

**Liberty Midstates MO  
Mains Study Results**

<b>Mains Classification Study</b>	<b>Customer -Related Portion of Distribution Mains</b>
Zero-Intercept Study	50.01%
Minimum System Study	<u>52.12%</u>
Average	<u><b>51.07%</b></u>

Liberty Midstates MO  
Zero-Intercept Study

Type	Total Type Footage	Zero-Int. Cost per Foot	Cost of Minimum System
PLASTIC	3,156,367	\$ 6.56	\$ 20,705,391
STEEL	5,767,159	19.77	\$ 114,006,875
Zero-Intercept System Costs			\$ 134,712,267
Total Cost			\$ 269,366,018
Zero-Intercept Costs			50.01%

Size	Type	Qty (Footage)	Original Cost	HW Adj. Cost	HW Adj. Cost per Foot	LN (HW Adj. Cost per Foot)
1	Plastic	73,118	130,140	382,425	\$ 5.2	1.65
2	Plastic	2,106,832	20,795,610	33,147,955	\$ 15.7	2.76
3	Plastic	348,788	5,472,707	13,459,760	\$ 38.6	3.65
4	Plastic	478,931	11,390,935	15,923,175	\$ 33.2	3.50
6	Plastic	127,483	5,284,910	11,463,130	\$ 89.9	4.50
8	Plastic	16,173	715,174	1,620,774	\$ 100.2	4.61
1	Steel	70,483	126,299	1,691,959	\$ 24.0	3.18
2	Steel	3,869,321	5,669,715	81,470,685	\$ 21.1	3.05
3	Steel	531,331	1,345,671	16,780,752	\$ 31.6	3.45
4	Steel	606,735	3,212,690	29,487,904	\$ 48.6	3.88
6	Steel	380,793	4,619,523	30,529,118	\$ 80.2	4.38
8	Steel	39,127	841,948	6,706,196	\$ 171.4	5.14
12	Steel	161,937	1,360,093	22,013,868	\$ 135.9	4.91
Zero Intercept Analyses						

**Zero-Intercept Study (PLASTIC)**

**X: Main Size, Y: LN (HW Adjusted Average Cost)**

X-Variable	0.3912	1.88	Intercept
X-Variable SE	0.09	0.40	Intercept SE
R-Square	<b>84.05%</b>	0.50	Model SE
F	21.07	4	df
SumSq (reg)	5	1	SumSq (resid)
X-Variable t-stat	4.59	4.74	Intercept t-stat

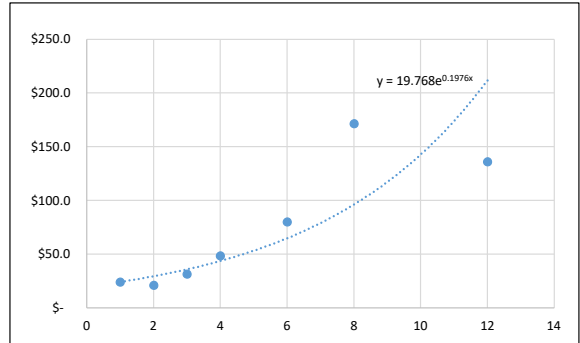
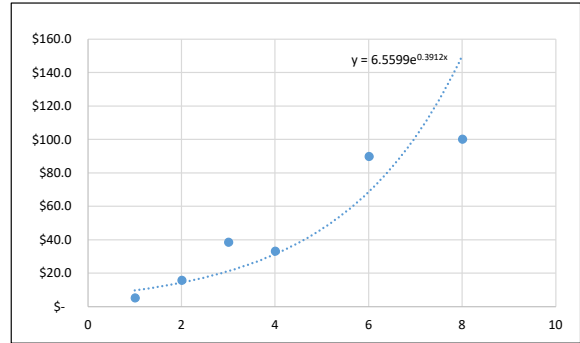
Intercept \$ 6.5599  
*Reflects a Zero Size Main Cost*

**Zero-Intercept Study (STEEL)**

**X: Main Size, Y: LN (HW Adjusted Average Cost)**

X-Variable	0.198	2.98	Intercept
X-Variable SE	0.04	0.25	Intercept SE
R-Square	<b>82.91%</b>	0.38	Model SE
F	24.25	5	df
SumSq (reg)	3	1	SumSq (resid)
X-Variable t-stat	4.92	11.89	Intercept t-stat

Intercept \$ 19.768  
*Reflects a Zero Size Main Cost*



**Liberty Midstates MO  
Minimum-System Study**

Type	Minimum System Pipe Size	% of Type Footage	Total Footage	HW Adj. Cost Per Foot	Cost of Minimum System
Plastic	2		8,923,526	\$ 15.73	\$ 140,398,777
Minimum Size Main Cost					\$ 140,398,777
Total Cost					\$ 269,366,018
Minimum System					52.12%

Size	Type	Original Cost	HW Adj. Cost	Qty (Footage)	Adj. Cost per Foot
3	Iron	80,218	856,735	29,639	28.91
8	Iron	70,417	363,427	19,985	18.18
4	Iron	237,338	2,589,166	49,989	51.79
6	Iron	58,195	264,145	1,570	168.25
10	Iron	41,712	229,223	5,338	42.94
12	Iron	2,332	26,330	583	45.16
<1	Plastic	130,140	382,425	73,118	5.23
3/4	Plastic	190,210	218,928	2,790	78.47
1	Plastic	2,209	2,967	1	2,966.51
1.25	Plastic	6,336	8,416	250	33.66
<2	Plastic	15,270	20,505	1,851	11.08
<b>2</b>	<b>Plastic</b>	<b>20,795,610</b>	<b>33,147,955</b>	<b>2,106,832</b>	<b>15.73</b>
3	Plastic	5,472,707	13,459,760	348,788	38.59
4	Plastic	11,390,935	15,923,175	478,931	33.25
6	Plastic	5,284,910	11,463,130	127,483	89.92
8	Plastic	715,174	1,620,774	16,173	100.21
24	Plastic	1,366	1,935	150	12.90
<1	Steel	126,299	1,691,959	70,483	24.01
3/4	Steel	4,693	5,651	42	134.54
1	Steel	34,778	57,640	246	234.31
1.25	Steel	13,297	26,309	1	26,309.28
<2	Steel	8,320	16,940	39	434.36
2	Steel	5,669,715	81,470,685	3,869,321	21.06
3	Steel	1,345,671	16,780,752	531,331	31.58
4	Steel	3,212,690	29,487,904	606,735	48.60
6	Steel	4,619,523	30,529,118	380,793	80.17
8	Steel	841,948	6,706,196	39,127	171.40
12	Steel	1,360,093	22,013,868	161,937	135.94
<b>Grand Total</b>		<b>\$ 61,732,105</b>	<b>\$ 269,366,018</b>	<b>8,923,526</b>	