DATA COLLECTION FORM AND RISK SCORING WORKSHEET A

FEMA 455 DATA COLLECTION FORM, PAGE 1

GENERAL BUILDING INFORMATION

PRE-FIELD INFORMATION

This page of the form is to be completed *before* the field visit from available documentation or from a knowledgeable site representative.

Building Name/ID _____

Address: _____

Cross Streets: _____

Year Built: _____

Year(s) of major retrofits: _____

Retrofit Description _____

Type of Glass: _____

Number of Floors/Building Height: _____

Occupants _____

Total Area (sq ft): _____

Footprint Area (sq ft) _____

Occupancy Use: _____

(Critical Infrastructure and Key Resources [CI/KR] Sector and Sub-Sector Info)

Hazardous Material Kept on Site: _____

Replacement Value: _____

Target Potential to this Facility _____

Target Potential to this Facility Type: _____

Historic Registry Listing _____

TARGET DENSITY

Number of potential *high value* targets within vicinity of subject building.

Facility Type (CIKR Sector):	Distance		
	< 100 feet	≥100 ft and < 300 ft	≥ 300 ft and ≤ 1000 ft
Agriculture and Food			
Banking and Finance			
Chemical			
Commercial			
Critical Manufacturing			
Dams			
Defense Industrial Base			
Emergency Services			
Energy			
Government Facilities			
Information Technology			
National Monuments/Icons			
Nuclear			
Postal and Shipping			
Public Health and Healthcare			
Telecommunications			
Transportation Systems			
Water Supply			
TOTAL =			

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CONSEQUENCES

BUILDING CHARACTERISTICS		ATTRIBUTE OPTIONS					CONSEQUENCES RATING FOR GIVEN THREAT SCENARIO								
							Internal			Explosive			CBR		
		a.	b.	c.	d.	e.	Intrusion	Explosive	CBR	Zone I	Zone II	Zone III	Zone I	Zone II	Zone III
1. CONSEQUENCES	1.1 Locality Type	Rural / Suburban	Semi-urban/ Lt. Industrial	Industrial	Urban	Dense Urban									
		0.06	0.46	0.53	0.58	0.63									
		0.04	0.32	0.37	0.40	0.43									
		0.17	1.23	1.41	1.55	1.67									
		0.04	0.32	0.37	0.40	0.43									
		0.17	1.23	1.41	1.55	1.67									
	1.2 # Occupants	< 200	≥200 - < 400	≥400 - < 600	≥ 600 - < 800	≥800 - < 1000									
		0.25	1.21	1.52	1.74	1.92									
		0.17	0.84	1.06	1.21	1.33									
		0.33	1.61	2.03	2.32	2.55									
		0.17	0.84	1.06	1.21	1.33									
		0.33	1.61	2.03	2.32	2.55									
		≥ 1,000 - < 2,000	≥ 2,000 - < 4,000	≥4,000 - < 6,000	≥6,000 - < 8,000	≥ 8,000 - < 10,000									
		1.98	2.09	2.19	2.28	2.37									
		1.38	1.46	1.53	1.59	1.65									
		2.65	2.79	2.92	3.05	3.16									
		1.38	1.46	1.53	1.59	1.65									
		2.65	2.79	2.92	3.05	3.16									
		≥10,000 - < 20,000	≥ 20,000 - < 40,000	≥ 40,000 - < 60,000	≥ 60,000 - < 80,000	≥ 80,000									
		2.41	2.44	2.46	2.48	2.50									
		1.68	1.69	1.71	1.72	1.74									
		3.22	3.25	3.28	3.31	3.33									
		1.68	1.69	1.71	1.72	1.74									
		3.22	3.25	3.28	3.31	3.33									
	1.3 Replacement Value	< $20 M	≥ $20 M - < $40 M	≥ $40 M - < $60 M	≥ $60 M - < $80 M	≥ $ 80 M - < $100 M									
		0.13	0.60	0.76	0.87	0.96									
		0.13	0.63	0.79	0.91	1.00									
		0.08	0.40	0.51	0.58	0.64									
		0.13	0.63	0.79	0.91	1.00									
		0.08	0.40	0.51	0.58	0.64									
		≥ $100 M - < $200 M	≥ $200 M - < $400 M	≥ $400 M - < $600 M	≥ $600 M - < $800 M	≥ $800 M - < $1 B									
		0.99	1.05	1.10	1.14	1.18									
		1.04	1.09	1.14	1.19	1.24									
		0.66	0.70	0.73	0.76	0.79									
		1.04	1.09	1.14	1.19	1.24									
		0.66	0.70	0.73	0.76	0.79									
		≥ $1 B - < $2 B	≥ $2 B - < $4 B	≥ $4 B - < $6 B	≥ $6 B - < $8 B	≥ $8 B									
		1.21	1.22	1.23	1.24	1.25									
		1.26	1.27	1.28	1.29	1.30									
		0.80	0.81	0.82	0.83	0.83									
		1.26	1.27	1.28	1.29	1.30									
		0.80	0.81	0.82	0.83	0.83									

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CONSEQUENCES (continued)

BUILDING CHARACTERISTICS		ATTRIBUTE OPTIONS					CONSEQUENCES RATING FOR GIVEN THREAT SCENARIO								
							Internal			Explosive			CBR		
		a.	b.	c.	d.	e.	Intrusion	Explosive	CBR	Zone I	Zone II	Zone III	Zone I	Zone II	Zone III
1. CONSEQUENCES	1.4 On Historic Registry	No	Yes												
		0.25	2.50												
		0.04	0.43												
		0.08	0.83												
		0.04	0.43												
		0.08	0.83												
	1.5 Business Continuity	Very High	High	Moderate	Low	Very Low									
		0.13	0.92	1.05	1.16	1.25									
		0.09	0.64	0.73	0.81	0.87									
		0.17	1.23	1.41	1.55	1.67									
		0.09	0.64	0.73	0.81	0.87									
		0.17	1.23	1.41	1.55	1.67									
	1.6 Physical Loss Impact	Local	Statewide	Regional	National	International									
		0.19	1.38	1.58	1.74	1.88									
		0.52	3.84	4.40	4.84	5.22									
		0.17	1.23	1.41	1.55	1.67									
		0.52	3.84	4.40	4.84	5.22									
		0.17	1.23	1.41	1.55	1.67									
A.1 TOTAL RATING FOR CONSEQUENCES (C): Sum values in for Consequences and enter in column C on Risk Scoring Worksheet															

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BUILDING CHARACTERISTICS			ATTRIBUTE OPTIONS					THREAT RATING FOR GIVEN THREAT SCENARIO								
								Internal			Explosive			CBR		
			a.	b.	c.	d.	e.	Intrusion	Explosive	CBR	Zone I	Zone II	Zone III	Zone I	Zone II	Zone III
2. THREAT	2.1 Occupancy Use		Occupancy Group I	Occupancy Group II	Occupancy Group III											
			0.14	1.13	1.4											
			0.11	0.89	1.1											
	2.2 # Occupants		< 200	≥ 200 - < 400	≥ 400 - < 600	≥ 600 - < 800	≥ 800 - < 1000									
			0.14	0.68	0.85	0.97	1.07									
			0.11	0.53	0.67	0.77	0.84									
			≥ 1,000 - < 2,000	≥ 2,000 - < 4,000	≥4,000 - < 6,000	≥6,000 - < 8,000	≥ 8,000 - < 10,000									
			1.11	1.17	1.23	1.28	1.33									
			0.87	0.92	0.96	1.00	1.04									
			≥10,000 - < 20,000	≥ 20,000 - < 40,000	≥ 40,000 - < 60,000	≥ 60,000 - < 80,000	≥ 80,000									
			1.35	1.36	1.38	1.39	1.4									
			1.06	1.07	1.08	1.09	1.1									
	2.3 Site Population Density (per sq ft)		Very Low (1/10000)	Low (1/1000)	Moderate (1/400)	High (1/40)	Very High (1/10)									
			0.11	0.81	0.93	1.02	1.1									
			0.30	2.21	2.53	2.78	3.0									
	2.4 Visibility/Symbolic		Very Low	Low	Moderate	High	Very High									
			0.29	2.14	2.45	2.69	2.9									
			0.24	1.77	2.02	2.23	2.4									
	2.5 Target Density	2.5.1 Zone I (< 100 ft)	0	1	2	3	≥ 4									
			0.12	0.88	1.01	1.11	1.2									
		2.5.2 Zone II (≥100 - <300 ft)	0	1-3	4-6	7-9	≥ 10									
			0.30	2.21	2.53	2.78	3.0									
		2.5.3 Zone III (≥300 - ≤1000 ft)	0	1-6	7-12	13-19	≥ 20									
			0.80	5.89	6.75	7.43	8.0									
	2.6 Overall Site Accessibility		Inaccessible	Accessible												
			0.14	1.4												
			0.06	0.6												
	2.7 Target Potential	2.7.1 Facility	No	Yes												
			0.15	1.45												
			0.13	1.25												
			0.20	2												
			0.10	1												
		2.7.2 Facility Type	No	Yes												
			0.15	1.45												
			0.13	1.25												
			0.20	2												
			0.10	1												
T.1 TOTAL THREAT RATING (T): Sum values for each Threat Scenario in column T on Risk Scoring Worksheet																

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VULNERABILITY ASSESSMENT (Part I)

BUILDING CHARACTERISTICS		ATTRIBUTE OPTIONS					VULNERABILITY RATING FOR GIVEN THREAT SCENARIO								
							Internal			Explosive			CBR		
		a.	b.	c.	d.	e.	Intrusion	Explosive	CBR	Zone I	Zone II	Zone III	Zone I	Zone II	Zone III
3. SITE	3.1 Distance to Unsecured Vehicles (ft)	≥ 75	≥ 50 - < 75	≥ 25 - < 50	≥ 5 - < 25	< 5									
		0.06	0.46	0.53	0.58	0.63									
	3.2 Perimeter Boundary	Continuous Anti-Ram Barriers	Effective Anti-Ram Design	Well-Integrated CPTED	Ornamental, Temp, or Anti-Climb Barriers	No Security/ Discon-tinuous									
		0.03	0.22	0.25	0.28	0.30									
		0.01	0.08	0.09	0.10	0.11									
		0.03	0.23	0.26	0.29	0.31									
		0.02	0.15	0.17	0.19	0.2									
	3.3 Unobstructed View (ft)	≥ 30	≥ 20 – < 30	≥ 10 - < 20	≥ 5 - < 10	< 5									
		0.06	0.45	0.51	0.57	0.61									
		0.01	0.08	0.09	0.10	0.11									
		0.02	0.12	0.13	0.15	0.16									
		0.02	0.15	0.17	0.19	0.2									
	3.4 Unsecured Underground Access	None	Utility Tunnel or Culvert to Site	Utility Tunnel to Bldg.	Pedestrian Tunnel to Bldg.										
		0.24	1.77	2.13	2.4										
		0.09	0.63	0.76	0.86										
	3.5 Storage of Hazardous Materials	None	Low	Moderate	High										
		0.06	0.45	0.54	0.61										
		0.04	0.32	0.38	0.43										
		0.02	0.12	0.14	0.16										
		0.01	0.06	0.07	0.08										
	3.6 Collateral Underground / Adjacent Structures	None	Small	Medium	Major	Significant									
		0.10	0.72	0.83	0.91	0.98									
		0.09	0.67	0.77	0.84	0.91									
4. ARCHITECTURE	4.1 Building Height (ft)	< 20 (1 flr)	≥ 20 - < 50 (2-3 flr)	≥ 50- < 100 (4-8 flr)	≥ 100 - <150 (9-12 flr)	≥ 150-< 200 (13-15 flr)									
		0.02	0.10	0.13	0.15	0.16									
		0.01	0.07	0.09	0.11	0.12									
		0.02	0.09	0.12	0.13	0.15									
		0.07	0.41	0.52	0.59	0.65									
		≥ 200 - < 500 (16-40 flr)	≥ 500 - < 800 (41-60 flr)	≥800 -<1000 (61-80 flr)	≥1000 -<1500 (81-120 flr)	≥ 1500 (≥121 flr)									
		0.16	0.17	0.17	0.17	0.176									
		0.12	0.12	0.12	0.13	0.128									
		0.15	0.15	0.15	0.16	0.16									
		0.67	0.68	0.70	0.71	0.72									
	4.2 Ratio of Total Area / Footprint Area	< 10	≥ 10 - < 30	≥ 30 - < 50	≥ 50 - < 100	≥ 100									
		0.00	0.03	0.04	0.04	0.044									
		0.00	0.02	0.03	0.03	0.032									
		0.00	0.03	0.03	0.04	0.04									
		0.02	0.13	0.15	0.17	0.18									
	4.3 Building Configuration	Circular/ Convex	Box	Re-entrant Corners	Concave										
		0.01	0.08	0.10	0.11										
		0.03	0.23	0.28	0.31										
	4.4 Overhang (ft)	None	< 5	≥5 – <10	≥10 – <15	≥ 15									
		0.03	0.23	0.26	0.29	0.31									
		0.02	0.12	0.13	0.15	0.16									
V.1 SUB-TOTAL FOR VULNERABILITY RATING (V): Sum values in each column and enter on line V.1 on Vulnerability Assessment Rating (Part V)															

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VULNERABILITY ASSESSMENT (Part II)

BUILDING CHARACTERISTICS		ATTRIBUTE OPTIONS					VULNERABILITY RATING FOR GIVEN THREAT SCENARIO								
							Internal			Explosive			CBR		
		a.	b.	c.	d.	e.	Intrusion	Explosive	CBR	Zone I	Zone II	Zone III	Zone I	Zone II	Zone III
4. ARCHITECTURE	4.5 Lobby/Retail Location (in relation to main building footprint)	Detached	External & Separated	External but not Separated	Within Footprint	Adjacent to Occupied Areas									
		0.04	0.32	0.36	0.40	0.43									
	4.6 Loading Dock and/or Mail Screening Location	Offsite / None	Exterior to Building	At Perimeter & Separated	Adjacent to Assets	Under Building									
		0.04	0.32	0.36	0.40	0.43									
		0.01	0.06	0.07	0.07	0.08									
	4.7 Vehicular Penetration of Exterior Envelope	No	Yes												
		0.06	0.63												
	4.8 Garage Location	None	Adjacent & Above Ground	Adjacent to Critical Utilities	Adjacent to Occupied Areas										
		0.04	0.32	0.38	0.43										
		0.07	0.52	0.63	0.71										
		0.01	0.06	0.07	0.08										
5. BUILDING ENVELOPE	5.1 Window Support Type	No Windows	Punched	Glass & Metal Framing	Ribbon	Point Supported									
		0.06	0.46	0.53	0.58	0.63									
		0.13	0.96	1.10	1.21	1.3									
	5.2 Window Bite Depth	≥ 0.5 in.	< 0.5 in.												
		0.03	0.31												
		0.07	0.67												
	5.3 Total % Window Area	< 20	≥ 20 - < 40	≥ 40 - < 60	≥ 60 – < 80	≥ 80									
		0.03	0.22	0.25	0.28	0.3									
		0.07	0.49	0.57	0.62	0.67									
		0.13	0.96	1.10	1.21	1.3									
		0.05	0.37	0.42	0.46	0.5									
	5.4 Glass Type	Laminated Glass	Security Film	Tempered Glass	Heat Strength-ened Glass	Annealed Glass									
		0.03	0.23	0.26	0.29	0.31									
		0.06	0.46	0.53	0.58	0.63									
		0.13	0.96	1.10	1.21	1.3									
	5.5 Wall Type	Cast-in-place Reinforced Concrete	Curtain Wall	Precast or Reinforced Masonry	Massive Unreinforced Masonry	Lt. Frame or Slender Unreinforced Masonry									
		0.03	0.23	0.26	0.29	0.31									
		0.07	0.49	0.57	0.62	0.67									
		0.03	0.22	0.25	0.28	0.3									
V.2 SUB-TOTAL FOR VULNERABILITY RATING (V): Sum values in each column and enter on line V.2 on Vulnerability Assessment Rating (Part V)															

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VULNERABILITY ASSESSMENT (Part III)

BUILDING CHARACTERISTICS		ATTRIBUTE OPTIONS					VULNERABILITY RATING FOR GIVEN THREAT SCENARIO								
							Internal			Explosive			CBR		
		a.	b.	c.	d.	e.	Intrusion	Explosive	CBR	Zone I	Zone II	Zone III	Zone I	Zone II	Zone III
5. BLDG. ENV.	5.6 Windborne Debris Impact Protection	Post Benchmark Year	All Other												
		0.02	0.16												
		0.03	0.31												
		0.07	0.67												
6. STRUCTURAL COMPONENTS AND SYSTEMS	6.1 Structural System	Reinf Conc Shear Wall or Bundled Tubes	Braced Exterior Frame	Frame w/ Core or Precast	Tilt-up or Frame w/ infill or Reinf. Masonry or Belt Truss	Lt. Metal Frame or Brick or Timber									
		0.04	0.32	0.36	0.40	0.43									
		0.03	0.23	0.26	0.29	0.31									
		0.07	0.49	0.57	0.62	0.67									
	6.2 Number of Bays in Short Building Direction	≥ 5	≥ 3 - < 5	< 3											
		0.04	0.35	0.43											
		0.03	0.27	0.33											
	6.3 Column Spacing (ft)	< 15	≥ 15 - < 25	≥ 25 - < 40	≥ 40 - < 60	≥ 60									
		0.04	0.32	0.36	0.40	0.43									
		0.03	0.24	0.28	0.31	0.33									
	6.4 Column Height (ft)	< 12	≥ 12 - < 24	≥ 24 - < 36	≥ 36										
		0.04	0.32	0.38	0.43										
		0.03	0.24	0.29	0.33										
	6.5 Publicly Accessible Column	None	Yes, Massive	Yes, Slender											
		0.04	0.35	0.43											
		0.03	0.27	0.33											
	6.6 Transfer Girder Conditions	None	Int. Girder Sup. 1 column	Int. Girder Sup. > 1 column	Ext. Girder Supporting 1 column	Ext. Girder Supporting > 1 column									
		0.09	0.63	0.73	0.80	0.86									
		0.06	0.46	0.53	0.58	0.63									
		0.13	0.96	1.10	1.21	1.3									
		0.07	0.51	0.58	0.64	0.69									
	6.7 Structural Enhancements & Weaknesses	Hardened	Robust	None	Marginal	Sub-standard									
		0.09	0.63	0.73	0.80	0.86									
		0.06	0.46	0.53	0.58	0.63									
		0.10	0.77	0.88	0.97	1.04									
		0.11	0.81	0.93	1.02	1.1									
V.3 SUB-TOTAL FOR VULNERABILITY RATING (V): Sum values in each column and enter on line V.3 on Vulnerability Assessment Rating (Part V)															

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VULNERABILITY ASSESSMENT (Part IV)

BUILDING CHARACTERISTICS		ATTRIBUTE OPTIONS					VULNERABILITY RATING FOR GIVEN THREAT SCENARIO								
							Internal			Explosive			CBR		
		a.	b.	c.	d.	e.	Intrusion	Explosive	CBR	Zone I	Zone II	Zone III	Zone I	Zone II	Zone III
7. MECHANICAL/ELECTRICAL/ PLUMBING SYSTEMS	7.1 Primary External Air Intake Conditions	> 30 ft or Roof	>10 - ≤30 ft	>0 - ≤10 ft	Ground Level	Below Grade									
		0.03	0.24	0.27	0.30	0.32									
		0.37	2.73	3.12	3.43	3.7									
		0.62	4.57	5.23	5.76	6.2									
		0.53	3.91	4.47	4.92	5.3									
	7.2 Return Air Intake System	Ducted Secured	Ducted Accessible	Unducted	Subject to Buoyancy										
		0.12	0.85	1.02	1.15										
		0.15	1.09	1.31	1.48										
		0.30	2.21	2.66	3.00										
	7.3 Internal Air Distribution System	High Risk Separated	Multi-Zoned/ Single System Ducted	Single System/ Unducted											
		0.12	0.93	1.15											
	7.4 Critical Utilities Located Close to High Risk Areas	No	Yes												
		0.04	0.43												
		0.02	0.16												
V.4 SUB-TOTAL FOR VULNERABILITY RATING (V): Sum values in each column and enter on line V.4 on Vulnerability Assessment Rating (Part V)															

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BUILDING CHARACTERISTICS				ATTRIBUTE OPTIONS					VULNERABILITY RATING FOR GIVEN THREAT SCENARIO								
									Internal			Explosive			CBR		
				a.	b.	c.	d.	e.	Intrusion	Explosive	CBR	Zone I	Zone II	Zone III	Zone I	Zone II	Zone III
8. SECURITY	8.1 Internal Threat	8.1.1 Intrusion	8.1.1.1 Number of Detection Systems	≥ 3 Systems	2 Systems	1 System	None										
				0.12	0.90	1.08	1.216										
			8.1.1.2 Overall Security Effectiveness	Highly Effective	Effective	Meets Min. Requirements	Ineffective	No Security									
				0.49	3.58	4.10	4.52	4.864									
		8.1.2 Explosion	8.1.2.1 Number of Detection Systems	≥ 3 Systems	2 Systems	1 System	None										
				0.05	0.39	0.48	0.536										
			8.1.2.2 Overall Security Effectiveness	Highly Effective	Effective	Meets Min. Requirements	Ineffective	No Security									
				0.21	1.58	1.81	1.99	2.144									
		8.1.3 CBR	8.1.3.1 Number of Detection Systems	≥ 3 Systems	2 Systems	1 System	None										
				0.09	0.65	0.78	0.884										
			8.1.3.2 Overall Security Effectiveness	Highly Effective	Effective	Meets Min. Requirements	None	No Security									
				0.35	2.61	2.98	3.28	3.536									
	8.2 Zone 1 Threat	8.2.1 Explosion	8.2.1.1 Number of Detection Systems	≥ 3 Systems	2 Systems	1 System	None										
				0.03	0.22	0.26	0.294										
			8.2.1.2 Overall Security Effectiveness	Highly Effective	Effective	Meets Min. Requirements	Ineffective	No Security									
				0.12	0.87	0.99	1.09	1.176									
		8.2.2 CBR	8.2.2.1 Number of Detection Systems	≥ 3 Systems	2 Systems	1 System	None										
				0.07	0.53	0.64	0.724										
			8.2.2.2 Overall Security Effectiveness	Highly Effective	Effective	Meets Min. Requirements	Ineffective	No Security									
				0.29	2.13	2.44	2.69	2.896									
V.0 SUB-TOTAL FOR VULNERABILITY RATING (V): Sum values in each column and enter here																	
V.1 SUB-TOTAL FOR VULNERABILITY RATING (V): Enter values for each column from line V.1 on Vulnerability Assessment Rating (Part I)																	
V.2 SUB-TOTAL FOR VULNERABILITY RATING (V): Enter values for each column from line V.2 on Vulnerability Assessment Rating (Part II)																	
V.3 SUB-TOTAL FOR VULNERABILITY RATING (V): Enter values for each column from line V.3 on Vulnerability Assessment Rating (Part III)																	
V.4 SUB-TOTAL FOR VULNERABILITY RATING (V): Enter values for each column from line V.4 on Vulnerability Assessment Rating (Part IV)																	
V.5 TOTAL VULNERABILITY RATING (V): Sum values from lines V.0, V.1, V.2, V.3, and V.4 and enter total for each Threat Scenario in column V on Risk Scoring Worksheet																	

FEMA 455 RISK SCORING WORKSHEET

THREAT SCENARIO		Consequences (C)	Threat Rating (T)	Vulnerability Rating (V)	Threat Scenario Risk Rating (C x T x V)
Internal	Intrusion				
	Explosive				
	CBR				
Explosive	Zone I				
	Zone II				
	Zone III				
CBR	Zone I				
	Zone II				
	Zone III				
A. TOTAL RISK RATING FOR BUILDING					