$176	\$ 752,000	Along Upper Hocking River tributary in development area SF-10 and Greenfield Township.
35	2,353	feet	\$270	\$ 636,000	Along Hocking River south of US 33 in development area SF-10 and Greenfield Township.
36	383	feet	\$188	\$ 72,000	Along Hocking River south of US 33 in development areas C-8 and SF-3.
72B	4,634	feet	\$174	\$ 807,000	Along Pleasant Run east of Lynwood Lane.
28	763	feet	\$156	\$ 119,000	Along Hunters Run tributary near Shellenbarger Park in development areas C-10 and C-11.
29	2,137	feet	\$158	\$ 337,000	Along Hunters Run tributary north of Crumley Road in development area SF-2.
30	3,678	feet	\$174	\$ 641,000	Along Hunters Run near SR 188 and Royalton Rd intersection in development areas MF-2 and SF-1.
31	2,465	feet	\$191	\$ 471,000	Along Hunters Run north of Crumley Road in development areas SF-1 and SF-2.
Ex. WPCF & Collec. Sys. Rehab	1	lump sum	\$1,300,000	\$ 1,300,000	Upgrade/Rehabilitation to Existing WPCF/ Existing Collection System
2020 Needs Subtotal				\$ 8,109,000	

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Pipe Section Number	Pipe Diameter				
48	10	294 feet	\$156	\$ 46,000	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	\$ 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	\$191	\$ 70,000	Along Upper Hocking River tributary north of Rainbow Drive in development area SF-16 near the Rainbow Drive Pump Station.
23	18	4,246 feet	\$191	\$ 811,000	Along upper Hocking River tributary near Rainbow Dr. in development area SF-16.
24	8	1,132 feet	\$150	\$ 169,000	Along upper Hocking River tributary near Rainbow Dr. in development area SF-16.
37	8	2,816 feet	\$150	\$ 422,000	North of Rainbow Drive in development area SF-16.
38	8	831 feet	\$150	\$ 124,000	Along Upper Hocking River tributary north of Rainbow Drive in development area SF-16. North of River Valley Highlands Subdivision near Rainbow Drive in development area SF-16.
39	8	3,475 feet	\$150	\$ 520,000	
40	12	1,907 feet	\$158	\$ 301,000	Along Hunters Run tributary east of Delmont Rd in development area MF-4.
41	10	5,419 feet	\$156	\$ 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	\$ 29,520,000	New WPCF on Campground Road
Upper Hocking Pump Station					
4.5 mgd upgrade	1	lump sum	\$2,848,000	\$ 2,848,000	Pump Station at Ety Road and West Fair Avenue.
Ex. WPCF & Collec. Sys. Rehab	1	lump sum	\$3,250,000	\$ 3,250,000	Upgrade/Rehabilitation to Existing WPCF/ Existing Collection System
			2025 Needs Subtotal	\$ 38,959,000	

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Rock Mill Corporate Park Phase 2 - Part 1						
Pipe Section Number	Pipe Diameter					
2030 NEEDS						
42	18	10,744	feet	Greenfield Twp Sewer	-	Along Upper Hocking River tributary in Greenfield Township.
43	15	6,228	feet	\$174	\$ 1,085,000	Along Hocking River south of US 33 in Greenfield Township.
44	18	2,503	feet	\$191	\$ 478,000	Along Hocking River south of US 33 in Greenfield Township.
45	18	8,394	feet	Greenfield Twp Sewer	-	Along Upper Hocking River tributary in Greenfield Township.
46	24	5,122	feet	\$243	\$ 1,245,000	Along Hocking River south of US 33 in Greenfield Township.
47	24	10,516	feet	\$243	\$ 2,557,000	Along Upper Hocking River tributary in Greenfield Township.
Hunters Run Pump Station						
1 mgd upgrade		1	lump sum	\$938,000	\$ 938,000	Pump Station at Becks Knob Road and Crumley Road.
Ex. WPCF & Collec. Sys. Rehab		1	lump sum	\$3,250,000	\$ 3,250,000	Upgrade/Rehabilitation to Existing WPCF/ Existing Collection System
2030 Needs Subtotal					\$ 9,553,000	
TOTAL COST						
Rock Mill Corporate Park Phase 2 - Part 1 and Part 2					\$ 2,818,000	\$2,818,000
2005					\$ 1,650,000	\$4,468,000
2006					\$ 1,650,000	\$6,118,000
2007					\$ 1,336,000	\$7,454,000
2008					\$ 4,789,000	\$12,243,000
2009					\$ 48,636,000	\$60,879,000
2010					\$ 1,412,000	\$62,291,000
2012					\$ 3,115,000	\$65,406,000
2015					\$ 22,563,000	\$87,969,000
2018					\$ 3,687,000	\$91,656,000
2020					\$ 8,109,000	\$99,765,000
2025					\$ 38,959,000	\$138,724,000
2030					\$ 9,553,000	\$148,277,000
TOTAL					\$ 148,277,000	

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WW Infrastructure Description	Quantity	Unit	Unit Cost	Total Cost	Location Remarks			
<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 30%;">Pipe Section Number</td> <td style="width: 30%;">Pipe Diameter</td> <td style="width: 40%;"></td> </tr> </table>	Pipe Section Number	Pipe Diameter						
Pipe Section Number	Pipe Diameter							
Rock Mill Corporate Park Phase 2 - Part 1 and Part 2								
			2005 \$	\$ 207,000	\$207,000			
			2006 \$	\$ 121,000	\$328,000			
			2007 \$	\$ 121,000	\$449,000			
			2008 \$	\$ 98,000	\$547,000			
			2009 \$	\$ 352,000	\$899,000			
			2010 \$	\$ 3,579,000	\$4,478,000			
			2012 \$	\$ 104,000	\$4,582,000			
			2015 \$	\$ 229,000	\$4,811,000			
			2018 \$	\$ 1,660,000	\$6,471,000			
			2020 \$	\$ 271,000	\$6,742,000			
			2025 \$	\$ 597,000	\$7,339,000			
			2030 \$	\$ 2,867,000	\$10,206,000			
			2030 \$	\$ 703,000	\$10,909,000			
Wastewater Alternative 2A TOTAL ANNUALIZED COST			\$	\$ 10,909,000				

Notes:

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

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