

Table 1 - Signs

Source for non-shaded data: "Confined Spaces Compliance Costs" FEA Spreadsheet, "Giving Notice of CS to Employees"

Equations for shaded Data:

No. of Projects Not in Compliance = No. of Projects * 1-% Eff. Compliance

Number of Signs = No. of Projects * (1-% Eff. Compliance) * No. of Signs/Project (New Spaces Only)

Project Category	No. of Projects (FEA, "Giving Notice of CS to Employees," Col. B)	% Eff. Compliance (FEA, "Giving Notice of CS to Employees," Col. C)	No. of Projects not in Compliance (rounded)	No. of Signs/Project (New Spaces Only) (FEA, "Giving Notice of CS to Employees," Col. H)	Number of Signs (rounded)
1 Commercial and Public Buildings					
Small Project	3,482.75	75.7618%	844	2	1,688
Medium Project	3,246.00	75.7618%	787	10	7,868
Large Project	724.20	80.6094%	140	10	1,404
2 Warehouses					
Small Project	130.45	51.5235%	63	0	0
Medium Project	220.45	51.5235%	107	2	214
Large Project	23.10	51.5235%	11	2	22
3 Health Facilities and Laboratories					
Small Project	116.60	66.0665%	40	0	0
Medium Project	441.90	66.0665%	150	4	600
Large Project	128.60	66.0665%	44	4	175
4 Detention Facilities					
New Construction	146.70	22.4376%	114	14	1,593
6 Athletic and Entertainment Facilities					
All Projects	68.90	75.8077%	17	6	100

7 Airline Terminals						
New Construction	53.10	22.4376%	41	14	577	
8 Aircraft Service						
All Projects	29.50	75.7618%	7	5	36	
9 Auto, Bus, and Truck Service						
Small Renovation	2.00	22.4376%	2	2	3	
Major Renovation	12.00	22.4376%	9	8	74	
New Construction	87.00	80.6094%	17	18	304	
10 Residential Housing						
Small Project	25,118.03	3.3751%	24,270	1	24,270	
Medium Project	801.00	8.2063%	735	2	1,471	
Large Project	881.60	32.3626%	596	10	5,963	
11 Apartments, Hotels, and Dormitories						
All Projects	425.80	75.8846%	103	12	1,232	
12 Streets and Highways						
Repair Storm Drain/Sewer-Local St	1,783.95	80.7781%	343	5	1,715	
Install New Storm Drain/Sewer Sys	2,913.75	85.5836%	420	7	2,940	
Lane Expansion on Major Interstate	1,784.00	90.3891%	171	13	2,229	
14 Bridges						
Small Project	952.00	3.8907%	915	46	42,088	
Medium Project	1,005.50	3.8907%	966	96	92,772	
Large Project	404.00	8.6962%	369	196	72,298	
15 Dams and Reservoirs						
Small Project	10.40	52.0624%	5	0.5	2	
Medium Project	163.80	52.0624%	79	0	0	
Large Project	24.00	95.2062%	1	3	3	
16 Storm Sewers and Flood Control						
Small Project	2,489.00	51.8190%	1,199	2	2,398	

	Medium Project	350.00	80.7276%	67	59	3,980
	Large Project	59.00	80.7276%	11	193	2,195
17 Sewer, Water, and Waste Treatment Plants						
	Small Renovation	577.50	51.8923%	278	20	5,556
	Major Renovation	708.40	51.8923%	341	34	11,587
	New Construction	1,179.00	51.8923%	567	58	32,897
18 Tanks						
	Minor Installation/Renovation (Sm Contr)	216.00	47.0125%	114	6	687
	Minor Installation/Renovation (Med Contr)	176.40	61.4636%	68	9	612
	New Construction/Major Renovation (Lrg Contr)	117.60	80.7318%	23	11	249
19 Hydroelectric Power Plants						
	Small Project	1.05	90.3487%	0	0	0
	Medium Project	8.00	95.1743%	0	0	0
	Large Project	0.90	95.1743%	0	0	0
20 Other Power Plants						
	Medium Project	95.20	95.1348%	5	0	0
	Large Project	87.40	95.1348%	4	0	0
21 Electric Substations						
	Small Project	30.60	95.1348%	1	1	1
	Medium Project	101.65	95.1348%	5	3	15
	Large Project	12.35	95.1348%	1	3	2
22 Natural Gas Plants						
	Small Upgrade	3.28	41.6174%	2	2	4
	Major Renovation	3.40	61.0783%	1	8	11
	New Construction	7.36	90.2696%	1	28	20
23 Space Facilities						
	Small Project	37.00	90.3487%	4	15	54
	Medium Project	1.00	90.3487%	0	27	3
	Large Project	1.00	90.3487%	0	44	4

25 Manufacturing Facilities					
New Construction	106.70	51.3500%	52	2	104
Total	51,550.87		34,110		322,020

Table 2 - Written Confined Space Programs and Non-Rescue Procedures

Source for non-shaded data: "Confined Spaces Compliance Costs" FEA Spreadsheet, "Costs for Annual Review"

Equations for shaded data:

No of Program in Year 1 = No. of Projects with CS * (1-% Eff. Compliance)

No of Programs in Year 2 = No. of Projects with CS * (1-% Eff. Compliance) * % of Projects First Time to Contractors

Project Category	No. of Projects with CS (FEA, "Costs for Annual Review, Col. B)	% Eff. Compliance (FEA, "Costs for Annual Review, Col. D)	No. of Programs in Year 1 (rounded)	% of Projects that are First Time to Contractors (Year 2) (FEA, "Costs for Annual Review, Col. X)	No. of Programs in Year 2 (rounded)
1 Commercial and Public Buildings					
Small Project	3,482.75	50%	1,741	90%	174
Medium Project	3,246.00	70%	974	90%	97
Large Project	724.20	80%	145	90%	15
2 Warehouses					
Small Project	130.45	50%	65	100%	0
Medium Project	220.45	50%	110	100%	0
Large Project	23.10	50%	12	100%	0
3 Health Facilities and Laboratories					
Small Project	116.60	25%	87	100%	0
Medium Project	441.90	25%	331	100%	0
Large Project	128.60	25%	96	100%	0
4 Detention Facilities					

New Construction	146.70	0%	147	100%	0
6 Athletic and Entertainment Facilities					
All Projects	68.90	20%	55	100%	0
7 Airline Terminals					
New Construction	53.10	0%	53	100%	0
8 Aircraft Service					
All Projects	29.50	20%	24	100%	0
9 Auto, Bus, and Truck Service					
Small Renovation	2.00	10%	2	100%	0
Major Renovation	12.00	10%	11	100%	0
New Construction	87.00	80%	17	100%	0
10 Residential Housing					
Small Project	25,118.03	0%	25,118	85%	3,768
Medium Project	801.00	0%	801	85%	120
Large Project	881.60	10%	793	85%	119
11 Apartments, Hotels, and Dormitories					
All Projects	425.80	20%	341	100%	0
12 Streets and Highways					
Repair Storm Drain/Sewer-Local St	1,783.95	75%	446	75%	112
Install New Storm Drain/Sewer Sys	2,913.75	85%	437	75%	109
Lane Expansion on Major Interstate	1,784.00	90%	178	75%	45
14 Bridges					
Small Project	952.00	5%	904	5%	859
Medium Project	1,005.50	80%	201	5%	191
Large Project	404.00	80%	81	5%	77
15 Dams and Reservoirs					
Small Project	10.40	60%	4	100%	0
Medium Project	163.80	70%	49	100%	0

Large Project	24.00	100%	0	100%	0
16 Storm Sewers and Flood Control					
Small Project	2,489.00	50%	1,245	95%	62
Medium Project	350.00	80%	70	95%	4
Large Project	59.00	80%	12	95%	1
17 Sewer, Water, and Waste Treatment Plants					
Small Renovation	577.50	30%	404	95%	20
Major Renovation	708.40	30%	496	95%	25
New Construction	1,179.00	30%	825	95%	41
18 Tanks					
Minor Installation/Renovation (Sm Con	216.00	40%	130	95%	7
Minor Installation/Renovation (Med Co	176.40	60%	71	95%	4
New Construction/Major Renovation (L	117.60	80%	24	95%	1
19 Hydroelectric Power Plants					
Small Project	1.05	95%	0	100%	0
Medium Project	8.00	100%	0	100%	0
Large Project	0.90	100%	0	100%	0
20 Other Power Plants					
Medium Project	95.20	80%	19	100%	0
Large Project	87.40	95%	4	100%	0
21 Electric Substations					
Small Project	30.60	95%	2	100%	0
Medium Project	101.65	95%	5	100%	0
Large Project	12.35	95%	1	100%	0
22 Natural Gas Plants					
Small Upgrade	3.28	40%	2	100%	0
Major Renovation	3.40	50%	2	100%	0
New Construction	7.36	90%	1	100%	0
23 Space Facilities					

Small Project	37.00	90%	4	100%	0
Medium Project	1.00	90%	0	100%	0
Large Project	1.00	90%	0	100%	0
25 Manufacturing Facilities					
New Construction	106.70	50%	53	100%	0
Total	51,550.87		36,593		5,851

Table 3 - Rescue Procedures

Source for non-shaded data: "Confined Spaces Compliance Costs" FEA Spreadsheet, "Rescue"

Equations for shaded data:

No. of Procedures = No. of Projects with CS * (1-% Eff. Compliance)

Project Category	No. of Projects with CS (FEA, "Rescue," Col. B)	Procedures % Eff. Compliance (FEA, "Rescue," Col. W)	No. of Projects Developing Rescue Procedures (rounded)
1 Commercial and Public Buildings			
Small Project	3,482.75	50.00%	1,741
Medium Project	3,246.00	70.00%	974
Large Project	724.20	75.00%	181
2 Warehouses			
Small Project	6.52	40.00%	4
Medium Project	11.02	40.00%	7
Large Project	1.16	40.00%	1
3 Health Facilities and Laboratories			
Small Project	11.66	60.00%	5
Medium Project	44.19	60.00%	18
Large Project	12.86	60.00%	5
4 Detention Facilities			
New Construction	146.70	100.00%	0
6 Athletic and Entertainment Facilities			
All Projects	0.00	5.00%	0
7 Airline Terminals			
New Construction	53.10	100.00%	0

8 Aircraft Service			
All Projects	0.00	5.00%	0
9 Auto, Bus, and Truck Service			
Small Renovation	0.00	10.00%	0
Major Renovation	0.00	10.00%	0
New Construction	0.00	80.00%	0
10 Residential Housing			
Small Project	0.00	0.00%	0
Medium Project	0.00	10.00%	0
Large Project	0.00	25.00%	0
11 Apartments, Hotels, and Dormitories			
All Projects	0.00	5.00%	0
12 Streets and Highways			
Repair Storm Drain/Sewer-Local St	178.40	75.00%	45
Install New Storm Drain/Sewer Sys	291.38	85.00%	44
Lane Expansion on Major Interstate	178.40	90.00%	18
14 Bridges			
Small Project	0.00	75.00%	0
Medium Project	0.00	75.00%	0
Large Project	0.00	75.00%	0
15 Dams and Reservoirs			
Small Project	0.00	40.00%	0
Medium Project	0.00	50.00%	0
Large Project	0.00	90.00%	0
16 Storm Sewers and Flood Control			
Small Project	0.00	50.00%	0
Medium Project	0.00	100.00%	0
Large Project	0.00	100.00%	0

17 Sewer, Water, and Waste Treatment Plants			
Small Renovation	0.00	50.00%	0
Major Renovation	0.00	50.00%	0
New Construction	0.00	50.00%	0
18 Tanks			
Minor Installation/Renovation (Sm Contr)	216.00	55.00%	97
Minor Installation/Renovation (Med Contr)	176.40	75.00%	44
New Construction/Major Renovation (Lrg Contr)	117.60	90.00%	12
19 Hydroelectric Power Plants			
Small Project	0.00	60.00%	0
Medium Project	0.00	95.00%	0
Large Project	0.00	95.00%	0
20 Other Power Plants			
Medium Project	76.16	65.00%	27
Large Project	48.07	95.00%	2
21 Electric Substations			
Small Project	30.60	100.00%	0
Medium Project	101.65	100.00%	0
Large Project	12.35	100.00%	0
22 Natural Gas Plants			
Small Upgrade	0.00	40.00%	0
Major Renovation	0.00	60.00%	0
New Construction	0.74	100.00%	0
23 Space Facilities			
Small Project	0.00	100.00%	0
Medium Project	0.00	100.00%	0
Large Project	0.00	100.00%	0
25 Manufacturing Facilities			
New Construction	0.00	30.00%	0

TOTAL	9,167.90		3,225

Table 4 - Information Exchange

Source:FEA, "Confined Spaces Compliance Costs" FEA Spreadsheet, "Info Exchange"

Equations for shaded data:

No. of non-compliant projects = No. of Projects with CS *% Eff. Compliance

No. of entry employers exchanging information = No. of non-compliant projects * Entry employers per project

Project Category	No. of Projects with CS (FEA, "Info Exchange," Col. B)	% Eff. Compliance (FEA, "Info Exchange," Col. C)	No. of non-compliant projects (rounded)	Entry Employers per Project (FEA, "Info Exchange," Col. P)	No. entry employers exchanging information (rounded) (§§ 1926.1203(b)(2), (h)(2)(ii), (h)(3)(i)-(ii), (h)(5)(i)-(h)(5)(ii))	No. non-entry employers with "nearby" workers who could pose hazard (§ 1926.1203(h)(2)(ii)) (FEA, "Info Exchange," Col. Z)	Total simultaneous entries (§§ 1926.1203(h)(4)(i), (h)(4)(ii)) (FEA, "Info Exchange," Col. AH)	Number of CS entries which could be endangered by non-entrant workers (§§ 1926.1203(h)(4)(i), (h)(4)(ii)) (FEA, "Info Exchange," Col. AJ)
1 Commercial and Public Buildings								
Small Project	3,482.75	75.00%	871	4	3,484	0.27	3,482.75	2,786.20
Medium Project	3,246.00	75.00%	812	8	6,496	1.01	3,246.00	18,502.20
Large Project	724.20	80.00%	145	15	2,175	2.88	724.20	4,127.94
2 Warehouses								
Small Project	130.45	50.00%	65	1	65	0.19	130.45	156.54
Medium Project	220.45	50.00%	110	1	110	0.02	220.45	88.18
Large Project	23.10	50.00%	12	1	12	0.99	23.10	9.24
3 Health Facilities and Laboratories								
Small Project	116.60	65.00%	41	2	82	0.10	116.60	338.14
Medium Project	441.90	65.00%	155	2	310	0.10	441.90	574.47
Large Project	128.60	65.00%	45	3	135	1.49	128.60	167.18
4 Detention Facilities								
New Construction	146.70	20.00%	117	2	234	0.99	146.70	630.81
6 Athletic and Entertainment Facilities								
All Projects	68.90	75.00%	17	3	51	2.48	68.90	165.36
7 Airline Terminals								
New Construction	53.10	20.00%	42	2	84	0.99	53.10	228.33
8 Aircraft Service								
All Projects	29.50	75.00%	7	1	7	1.99	29.50	106.20
9 Auto, Bus, and Truck Service								
Small Renovation	2.00	20.00%	2	3	6	0.14	2.00	0.40
Major Renovation	12.00	20.00%	10	3	30	0.14	12.00	19.20
New Construction	87.00	80.00%	17	6	102	0.36	87.00	400.20

10 Residential Housing									
Small Project	25,118.03	0.00%	25,118	1	25,118	0.09	25,118.03	7,535.41	
Medium Project	801.00	5.00%	761	2	1,522	0.18	801.00	480.60	
Large Project	881.60	30.00%	617	5	3,085	0.57	881.60	13,224.00	
11 Apartments, Hotels, and Dormitories									
All Projects	425.80	75.00%	106	3	318	2.48	425.80	1,873.52	
12 Streets and Highways									
Repair Storm Drain/Sewer-Local St	1,783.95	80.00%	357	2	714	0.11	1,783.95	3,032.72	
Install New Storm Drain/Sewer Sys	2,913.75	85.00%	437	4	1,748	0.43	2,913.75	93,531.38	
Lane Expansion on Major Interstate	1,784.00	90.00%	178	6	1,068	0.40	1,784.00	128,626.40	
14 Bridges									
Small Project	952.00	0.00%	952	2	1,904	0.05	5,712.00	42,078.40	
Medium Project	1,005.50	0.00%	1,006	2	2,012	0.18	6,033.00	74,608.10	
Large Project	404.00	5.00%	384	2	768	0.18	2,424.00	54,216.80	
15 Dams and Reservoirs									
Small Project	10.40	50.00%	5	1	5	0.01	20.80	2.08	
Medium Project	163.80	50.00%	82	1	82	0.01	327.60	655.20	
Large Project	24.00	95.00%	1	2	2	0.03	24.00	1,944.00	
16 Storm Sewers and Flood Control									
Small Project	2,489.00	50.00%	1,245	4	4,980	0.11	2,489.00	6,471.40	
Medium Project	350.00	80.00%	70	6	420	0.60	350.00	15,295.00	
Large Project	59.00	80.00%	12	6	72	1.20	59.00	2,631.40	
17 Sewer, Water, and Waste Treatment Plants									
Small Renovation	577.50	50.00%	289	5	1,445	0.41	577.50	3,984.75	
Major Renovation	708.40	50.00%	354	5	1,770	1.52	708.40	6,658.96	
New Construction	1,179.00	50.00%	590	5	2,950	1.35	1,179.00	19,217.70	
18 Tanks									
Minor Installation/Renovation (Sm Contr)	216.00	45.00%	119	1	119	0.06	216.00	194.40	
Minor Installation/Renovation (Med Contr)	176.40	60.00%	71	2	142	0.05	176.40	2,451.96	
New Construction/Major Renovation (Lrg Contr)	117.60	80.00%	24	2	48	0.08	117.60	4,574.64	
19 Hydroelectric Power Plants									
Small Project	1.05	90.00%	0	1	0	0.01	2.10	8.82	
Medium Project	8.00	95.00%	0	2	0	0.02	16.00	38.40	
Large Project	0.90	95.00%	0	2	0	0.04	5.40	38.97	
20 Other Power Plants									
Medium Project	95.20	95.00%	5	20	100	0.01	95.20	2,399.04	
Large Project	87.40	95.00%	4	20	80	0.01	87.40	5,278.96	
21 Electric Substations									
Small Project	30.60	95.00%	2	1	2	0.01	30.60	67.32	
Medium Project	101.65	95.00%	5	1	5	0.03	101.65	1,402.77	

Large Project	12.35	95.00%	1	1	1	0.05	12.35	170.43
22 Natural Gas Plants								
Small Upgrade	3.28	40.00%	2	5	10	0.10	3.28	0.66
Major Renovation	3.40	60.00%	1	5	5	0.11	3.40	21.76
New Construction	7.36	90.00%	1	15	15	0.15	7.36	535.81
23 Space Facilities								
Small Project	37.00	90.00%	4	5	20	0.90	37.00	159.10
Medium Project	1.00	90.00%	0	5	0	1.35	1.00	7.80
Large Project	1.00	90.00%	0	15	0	1.80	1.00	12.60
25 Manufacturing Facilities								
New Construction	106.70	50.00%	53	2	106	0.12	106.70	544.17
Total	51,550.87		35,324		64,019	28.85	63,546.12	522,276.00

Table 5 - Testing and Monitoring

Source: "Confined Spaces Compliance Costs" FEA Spreadsheet, "Any Testing."

Project Category	Total Number of Projects Requiring Control (FEA, "Any Testing," Col. B)	% of All Projects that Should Use Some Type of Testing (FEA, "Any Testing," Col. F)	Adjusted No. of Entries Requiring This Control (FEA, "Any Testing," Col. L)
1 Commercial and Public Buildings			
Small Project	3482.75	100%	8.00
Medium Project	3246	100%	57.00
Large Project	724.2	100%	57.00
2 Warehouses			
Small Project	104.36	80%	12.00
Medium Project	176.36	80%	4.00
Large Project	18.48	80%	4.00
3 Health Facilities and Laboratories			
Small Project	116.6	100%	25.00
Medium Project	441.9	100%	13.00
Large Project	128.6	100%	13.00
4 Detention Facilities			
New Construction	146.7	100%	43.00
6 Athletic and Entertainment Facilities			
All Projects	68.9	100%	24.00
7 Airline Terminals			

New Construction	53.1	100%	43.00
8 Aircraft Service			
All Projects	29.5	100%	36.00
9 Auto, Bus, and Truck Service			
Small Renovation	2	100%	2.00
Major Renovation	12	100%	16.00
New Construction	87	100%	46.00
10 Residential Housing			
Small Project	5023.605	20%	3.00
Medium Project	160.2	20%	6.00
Large Project	176.32	20%	150.00
11 Apartments, Hotels, and Dormitories			
All Projects	85.16	20%	28.00
12 Streets and Highways			
Repair Storm Drain/Sewer-Local St	1783.95	100%	18.00
Install New Storm Drain/Sewer Sys	2913.75	100%	321.00
Lane Expansion on Major Interstate	1784	100%	721.00
14 Bridges			
Small Project	856.8	90%	442.00
Medium Project	904.95	90%	742.00
Large Project	363.6	90%	1342.00
15 Dams and Reservoirs			
Small Project	10.4	100%	2.00
Medium Project	163.8	100%	40.00
Large Project	24	100%	810.00
16 Storm Sewers and Flood Control			
Small Project	2489	100%	6.00
Medium Project	350	100%	18.00
Large Project	59	100%	41.00

17 Sewer, Water, and Waste Treatment Plants			
Small Renovation	577.5	100%	69.00
Major Renovation	708.4	100%	94.00
New Construction	1179	100%	163.00
18 Tanks			
Minor Installation/Renovation (Sm Contr)	216	100%	9.00
Minor Installation/Renovation (Med Contr)	176.4	100%	139.00
New Construction/Major Renovation (Lrg Contr)	117.6	100%	389.00
19 Hydroelectric Power Plants			
Small Project	1.05	100%	84.00
Medium Project	8	100%	48.00
Large Project	0.9	100%	433.00
20 Other Power Plants			
Medium Project	95.2	100%	252.00
Large Project	87.4	100%	604.00
21 Electric Substations			
Small Project	30.6	100%	22.00
Medium Project	101.65	100%	138.00
Large Project	12.35	100%	138.00
22 Natural Gas Plants			
Small Upgrade	3.28	100%	2.00
Major Renovation	3.4	100%	64.00
New Construction	7.36	100%	728.00
23 Space Facilities			
Small Project	37	100%	43.00
Medium Project	1	100%	78.00
Large Project	1	100%	127.50
25 Manufacturing Facilities			
New Construction	0	0%	0.00

Total	29,352.08		8,717.50
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Table 6 - Atmospheric Monitoring Set-up and Calibration

Source: "Confined Spaces Compliance Costs" FEA Spreadsheet, "Continuous Monitoring" and "Periodic Monitoring"

Equations for shaded data:

No. of Entries for Continuous Monitoring = No. of Projects with CS * (1-% Eff. Compliance) * No. of Entries Needing Control

No. of Entries for Periodic Monitoring = No. of Projects Requiring Control *% Eff. Compliance * No. of Entries per Project Requiring This Control

Project Category	Continuous Monitoring				Periodic Monitoring				Calibration		
	No. of Projects with CS (FEA, Continuous Monitoring, Col. B)	% Eff. Compliance (FEA, Continuous Monitoring, Col. D)	No. of Entries [Per Project] Needing Control (FEA, Continuous Monitoring, Col. F)	No. of Entries for Continuous Monitoring	No. of Projects Requiring Control (FEA, Periodic Monitoring, Col. E)	% Eff. Compliance (FEA, Periodic Monitoring, Col. D)	No. of Entries per Project Requiring This Control (FEA, Periodic Monitoring, Col. G)	No. of Entries for Periodic Monitoring	No. of Projects Needing to Test (Continuous Monitoring Performed) (FEA, Calibration, Col. D)	% Eff. Compliance (FEA, Calibration, Column C)	No. of Projects Needing to Calibrate
1 Commercial and Public Buildings											
Small Project	3,482.75	NA	0.00	0.00	3,482.75	NA	NA	0.00	0.00	54%	0.00
Medium Project	3,246.00	NA	0.00	0.00	3,246.00	89%	6.00	2,193.76	0.00	77%	0.00
Large Project	724.20	NA	0.00	0.00	724.20	92%	6.00	326.29	0.00	86%	0.00
2 Warehouses											
Small Project	130.45	NA	0.00	0.00	130.45	47%	12.00	822.85	0.00	63%	0.00
Medium Project	220.45	NA	0.00	0.00	176.36	44%	4.00	397.30	0.00	63%	0.00
Large Project	23.10	NA	0.00	0.00	18.48	44%	4.00	41.63	0.00	63%	0.00
3 Health Facilities and Laboratories											
Small Project	116.60	NA	0.00	0.00	116.60	70%	25.00	875.58	0.00	54%	0.00
Medium Project	441.90	NA	0.00	0.00	441.90	70%	11.00	1,460.07	0.00	54%	0.00
Large Project	128.60	NA	0.00	0.00	128.60	70%	11.00	424.90	0.00	54%	0.00
4 Detention Facilities											
New Construction	146.70	0.90	39.00	572.13	0.00	NA	NA	0.00	146.70	100%	0.00
6 Athletic and Entertainment Facilities											
All Projects	68.90	NA		0.00	68.90	43%	6.00	233.95	0.00	17%	0.00
7 Airline Terminals											
New Construction	53.10	0.90	39.00	207.09	0.00	NA	NA	0.00	53.10	100%	0.00
8 Aircraft Service											
All Projects	29.50	NA		0.00	0.00	NA	NA	0.00	0.00	17%	0.00
9 Auto, Bus, and Truck Service											
Small Renovation	2.00	NA		0.00	2.00	32%	2.00	2.70	0.00	17%	0.00
Major Renovation	12.00	NA		0.00	12.00	32%	16.00	129.76	0.00	17%	0.00
New Construction	87.00	NA		0.00	87.00	85%	40.00	522.64	0.00	81%	0.00

10 Residential Housing											
Small Project	25,118.03	NA		0.00	2,511.80	92%	0.80	154.58	0.00	9%	0.00
Medium Project	801.00	NA		0.00	160.20	88%	1.20	22.18	0.00	9%	0.00
Large Project	881.60	NA		0.00	440.80	69%	30.00	4,069.05	0.00	27%	0.00
11 Apartments, Hotels, and Dormitories											
All Projects	425.80	NA		0.00	425.80	45%	34.00	7,982.70	0.00	18%	0.00
12 Streets and Highways											
Repair Storm Drain/Sewer-Local St	1,783.95	0.90	16.00	2,854.32	1,783.95	92%	16.00	2,161.76	1,783.95	82%	320.10
Install New Storm Drain/Sewer Sys	2,913.75	0.90	301.00	87,703.88	2,913.75	92%	301.00	66,423.78	2,913.75	82%	522.82
Lane Expansion on Major Interstate	1,784.00	0.95	35.10	3,130.92	1,784.00	96%	35.10	2,371.25	1,784.00	91%	160.05
14 Bridges											
Small Project	952.00	1.00	442.00	0.00	333.20	100%	442.00	0.00	47.60	100%	0.00
Medium Project	1,005.50	1.00	742.00	0.00	351.93	100%	742.00	0.00	50.28	100%	0.00
Large Project	404.00	1.00	1,342.00	0.00	141.40	100%	1,342.00	0.00	20.20	100%	0.00
15 Dams and Reservoirs											
Small Project	10.40		0.00	0.00	10.40	51%	2.00	10.15	0.00	62%	0.00
Medium Project	163.80		0.00	0.00	163.80	67%	40.00	2,131.24	0.00	62%	0.00
Large Project	24.00	0.95	810.00	972.00	0.00	NA	0.00	0.00	24.00	48%	12.43
16 Storm Sewers and Flood Control											
Small Project	2,489.00	NA	0.00	0.00	2,489.00	39%	6.00	9,138.30	0.00	27%	0.00
Medium Project	350.00	NA	0.00	0.00	350.00	92%	18.00	481.88	0.00	91%	0.00
Large Project	59.00	NA	0.00	0.00	59.00	92%	41.00	185.03	0.00	91%	0.00
17 Sewer, Water, and Waste Treatment Plants											
Small Renovation	577.50	NA		0.00	577.50	62%	69.00	15,340.66	0.00	100%	0.00
Major Renovation	708.40	NA		0.00	708.40	62%	94.00	25,635.94	0.00	100%	0.00
New Construction	1,179.00	NA		0.00	1,179.00	62%	163.00	73,985.10	0.00	100%	0.00
18 Tanks											
Minor Installation/Renovation (Sm Contr)	216.00	0.60	9.00	777.60	216.00	85%	9.00	299.67	216.00	54%	98.56
Minor Installation/Renovation (Med Contr)	176.40	0.70	139.00	7,355.88	176.40	88%	139.00	2,834.84	176.40	73%	48.29
New Construction/Major Renovation (Lrg Cor)	117.60	0.80	389.00	9,149.28	117.60	92%	389.00	3,525.99	117.60	86%	16.10
19 Hydroelectric Power Plants											
Small Project	1.05			0.00	1.05	96%	84.00	3.35	0.00	82%	0.00
Medium Project	8.00			0.00	8.00	77%	48.00	87.51	0.00	82%	0.00
Large Project	0.90			0.00	0.90	85%	433.00	59.21	0.00	82%	0.00
20 Other Power Plants											
Medium Project	95.20	0.85	82.00	1,170.96	95.20	77%	222.00	4,922.29	23.80	54%	10.85
Large Project	87.40	0.95	544.00	2,377.28	87.40	96%	544.00	1,845.60	21.85	73%	5.98
21 Electric Substations											
Small Project	30.60	0.95	10.00	15.30	30.60	92%	22.00	52.26	3.06	82%	0.56
Medium Project	101.65	0.95	30.00	152.48	101.65	92%	138.00	1,089.04	10.17	82%	1.85
Large Project	12.35	0.95	30.00	18.53	12.35	92%	138.00	132.31	1.24	82%	0.23
22 Natural Gas Plants											
Small Upgrade	3.28	0.40	1.20	2.36	0.00	NA	0.00	0.00	3.28	32%	2.24

Major Renovation	3.40	0.60	38.40	52.22	0.00	NA	0.00	0.00	3.40	45%	1.86
New Construction	7.36	0.90	655.20	482.23	0.00	NA	0.00	0.00	7.36	64%	2.69
23 Space Facilities											
Small Project	37.00	NA		0.00	37.00	92%	43.00	120.86	0.00	91%	0.00
Medium Project	1.00	NA		0.00	1.00	92%	78.00	5.93	0.00	91%	0.00
Large Project	1.00	NA		0.00	1.00	92%	127.50	9.69	0.00	91%	0.00
25 Manufacturing Facilities											
New Construction	106.70	NA		0.00	106.70	NA	0.00	0.00	0.00	0%	0.00
Total	51,550.87			116,994.45	26,012.02			232,513.58	7,407.73		1,204.60

Set-up Combined Total = 116,994.45 + 232,513.58 = 349,508.03

Table 7 - Alternate Procedures Verification

Source: "Confined Spaces Compliance Costs" FEA Spreadsheet, "Issue Permits," "Written Verification of Safe"

Equations for shaded data:

Non-compliant projects = No. of Projects with CS * (1-% Eff. Compliance)

No. written verification of safe entry = Non-compliant projects * No. of entries not needing permit

Project Category	No. of Projects with CS (FEA "Issue Permits," Col. B)	% Eff. Compliance (FEA "Issue Permits," Column F)	Non-compliant projects	Number of Entries Not Needing Permit [per project] (FEA , "Issue Permits," Column J)	No. written verification of safe entry (for non-permitted entries) (rounded)
1 Commercial and Public Buildings					
Small Project	3,482.75	83%	602.94	7.00	4,221
Medium Project	3,246.00	93%	224.78	50.00	11,239
Large Project	724.20	97%	25.07	50.00	1,254
2 Warehouses					
Small Project	130.45	69%	40.65	9.60	390
Medium Project	220.45	69%	68.70	3.20	220
Large Project	23.10	69%	7.20	3.20	23
3 Health Facilities and Laboratories					
Small Project	116.60	58%	48.45	20.80	1,008
Medium Project	441.90	58%	183.61	10.00	1,836
Large Project	128.60	58%	53.43	10.00	534
4 Detention Facilities					
New Construction	146.70	45%	81.27	9.00	731
6 Athletic and Entertainment Facilities					
All Projects	68.90	47%	36.44	24.00	875
7 Airline Terminals					

	New Construction	53.10	45%	29.42	9.00	265
8	Aircraft Service					
	All Projects	29.50	48%	15.32	36.00	552
9	Auto, Bus, and Truck Service					
	Small Renovation	2.00	65%	0.69	2.00	1
	Major Renovation	12.00	65%	4.15	16.00	66
	New Construction	87.00	65%	30.12	29.00	874
10	Residential Housing					
	Small Project	25,118.03	31%	17418.90	2.90	50,515
	Medium Project	801.00	45%	444.38	5.90	2,622
	Large Project	881.60	72%	244.55	136.50	33,381
11	Apartments, Hotels, and Dormitories					
	All Projects	425.80	51%	209.53	44.00	9,219
12	Streets and Highways					
	Repair Storm Drain/Sewer-Local St	1,783.95	96%	63.95	14.40	921
	Install New Storm Drain/Sewer Sys	2,913.75	96%	104.45	276.10	28,838
	Lane Expansion on Major Interstate	1,784.00	96%	63.95	652.90	41,753
14	Bridges					
	Small Project	952.00	100%	0.00	397.80	0
	Medium Project	1,005.50	100%	0.00	667.80	0
	Large Project	404.00	100%	0.00	1207.80	0
15	Dams and Reservoirs					
	Small Project	10.40	72%	2.89	1.90	5
	Medium Project	163.80	84%	26.01	28.00	728
	Large Project	24.00	100%	0.00	810.00	0
16	Storm Sewers and Flood Control					
	Small Project	2,489.00	100%	0.00	26.00	0
	Medium Project	350.00	100%	0.00	435.00	0
	Large Project	59.00	100%	0.00	442.00	0

17 Sewer, Water, and Waste Treatment Plants						
Small Renovation	577.50	93%	43.12	0.00	0	
Major Renovation	708.40	93%	52.90	0.00	0	
New Construction	1,179.00	93%	88.03	0.00	0	
18 Tanks						
Minor Installation/Renovation (Sm Contr)	216.00	85%	31.36	1.90	60	
Minor Installation/Renovation (Med Contr)	176.40	93%	12.81	26.40	338	
New Construction/Major Renovation (Lrg Contr)	117.60	96%	4.27	81.70	349	
19 Hydroelectric Power Plants						
Small Project	1.05	96%	0.04	16.80	1	
Medium Project	8.00	100%	0.00	40.80	0	
Large Project	0.90	100%	0.00	368.00	0	
20 Other Power Plants						
Medium Project	95.20	85%	14.15	110.00	1,557	
Large Project	87.40	100%	0.00	187.50	0	
21 Electric Substations						
Small Project	30.60	96%	1.14	9.00	10	
Medium Project	101.65	96%	3.78	27.00	102	
Large Project	12.35	96%	0.46	27.00	12	
22 Natural Gas Plants						
Small Upgrade	3.28	93%	0.24	2.00	0	
Major Renovation	3.40	100%	0.00	64.00	0	
New Construction	7.36	100%	0.00	615.80	0	
23 Space Facilities						
Small Project	37.00	100%	0.00	0.00	0	
Medium Project	1.00	100%	0.00	0.00	0	
Large Project	1.00	100%	0.00	0.00	0	
25 Manufacturing Facilities						
New Construction	106.70	86%	15.08	0.00	0	

Total	51,550.87		20,298.22	7,015.70	194,500

Table 8 - Evaluation and Identification of Permit Spaces

Source: "Confined Spaces Compliance Costs" FEA Spreadsheet, "Classify Spaces as PRCS"
 Note: FEA estimates "average time of about 12 minutes to evaluate and identify a permit space."

Equations for shaded data:

No. non-compliant projects = No. of projects * (1-%Eff. Compliance)

Project Category	No. of Projects (FEA, "Classify Spaces as PRCS," Col. B)	%Eff. Compliance (FEA, "Classify Spaces as PRCS," Col. F)	No. non-compliant projects (rounded)
1 Commercial and Public Buildings			
Small Project	3,482.75	82.69%	603.00
Medium Project	3,246.00	93.08%	225.00
Large Project	724.20	96.54%	25.00
2 Warehouses			
Small Project	130.45	68.84%	41.00
Medium Project	220.45	68.84%	69.00
Large Project	23.10	68.84%	7.00
3 Health Facilities and Laboratories			
Small Project	116.60	58.45%	48.00
Medium Project	441.90	58.45%	184.00
Large Project	128.60	58.45%	53.00
4 Detention Facilities			
New Construction	146.70	44.60%	81.00
6 Athletic and Entertainment Facilities			
All Projects	68.90	47.12%	36.00

7	Airline Terminals			
	New Construction	53.10	44.60%	29.00
8	Aircraft Service			
	All Projects	29.50	48.06%	15.00
9	Auto, Bus, and Truck Service			
	Small Renovation	2.00	65.38%	1.00
	Major Renovation	12.00	65.38%	4.00
	New Construction	87.00	65.38%	30.00
10	Residential Housing			
	Small Project	25,118.03	30.65%	17,419.00
	Medium Project	801.00	44.52%	444.00
	Large Project	881.60	72.26%	245.00
11	Apartments, Hotels, and Dormitories			
	All Projects	425.80	50.79%	210.00
12	Streets and Highways			
	Repair Storm Drain/Sewer-Local St	1,783.95	96.42%	64.00
	Install New Storm Drain/Sewer Sys	2,913.75	96.42%	104.00
	Lane Expansion on Major Interstate	1,784.00	96.42%	64.00
14	Bridges			
	Small Project	952.00	100.00%	0.00
	Medium Project	1,005.50	100.00%	0.00
	Large Project	404.00	100.00%	0.00
15	Dams and Reservoirs			
	Small Project	10.40	72.22%	3.00
	Medium Project	163.80	84.12%	26.00
	Large Project	24.00	100.00%	0.00
16	Storm Sewers and Flood Control			
	Small Project	2,489.00	100.00%	0.00

	Medium Project	350.00	100.00%	0.00
	Large Project	59.00	100.00%	0.00
17 Sewer, Water, and Waste Treatment Plants				
	Small Renovation	577.50	92.53%	43.00
	Major Renovation	708.40	92.53%	53.00
	New Construction	1,179.00	92.53%	88.00
18 Tanks				
	Minor Installation/Renovation (Sm Contr)	216.00	85.48%	31.00
	Minor Installation/Renovation (Med Contr)	176.40	92.74%	13.00
	New Construction/Major Renovation (Lrg Contr)	117.60	96.37%	4.00
19 Hydroelectric Power Plants				
	Small Project	1.05	96.39%	0.00
	Medium Project	8.00	100.00%	0.00
	Large Project	0.90	100.00%	0.00
20 Other Power Plants				
	Medium Project	95.20	85.13%	14.00
	Large Project	87.40	100.00%	0.00
21 Electric Substations				
	Small Project	30.60	96.28%	1.00
	Medium Project	101.65	96.28%	4.00
	Large Project	12.35	96.28%	0.00
22 Natural Gas Plants				
	Small Upgrade	3.28	92.57%	0.00
	Major Renovation	3.40	100.00%	0.00
	New Construction	7.36	100.00%	0.00
23 Space Facilities				
	Small Project	37.00	100.00%	0.00
	Medium Project	1.00	100.00%	0.00
	Large Project	1.00	100.00%	0.00

25 Manufacturing Facilities			
New Construction	106.70	85.87%	15.00
TOTAL	51,550.87		20,296.00

Table 9 - LOTO Worker Time

Source: "Confined Spaces Compliance Costs" FEA Spreadsheet, "LOTO"

Equations for shaded data:

No. of non-compliant projects = No. of projects with CS * % Eff. Compliance

No. of entries requiring LOTO = No. of non-compliant projects * Average number of entries requiring LOTO

Project Category	No. of Projects with CS (FEA "LOTO," Col. A)	% Eff. Compliance (FEA "LOTO," Col. C)	No. of non-compliant projects	Average Number of Entries Requiring LOTO [per project] (FEA "LOTO," Col. E)	No. of Entries Requiring LOTO
1 Commercial and Public Buildings					
Small Project	3,482.75	0.81	677.91	4	2,711.63
Medium Project	3,246.00	0.84	505.46	6	3,032.76
Large Project	724.20	0.92	56.39	6	338.31
2 Warehouses					
Small Project	130.45	0.61	50.78	12	609.40
Medium Project	220.45	0.84	34.33	4	137.31
Large Project	23.10	0.84	3.60	4	14.39
3 Health Facilities and Laboratories					
Small Project	116.60	0.53	54.47	25	1,361.75
Medium Project	441.90	0.53	206.43	13	2,683.65
Large Project	128.60	0.53	60.08	13	780.99
4 Detention Facilities					
New Construction	146.70	NA	0.00	0	0.00
6 Athletic and Entertainment Facilities					

All Projects	68.90	0.30	48.56	22	1,068.39
7 Airline Terminals					
New Construction	53.10	NA	0.00	0	0.00
8 Aircraft Service					
All Projects	29.50	NA	0.00	0	0.00
9 Auto, Bus, and Truck Service					
Small Renovation	2.00	NA	0.00	0	0.00
Major Renovation	12.00	NA	0.00	0	0.00
New Construction	87.00	NA	0.00	0	0.00
10 Residential Housing					
Small Project	25,118.03	0.36	16047.67	0.9	14,442.90
Medium Project	801.00	0.52	383.81	1.8	690.86
Large Project	881.60	0.80	176.01	45	7,920.64
11 Apartments, Hotels, and Dormitories					
All Projects	425.80	0.31	292.04	34	9,929.46
12 Streets and Highways					
Repair Storm Drain/Sewer-Local St	1,783.95	0.96	70.02	2	140.05
Install New Storm Drain/Sewer Sys	2,913.75	0.98	57.18	20	1,143.70
Lane Expansion on Major Interstate	1,784.00	0.99	9.80	20	196.07
14 Bridges					
Small Project	952.00	NA	0.00	0	0.00
Medium Project	1,005.50	NA	0.00	0	0.00
Large Project	404.00	NA	0.00	0	0.00
15 Dams and Reservoirs					
Small Project	10.40	0.67	3.42	2	6.84
Medium Project	163.80	0.75	40.39	40	1,615.73
Large Project	24.00	NA	0.00	0	0.00
16 Storm Sewers and Flood Control					

Small Project	2,489.00	NA	0.00	0	0.00
Medium Project	350.00	NA	0.00	0	0.00
Large Project	59.00	NA	0.00	0	0.00
17 Sewer, Water, and Waste Treatment Plants					
Small Renovation	577.50	NA	0.00	0	0.00
Major Renovation	708.40	NA	0.00	0	0.00
New Construction	1,179.00	NA	0.00	0	0.00
18 Tanks					
Minor Installation/Renovation (Sm Contr)	216.00	0.60	87.14	9	784.24
Minor Installation/Renovation (Med Contr)	176.40	0.68	56.93	139	7,913.26
New Construction/Major Renovation (Lrg Co	117.60	0.80	23.72	389	9,227.40
19 Hydroelectric Power Plants					
Small Project	1.05	1.00	0.00	84	0.00
Medium Project	8.00	NA	0.00	48	0.00
Large Project	0.90	NA	0.00	433	0.00
20 Other Power Plants					
Large Project	87.40	NA	0.00	604	0.00
21 Electric Substations					
Small Project	30.60	NA	0.00	22	0.00
Medium Project	101.65	NA	0.00	138	0.00
Large Project	12.35	NA	0.00	138	0.00
22 Natural Gas Plants					
Small Upgrade	3.28	1.00	0.00	0	0.00
Major Renovation	3.40	1.00	0.00	153.6	0.00
New Construction	7.36	NA	0.00	0	0.00
23 Space Facilities					
Small Project	37.00	NA	0.00	0	0.00
Medium Project	1.00	NA	0.00	0	0.00
Large Project	1.00	NA	0.00	0	0.00

25 Manufacturing Facilities					
New Construction	106.70	NA	0.00		0.00
Total	51,455.67		18,946.15		66,749.73

Table 10 - Permits Issued

Source: "Confined Spaces Compliance Costs" FEA Spreadsheet, "Issue Permits"

Equations for shaded data:

No. of non-compliant projects issuing permits = No. of projects with CS * % Eff. Compliance

No. of permits issued by non-compliant projects = Non-compliant projects issuing permits * No. of permits issued per project

Project Category	No. of Projects with CS (FEA, "Issue Permits." Col. B)	No. of Permits Issued Per Project (FEA, "Issue Permits." Col. H)	Total Permits (FEA, "Issue Permit," Col. I)	%Eff. Compliance (FEA Col. F)	Non-compliant projects issuing permits	No. of Permits Issued by non-compliant projects
1 Commercial and Public Buildings						
Small Project	3482.75	1	3,482.75	77%	805.73	806
Medium Project	3246	7	22,722.00	91%	300.38	2,103
Large Project	724.2	7	5,069.40	95%	33.51	235
2 Warehouses						
Small Project	130.45	2	313.08	58%	54.32	130
Medium Project	220.45	1	176.36	58%	91.80	73
Large Project	23.1	1	18.48	58%	9.62	8
3 Health Facilities and Laboratories						
Small Project	116.6	8	956.12	44%	64.74	531
Medium Project	441.9	3	1,325.70	44%	245.36	736
Large Project	128.6	3	385.80	44%	71.40	214
4 Detention Facilities						
New Construction	146.7	34	4,987.80	26%	108.60	3,693
6 Athletic and Entertainment Facilities						
All Projects	68.9	0	0.00	31%	47.45	0

7 Airline Terminals						
New Construction	53.1	34	1,805.40	26%	39.31	1,337
8 Aircraft Service						
All Projects	29.5	0	0.00	31%	20.47	0
9 Auto, Bus, and Truck Service						
Small Renovation	2	0	0.00	54%	0.93	0
Major Renovation	12	0	0.00	54%	5.55	0
New Construction	87	17	1,479.00	54%	40.25	684
10 Residential Housing						
Small Project	25118.025	0	251.18	9%	22,955.60	230
Medium Project	801	0	80.10	27%	585.63	59
Large Project	881.6	14	11,901.60	63%	322.28	4,351
11 Apartments, Hotels, and Dormitories						
All Projects	425.8	0	0.00	32%	291.62	0
12 Streets and Highways						
Repair Storm Drain/Sewer-Local St	1783.95	3	4,638.27	96%	80.02	208
Install New Storm Drain/Sewer Sys	2913.75	45	130,827.38	96%	130.70	5,869
Lane Expansion on Major Interstate	1784	68	121,490.40	96%	80.03	5,450
14 Bridges						
Small Project	952	44	42,078.40	100%	0.00	0
Medium Project	1005.5	74	74,608.10	100%	0.00	0
Large Project	404	134	54,216.80	100%	0.00	0
15 Dams and Reservoirs						
Small Project	10.4	0	1.04	67%	3.43	0
Medium Project	163.8	12	1,965.60	81%	30.85	370
Large Project	24	0	0.00	100%	0.00	0
16 Storm Sewers and Flood Control						
Small Project	2489	0	0.00	100%	0.00	0
Medium Project	350	2	700.00	100%	0.00	0

Large Project	59	4	236.00	100%	0.00	0
17 Sewer, Water, and Waste Treatment Plants						
Small Renovation	577.5	69	39,847.50	91%	52.37	3,614
Major Renovation	708.4	94	66,589.60	91%	64.24	6,039
New Construction	1179	163	192,177.00	91%	106.92	17,428
18 Tanks						
Minor Installation/Renovation (Sm Contr)	216	7	1,533.60	82%	39.42	280
Minor Installation/Renovation (Med Contr)	176.4	113	19,862.64	91%	16.10	1,813
New Construction/Major Renovation (Lrg Cor)	117.6	307	36,138.48	95%	5.37	1,649
19 Hydroelectric Power Plants						
Small Project	1.05	67	70.56	95%	0.05	3
Medium Project	8	7	57.60	100%	0.00	0
Large Project	0.9	65	58.50	100%	0.00	0
20 Other Power Plants						
Medium Project	95.2	142	13,518.40	82%	17.37	2,466
Large Project	87.4	417	36,402.10	100%	0.00	0
21 Electric Substations						
Small Project	30.6	13	397.80	95%	1.40	18
Medium Project	101.65	111	11,283.15	95%	4.64	515
Large Project	12.35	111	1,370.85	95%	0.56	63
22 Natural Gas Plants						
Small Upgrade	3.28	0	0.00	91%	0.30	0
Major Renovation	3.4	0	0.00	100%	0.00	0
New Construction	7.36	112	825.79	100%	0.00	0
23 Space Facilities						
Small Project	37	43	1,591.00	100%	0.00	0
Medium Project	1	78	78.00	100%	0.00	0
Large Project	1	126	126.00	100%	0.00	0
25 Manufacturing Facilities						

New Construction	106.7	51	5,441.70	81%	19.92	1,016
Total	51,550.87		913,087.03		26,748.26	61,987.39

Table 11 - Annual Review

Source: "Confined Spaces Compliance Costs" FEA Spreadsheet, "Annual Review"

Equations for shaded data:

No. Projects Written Procedures & No Annual Review = (No. Projects with Formal Procedures) * (% with Written Procedures & No Annual Review)

No. Projects with No Annual Review = (No. Projects Written Procedures & No Annual Review) + (No. with Informal Procedures) + (No. with No Procedures)

Project Category	No. of Projects with CS (FEA, "Annual Review," Col. B)	No. Projects with Formal Procedures (FEA, "Annual Review," Col. P)	% with Written Procedures & No Annual Review (FEA, "Annual Review," Col. Y)	No. Projects Written Procedures & No Annual Review (rounded)	No. with Informal Procedures (FEA, "Annual Review," Col. R)	No. with No Procedures (FEA, "Annual Review," Col. U)	No. Projects with No Annual Review (rounded)
1 Commercial and Public Buildings							
Small Project	3,482.75	1,741.38	50%	871	870.69	870.69	2,612
Medium Project	3,246.00	2,272.20	50%	1,136	649.20	324.60	2,110
Large Project	724.20	579.36	50%	290	108.63	36.21	435
2 Warehouses							
Small Project	130.45	65.23	50%	33	6.52	58.70	98
Medium Project	220.45	110.23	50%	55	11.02	99.20	165
Large Project	23.10	11.55	50%	6	1.16	10.40	18
3 Health Facilities and Laboratories							
Small Project	116.60	29.15	50%	15	17.49	69.96	102
Medium Project	441.90	110.48	50%	55	66.29	265.14	386
Large Project	128.60	32.15	50%	16	19.29	77.16	112
4 Detention Facilities							
New Construction	146.70	0.00	50%	0	29.34	117.36	147
6 Athletic and Entertainment Facilities							
All Projects	68.90	13.78	50%	7	3.45	51.68	62
7 Airline Terminals							

New Construction	53.10	0.00	50%	0	10.62	42.48	53
8 Aircraft Service							
All Projects	29.50	5.90	50%	3	1.48	22.13	27
9 Auto, Bus, and Truck Service							
Small Renovation	2.00	0.20	50%	0	0.80	1.00	2
Major Renovation	12.00	1.20	50%	1	4.80	6.00	12
New Construction	87.00	69.60	50%	35	17.40	0.00	52
10 Residential Housing							
Small Project	25,118.03	0.00	50%	0	0.00	25,118.03	25,118
Medium Project	801.00	0.00	50%	0	160.20	640.80	801
Large Project	881.60	88.16	50%	44	440.80	352.64	837
11 Apartments, Hotels, and Dormitories							
All Projects	425.80	85.16	50%	43	21.29	319.35	384
12 Streets and Highways							
Repair Storm Drain/Sewer-Local St	1,783.95	1,337.96	50%	669	356.79	89.20	1,115
Install New Storm Drain/Sewer Sys	2,913.75	2,476.69	50%	1,238	291.38	145.69	1,675
Lane Expansion on Major Interstate	1,784.00	1,605.60	50%	803	89.20	89.20	981
14 Bridges							
Small Project	952.00	47.60	50%	24	856.80	47.60	928
Medium Project	1,005.50	804.40	50%	402	201.10	0.00	603
Large Project	404.00	20.20	50%	10	363.60	20.20	394
15 Dams and Reservoirs							
Small Project	10.40	6.24	50%	3	0.52	3.64	7
Medium Project	163.80	114.66	50%	57	16.38	32.76	106
Large Project	24.00	24.00	50%	12	0.00	0.00	12
16 Storm Sewers and Flood Control							
Small Project	2,489.00	1,244.50	50%	622	1,244.50	0.00	1,867
Medium Project	350.00	280.00	50%	140	70.00	0.00	210
Large Project	59.00	47.20	50%	24	11.80	0.00	36
17 Sewer, Water, and Waste Treatment Plants							
Small Renovation	577.50	173.25	50%	87	346.50	57.75	491

Major Renovation	708.40	212.52	50%	106	425.04	70.84	602
New Construction	1,179.00	353.70	50%	177	707.40	117.90	1,002
18 Tanks							
Minor Installation/Renovation (Sm Contr)	216.00	86.40	50%	43	86.40	43.20	173
Minor Installation/Renovation (Med Contr)	176.40	105.84	50%	53	52.92	17.64	124
New Construction/Major Renovation (Lrg Contr)	117.60	94.08	50%	47	17.64	5.88	71
19 Hydroelectric Power Plants							
Small Project	1.05	1.00	50%	0	0.00	0.05	0
Medium Project	8.00	8.00	50%	4	0.00	0.00	4
Large Project	0.90	0.90	50%	0	0.00	0.00	0
20 Other Power Plants							
Medium Project	95.20	76.16	50%	38	0.00	19.04	57
Large Project	87.40	83.03	50%	42	4.37	0.00	46
21 Electric Substations							
Small Project	30.60	29.07	50%	15	0.00	1.53	17
Medium Project	101.65	96.57	50%	48	0.00	5.08	53
Large Project	12.35	11.73	50%	6	0.00	0.62	7
22 Natural Gas Plants							
Small Upgrade	3.28	1.31	50%	1	1.64	0.33	3
Major Renovation	3.40	1.70	50%	1	1.70	0.00	3
New Construction	7.36	6.62	50%	3	0.74	0.00	4
23 Space Facilities							
Small Project	37.00	33.30	50%	17	3.70	0.00	21
Medium Project	1.00	0.90	50%	0	0.10	0.00	0
Large Project	1.00	0.90	50%	0	0.10	0.00	0
25 Manufacturing Facilities							
New Construction	106.70	53.35	50%	27	32.01	21.34	80
	51,550.87			7,329			44,225

Table 12 - Training Records

Source: "Confined Spaces Compliance Costs" FEA Spreadsheet, "Training," & "Supervisor Training."

Equations for shaded data:

Non-compliant Projects = No. of Projects with CS * (1- %Eff. Compliance Entrants)

Total Training Recipients = Non-compliant Projects * (No. Entrants + No. Standby + No. Supervisors)

Project Category	No. of Projects with CS, (FEA, "Training," Col. B)	% Eff. Compliance Entrants (FEA, "Training," Col. C)	Non-compliant Projects	No. Entrants (FEA, "Training," Col. X)	No. Standby (FEA, "Training," Col. AL)	No. of Supervisors (FEA, "Supervisor Training," Col. P)	Total Training Recipients (rounded)
1 Commercial and Public Buildings							
Small Project	3482.75	59.35%	1,415.86	7.5	2	2	16,282
Medium Project	3246	79.67%	659.81	20.0	3	2	16,495
Large Project	724.2	83.74%	117.77	40.0	4	3	5,535
2 Warehouses							
Small Project	130.45	55.28%	58.34	3.0	2	2	408
Medium Project	220.45	55.28%	98.58	3.0	2	2	690
Large Project	23.1	55.28%	10.33	3.0	2	2	72
3 Health Facilities and Laboratories							
Small Project	116.6	51.22%	56.88	6.0	2	2	569
Medium Project	441.9	51.22%	215.58	3.0	2	2	1,509
Large Project	128.6	51.22%	62.74	3.0	2	2	439
4 Detention Facilities							
New Construction	146.7	100.00%	0.00	4.5	2	2	0
6 Athletic and Entertainment Facilities							
All Projects	68.9	22.19%	53.61	5.0	2	2	482

7 Airline Terminals							
New Construction	53.1	100.00%	0.00	4.5	2	2	0
8 Aircraft Service							
All Projects	29.5	22.76%	22.79	3.0	2	2	160
9 Auto, Bus, and Truck Service							
Small Renovation	2	26.82%	1.46	3.0	2	2	10
Major Renovation	12	26.82%	8.78	5.0	2	2	79
New Construction	87	100.00%	0.00	8.0	2	2	0
10 Residential Housing							
Small Project	25118.025	25.07%	18,820.36	2.0	2	2	112,922
Medium Project	801	33.40%	533.49	4.0	2	2	4,268
Large Project	881.6	58.37%	366.98	20.0	3	2	9,174
11 Apartments, Hotels, and Dormitories							
All Projects	425.8	24.17%	322.89	5.0	2	2	2,906
12 Streets and Highways							
Repair Storm Drain/Sewer-Local St	1783.95	79.56%	364.62	5.5	2	2	3,464
Install New Storm Drain/Sewer Sys	2913.75	87.74%	357.32	15.0	2	2	6,789
Lane Expansion on Major Interstate	1784	91.82%	145.85	20.0	3	2	3,646
14 Bridges							
Small Project	952	79.56%	194.58	6.0	2	2	1,946
Medium Project	1005.5	79.56%	205.51	6.0	2	2	2,055
Large Project	404	79.56%	82.57	6.0	3	2	908
15 Dams and Reservoirs							
Small Project	10.4	49.71%	5.23	3.0	2	2	37
Medium Project	163.8	70.66%	48.05	6.0	2	2	481
Large Project	24	87.43%	3.02	30.0	3	2	106
16 Storm Sewers and Flood Control							
Small Project	2489	58.44%	1,034.51	12.0	2	2	16,552

Medium Project	350	91.69%	29.09	40.0	4	2	1,338
Large Project	59	91.69%	4.90	60.0	5	2	329
17 Sewer, Water, and Waste Treatment Plants							
Small Renovation	577.5	58.25%	241.12	9.0	2	2	3,135
Major Renovation	708.4	58.25%	295.78	16.0	3	2	6,211
New Construction	1179	58.25%	492.27	30.0	3	2	17,229
18 Tanks							
Minor Installation/Renovation (Sm Contr)	216	53.93%	99.50	6.0	2	2	995
Minor Installation/Renovation (Med Contr)	176.4	66.50%	59.10	8.0	2	2	709
New Construction/Major Renovation (Lrg Contr)	117.6	83.25%	19.70	12.0	2	2	315
19 Hydroelectric Power Plants							
Small Project	1.05	58.63%	0.43	3.0	2	2	3
Medium Project	8	79.32%	1.65	10.0	2	2	23
Large Project	0.9	87.59%	0.11	20.0	3	2	3
20 Other Power Plants							
Medium Project	95.2	66.42%	31.97	15.0	2	2	607
Large Project	87.4	95.80%	3.67	75.0	6	2	304
21 Electric Substations							
Small Project	30.6	95.80%	1.28	3.0	2	2	9
Medium Project	101.65	95.80%	4.27	6.0	2	2	43
Large Project	12.35	95.80%	0.52	10.0	2	2	7
22 Natural Gas Plants							
Small Upgrade	3.28	49.63%	1.65	5.0	2	2	15
Major Renovation	3.4	66.42%	1.14	18.0	3	2	26
New Construction	7.36	91.61%	0.62	24.0	3	2	18
23 Space Facilities							

Small Project	37	91.73%	3.06	20.0	3	2	77
Medium Project	1	91.73%	0.08	30.0	3	2	3
Large Project	1	91.73%	0.08	40.0	4	2	4
25 Manufacturing Facilities							
New Construction	106.7	35.10%	69.25	30.0	3	2	2,424
Total			26,628.76				241,811

New workers (13%) = 31,435

Table 13 - Attendant Communications

Source: "Confined Spaces Compliance Costs" FEA Spreadsheet, "Attendant" & "Issue Permits"

Equations for shaded data:

Non-compliant Projects = No. of Projects with CS * % Eff. Compliance

No. of Entries with Attendants = Non-compliant Projects /Number of Spaces Monitored Simultaneously*
 (No. of Entries per Project - No. of Entries Not Needing Permit)

Project Category	No. of Projects with CS (FEA, "Attendant Communications," Col. B)	% Eff. Compliance (FEA, "Attendant Communications," Col. C)	Non-compliant Projects	Number of Spaces Monitored Simultaneously (FEA, "Attendant Communications," Col D.)	No. of Entries per Project (FEA, "Issue Permit," Col. C)	No. of Entries Not Needing Permit (FEA, "Issue Permits," Col. J)	No. of Entries with Attendants (rounded)
1 Commercial and Public Buildings							
Small Project	3,482.75	0.81	677.91	1	8.00	7.00	678
Medium Project	3,246.00	0.84	505.46	1	57.00	50.00	3,538
Large Project	724.20	0.92	56.39	1	57.00	50.00	395
2 Warehouses							
Small Project	130.45	1.00	0.00	1	12.00	9.60	0
Medium Project	220.45	1.00	0.00	1	4.00	3.20	0
Large Project	23.10	1.00	0.00	1	4.00	3.20	0
3 Health Facilities and Laboratories							
Small Project	116.60	1.00	0.00	1	29.00	20.80	0
Medium Project	441.90	1.00	0.00	1	13.00	10.00	0
Large Project	128.60	1.00	0.00	1	13.00	10.00	0
4 Detention Facilities							
New Construction	146.70	0.61	57.11	1	43.00	9.00	1,942
6 Athletic and Entertainment Facilities							
All Projects	68.90	NA	0.00	1	24.00	24.00	0
7 Airline Terminals							
New Construction	53.10	0.61	20.67	1	43.00	9.00	703
8 Aircraft Service							

All Projects	29.50	NA	0.00	1	36.00	36.00	0
9 Auto, Bus, and Truck Service							
Small Renovation	2.00	NA	0.00	1	2.00	2.00	0
Major Renovation	12.00	NA	0.00	1	16.00	16.00	0
New Construction	87.00	NA	0.00	1	46.00	29.00	0
10 Residential Housing							
Small Project	25,118.03	0.92	2005.96	1	3.00	2.99	20
Medium Project	801.00	0.92	63.97	1	6.00	5.90	6
Large Project	881.60	0.92	70.41	1	150.00	136.50	950
11 Apartments, Hotels, and Dormitories							
All Projects	425.80	NA	0.00	1	44.00	44.00	0
12 Streets and Highways							
Repair Storm Drain/Sewer-Local St	1,783.95	0.97	56.02	1	17.00	14.40	146
Install New Storm Drain/Sewer Sys	2,913.75	0.98	68.62	1	321.00	276.10	3,081
Lane Expansion on Major Interstate	1,784.00	0.98	28.01	1	721.00	652.90	1,907
14 Bridges							
Small Project	952.00	1.00	0.00	2	442.00	397.80	0
Medium Project	1,005.50	1.00	0.00	2	742.00	667.80	0
Large Project	404.00	1.00	0.00	2	1342.00	1207.80	0
15 Dams and Reservoirs							
Small Project	10.40	1.00	0.00	2	2.00	1.90	0
Medium Project	163.80	1.00	0.00	2	40.00	28.00	0
Large Project	24.00	1.00	0.00	1	810.00	810.00	0
16 Storm Sewers and Flood Control							
Small Project	2,489.00	NA	0.00	1	26.00	26.00	0
Medium Project	350.00	NA	0.00	1	437.00	435.00	0
Large Project	59.00	NA	0.00	1	446.00	442.00	0
17 Sewer, Water, and Waste Treatment Plants							
Small Renovation	577.50	NA	0.00	1	69.00	0.00	0
Major Renovation	708.40	NA	0.00	1	94.00	0.00	0
New Construction	1,179.00	NA	0.00	1	163.00	0.00	0
18 Tanks							
Minor Installation/Renovation (Sm Contr)	216.00	0.64	78.42	1	9.00	1.90	557
Minor Installation/Renovation (Med Contr)	176.40	0.80	35.58	1	139.00	26.40	4,006

New Construction/Major Renovation (Lrg Contr)	117.60	0.88	14.23	1	389.00	81.70	4,374
19 Hydroelectric Power Plants							
Small Project	1.05	0.84	0.17	2	84.00	16.80	6
Medium Project	8.00	1.00	0.00	2	48.00	40.80	0
Large Project	0.90	1.00	0.00	2	433.00	368.00	0
20 Other Power Plants							
Medium Project	95.20	0.76	22.89	1	252.00	110.00	3,251
Large Project	87.40	1.00	0.00	1	604.00	187.50	0
21 Electric Substations							
Small Project	30.60	0.96	1.23	1	22.00	9.00	16
Medium Project	101.65	0.96	4.07	1	138.00	27.00	452
Large Project	12.35	0.96	0.49	1	138.00	27.00	55
22 Natural Gas Plants							
Small Upgrade	3.28	0.52	1.58	1	2.00	2.00	0
Major Renovation	3.40	NA	0.00	1	64.00	64.00	0
New Construction	7.36	1.00	0.00	1	728.00	615.80	0
23 Space Facilities							
Small Project	37.00	NA	0.00	1	43.00	0.00	0
Medium Project	1.00	NA	0.00	1	78.00	0.00	0
Large Project	1.00	NA	0.00	1	126.00	0.00	0
25 Manufacturing Facilities							
New Construction	106.70	0.37	67.20	1	51.00	0.00	3,427
Total	51,550.87		3836.39				29,510

Table 14 - Rescue

Source: "Confined Spaces Compliance Costs" FEA Spreadsheet, "Rescue"

Project Category	No. of Projects in Need of Inhouse Rescue. (Col. V.)
1 Commercial and Public Buildings	
Small Project	3482.75
Medium Project	3246
Large Project	724.2
2 Warehouses	
Small Project	6.5225
Medium Project	11.0225
Large Project	1.155
3 Health Facilities and Laboratories	
Small Project	11.66
Medium Project	44.19
Large Project	12.86
4 Detention Facilities	
New Construction	146.7
6 Athletic and Entertainment Facilities	
All Projects	0
7 Airline Terminals	
New Construction	53.1
8 Aircraft Service	

All Projects	0
9 Auto, Bus, and Truck Service	
Small Renovation	0
Major Renovation	0
New Construction	0
10 Residential Housing	
Small Project	0
Medium Project	0
Large Project	0
11 Apartments, Hotels, and Dormitories	
All Projects	0
12 Streets and Highways	
Repair Storm Drain/Sewer-Local St	178.395
Install New Storm Drain/Sewer Sys	291.375
Lane Expansion on Major Interstate	178.4
14 Bridges	
Small Project	0
Medium Project	0
Large Project	0
15 Dams and Reservoirs	
Small Project	0
Medium Project	0
Large Project	0
16 Storm Sewers and Flood Control	
Small Project	0
Medium Project	0
Large Project	0
17 Sewer, Water, and Waste Treatment Plants	

Small Renovation	0
Major Renovation	0
New Construction	0
18 Tanks	
Minor Installation/Renovation (Sm Contr)	216
Minor Installation/Renovation (Med Cont)	176.4
New Construction/Major Renovation (Lrg)	117.6
19 Hydroelectric Power Plants	
Small Project	0
Medium Project	0
Large Project	0
20 Other Power Plants	
Medium Project	76.16
Large Project	48.07
21 Electric Substations	
Small Project	30.6
Medium Project	101.65
Large Project	12.35
22 Natural Gas Plants	
Small Upgrade	0
Major Renovation	0
New Construction	0.736
23 Space Facilities	
Small Project	0
Medium Project	0
Large Project	0
25 Manufacturing Facilities	
New Construction	0
	9167.896

Table 15 - Tags Purchased (Item 13)

Source: "Confined Spaces Compliance Costs" FEA Spreadsheet, "Lockout Tagout"

Equations for shaded data:

No. of Non-compliant Projects = No. of Projects with CS * (1-% Eff. Compliance)

No. of Tags = No. of Non-compliant Projects * No. of CS per Project Requiring LOTO * Avg. No. of Entries [per project] Requiring LOTO * No. of Tags per Entry

Project Category	No. of Projects with CS (FEA , "Lockout Tagout," Col. B)	% Eff. Compliance (FEA , "Lockout Tagout," Col. C)	No. of Non-compliant Projects (rounded)	No. of CS per Project Requiring LOTO (FEA, "Lockout Tagout," Col. D)	Avg. No. of Entries [per project] Requiring LOTO (FEA, "Lockout Tagout," Col.E)	No. of Tags (rounded)
1 Commercial and Public Buildings						
Small Project	3,482.75	0.81	678	4	4	10,848
Medium Project	3,246.00	0.84	505	6	6	18,180
Large Project	724.20	0.92	56	6	6	2,016
2 Warehouses						
Small Project	130.45	0.61	51	2	12	1,224
Medium Project	220.45	0.84	34	2	4	272
Large Project	23.10	0.84	4	2	4	32
3 Health Facilities and Laboratories						
Small Project	116.60	0.53	54	4	25	5,400
Medium Project	441.90	0.53	206	8	13	21,424
Large Project	128.60	0.53	60	8	13	6,240
4 Detention Facilities						
New Construction	146.70	NA	0	0	0	0
6 Athletic and Entertainment Facilities						
All Projects	68.90	30%	49	5	22	5,390

7 Airline Terminals						
New Construction	53.10	NA	0	0	0	0
8 Aircraft Service						
All Projects	29.50	NA	0	0	0	0
9 Auto, Bus, and Truck Service						
Small Renovation	2.00	NA	0	0	0	0
Major Renovation	12.00	NA	0	0	0	0
New Construction	87.00	NA	0	0	0	0
10 Residential Housing						
Small Project	25,118.03	36%	16,048	1	0.9	14,443
Medium Project	801.00	52%	384	2	1.8	1,382
Large Project	881.60	80%	176	10	45	79,200
11 Apartments, Hotels, and Dormitories						
All Projects	425.80	31%	292	9	34	89,352
12 Streets and Highways						
Repair Storm Drain/Sewer-Local St	1,783.95	0.96	70	1	2	140
Install New Storm Drain/Sewer Sys	2,913.75	0.98	57	1	20	1,140
Lane Expansion on Major Interstate	1,784.00	0.99	10	1	20	200
14 Bridges						
Small Project	952.00	NA	0	0	0	0
Medium Project	1,005.50	NA	0	0	0	0
Large Project	404.00	NA	0	0	0	0
15 Dams and Reservoirs						
Small Project	10.40	0.67	3	1	2	6
Medium Project	163.80	0.75	40	2	40	3,200
Large Project	24.00	NA	0	0	0	0
16 Storm Sewers and Flood Control						
Small Project	2,489.00	NA	0	0	0	0
Medium Project	350.00	NA	0	0	0	0

Large Project	59.00	NA	0	0	0	0
17 Sewer, Water, and Waste Treatment Plants						
Small Renovation	577.50	NA	0	0	0	0
Major Renovation	708.40	NA	0	0	0	0
New Construction	1,179.00	NA	0	0	0	0
18 Tanks						
Minor Installation/Renovation (Sm Contr)	216.00	60%	87	6	9	4,698
Minor Installation/Renovation (Med Contr)	176.40	68%	57	9	139	71,307
New Construction/Major Renovation (Lrg Cd)	117.60	80%	24	11	389	102,696
19 Hydroelectric Power Plants						
Small Project	1.05	1.00	0	5	84	0
Medium Project	8.00	NA	0	6	48	0
Large Project	0.90	NA	0	18	433	0
20 Other Power Plants						
Large Project	87.40	NA	0	7	604	0
21 Electric Substations						
Small Project	30.60	NA	0	3	22	0
Medium Project	101.65	NA	0	7	138	0
Large Project	12.35	NA	0	7	138	0
22 Natural Gas Plants						
Small Upgrade	3.28	100%	0	0	0	0
Major Renovation	3.40	100%	0	8	153.6	0
New Construction	7.36	NA	0			
23 Space Facilities						
Small Project	37.00	NA	0	0	0	0
Medium Project	1.00	NA	0	0	0	0
Large Project	1.00	NA	0	0	0	0
25 Manufacturing Facilities						
New Construction	106.70	NA	0	0	0	0
TOTAL	51,455.67		18,945			438,790

Table 16 - Projects Purchasing 3-Gas Monitors for Atmospheric Testing (Item 13)

Source: "Confined Spaces Compliance Costs" FEA Spreadsheet, "Any Testing"

Equations for shaded data:

No. of Projects Purchasing Equipment = No. of Projects Requiring Control * (1-% Eff. Compliance) * % Noncompliant Projects Purchasing this Equip.

Project Category	No. of Projects Requiring Control (FEA, "Any Testing," Col. K)	% Eff. Compliance (FEA, "Any Testing," Col. J)	% Noncompliant Projects Purchasing this Equip. (FEA, "Any Testing," Column R)	No. Projects Purchasing Equipment (rounded)
1 Commercial and Public Buildings				
Small Project	3,482.75	62.45%	75.00%	981
Medium Project	3,246.00	81.23%	34.00%	207
Large Project	724.20	88.74%	25.00%	20
2 Warehouses				
Small Project	104.36	47.44%	95.00%	52
Medium Project	176.36	78.22%	95.00%	36
Large Project	18.48	78.22%	95.00%	4
3 Health Facilities and Laboratories				
Small Project	116.60	69.96%	99.00%	35
Medium Project	441.90	69.96%	99.00%	131
Large Project	128.60	69.96%	99.00%	38
4 Detention Facilities				
New Construction	146.70	100.00%	10.00%	0
6 Athletic and Entertainment Facilities				
All Projects	68.90	43.41%	95.00%	37
7 Airline Terminals				
New Construction	53.10	100.00%	10.00%	0

8 Aircraft Service				
All Projects	29.50	43.68%	95.00%	16
9 Auto, Bus, and Truck Service				
Small Renovation	2.00	32.42%	90.00%	1
Major Renovation	12.00	32.42%	90.00%	7
New Construction	87.00	84.98%	95.00%	12
10 Residential Housing				
Small Project	5,023.61	80.00%	100.00%	1,005
Medium Project	160.20	80.00%	100.00%	32
Large Project	176.32	80.00%	95.00%	34
11 Apartments, Hotels, and Dormitories				
All Projects	85.16	80.00%	95.00%	16
12 Streets and Highways				
Repair Storm Drain/Sewer-Local St	1,783.95	92.43%	20.00%	27
Install New Storm Drain/Sewer Sys	2,913.75	92.43%	15.00%	33
Lane Expansion on Major Interstate	1,784.00	96.21%	15.00%	10
14 Bridges				
Small Project	856.80	100.00%	0.00%	0
Medium Project	904.95	100.00%	0.00%	0
Large Project	363.60	100.00%	0.00%	0
15 Dams and Reservoirs				
Small Project	10.40	91.87%	95.00%	1
Medium Project	163.80	91.87%	20.00%	3
Large Project	24.00	99.19%	1.00%	0
16 Storm Sewers and Flood Control				
Small Project	2,489.00	38.81%	90.00%	1,371
Medium Project	350.00	100.00%	0.00%	0
Large Project	59.00	100.00%	0.00%	0
17 Sewer, Water, and Waste Treatment Plants				
Small Renovation	577.50	61.50%	10.00%	22
Major Renovation	708.40	61.50%	10.00%	27
New Construction	1,179.00	61.50%	10.00%	45

18 Tanks				
Minor Installation/Renovation (Sm Contr)	216.00	65.32%	40.00%	30
Minor Installation/Renovation (Med Contr)	176.40	73.02%	30.00%	14
New Construction/Major Renovation (Lrg Contr)	117.60	88.44%	15.00%	2
19 Hydroelectric Power Plants				
Small Project	1.05	96.20%	90.00%	0
Medium Project	8.00	96.20%	10.00%	0
Large Project	0.90	96.20%	5.00%	0
20 Other Power Plants				
Medium Project	95.20	68.95%	25.00%	7
Large Project	87.40	96.12%	50.00%	2
21 Electric Substations				
Small Project	30.60	96.12%	10.00%	0
Medium Project	101.65	96.12%	10.00%	0
Large Project	12.35	96.12%	10.00%	0
22 Natural Gas Plants				
Small Upgrade	3.28	53.42%	25.00%	0
Major Renovation	3.40	76.71%	10.00%	0
New Construction	7.36	92.24%	10.00%	0
23 Space Facilities				
Small Project	37.00	92.40%	100.00%	3
Medium Project	1.00	92.40%	100.00%	0
Large Project	1.00	92.40%	100.00%	0
25 Manufacturing Facilities				
New Construction	0.00	24.80%	0.00%	0
TOTAL	29,352.08			4,261