InCAST
User's Manual

Version 2.0

Developed by:
Federal Emergency Management Agency
Washington, D.C.

Through a cooperative agreement with:
National Institute of Building Sciences
Washington, D.C.

FOREWORD

The work that provided the basis for this publication was supported by funding from the Federal Emergency Management Agency (FEMA) under agreements with the National Institute of Building Sciences (NIBS). The substance and findings of that work are dedicated to the public. NIBS is solely responsible for the accuracy of the statements and interpretations contained in this publication. Such interpretations do not necessarily reflect the views of the Federal Government.

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1. Introduction to InCAST

1.1. Welcome to InCAST

InCAST is a software application, developed by FEMA in cooperation with NIBS, to facilitate the collection of building-specific data for HAZUS, FEMA's multihazard loss estimation program.

The InCAST *User's Manual* provides guidance and background information to enable the user to effectively operate InCAST.   The first section explains how to install and uninstall InCAST, and then introduces the main features of this new data collection utility, including a description of screen features, tool bar, and an overview of the system requirements. The first section concludes with information on how the user can obtain technical support in the application of InCAST, or any other component of the HAZUS multihazard loss estimation program.

The second section of the *User's Manual* provides step-by-step instructions on how to use InCAST to collect multihazard data. Appendix A contains a detailed Data Dictionary.

1.2. Installing and Uninstalling InCAST

The InCAST installation wizard makes it simple for the user to install and uninstall the InCAST software application.

Installation of InCAST

To install InCAST, complete the following steps:

1. Close all applications that are currently open.

2. Insert the InCAST CD into the CD ROM drive. (Note: InCAST can also be downloaded from the FEMA website)

3. Click on *Start► Run* on the **Windows** taskbar and type D:\setup.exe, where D corresponds to the CD ROM drive. If you have downloaded the application from the FEMA website, type in the location of file that was downloaded.

4. Click OK.

5. Follow the instruction in the InCAST installation wizard.

Uninstallation of InCAST

To uninstall InCAST, complete the following steps:

1. Close all applications that are currently open.

2. Click on **Start►Settings►Control Panel**

3. Click on the **Add/Remove Programs** option.

4. Select InCAST and Click on Change/Remove button.

5. Follow the instruction in the InCAST uninstall wizard.

1.3. Exploring the InCAST Main Screen

Once the InCAST database file is open, the main screen appears as shown below.
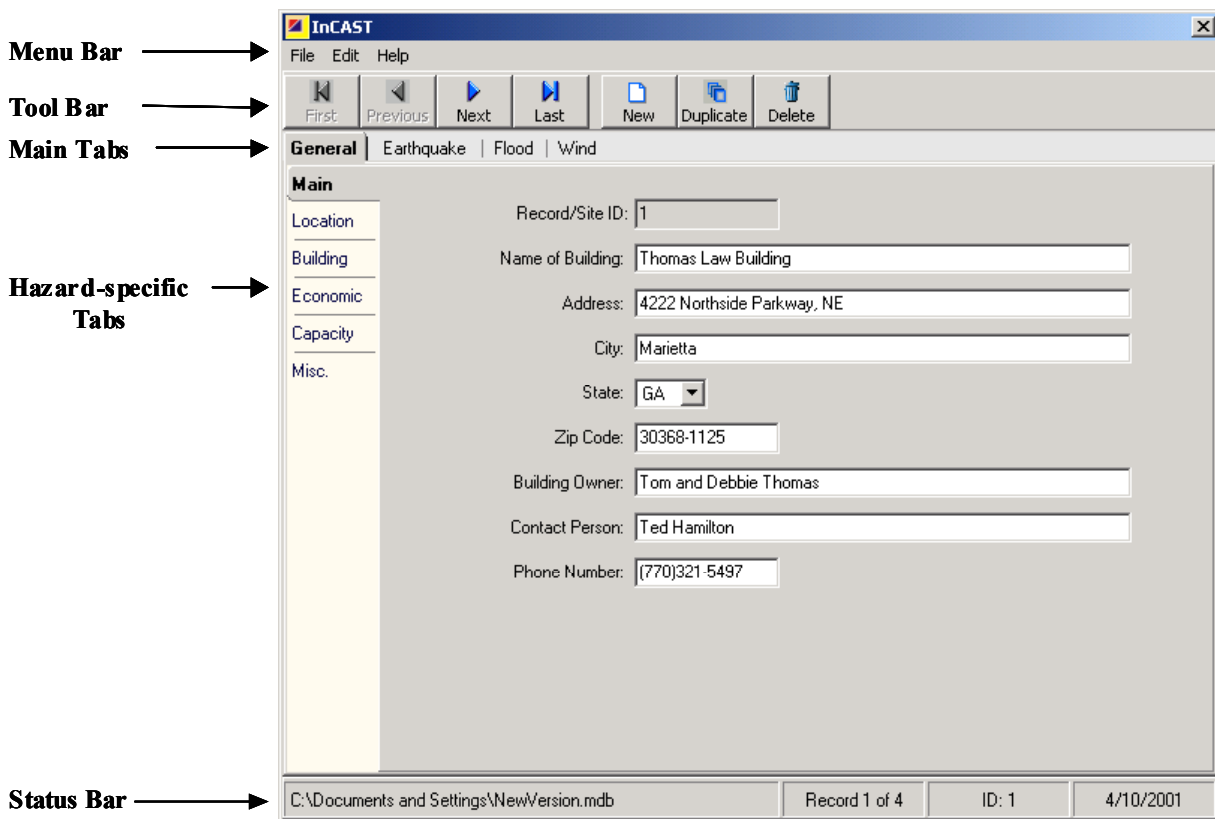
A description of the elements of the main screen is outlined below.

Element	Purpose
Menu Bar	The area containing the menu options.
Tool Bar	A bar that consists of buttons that are shortcuts to menu options and commands.
Main Tabs	The dialog tabs allow the user to change input screens within the same record. They are organized according to hazard and include a general screen for inputting information that is not specific to a hazard.
Hazard-specific Tabs	These tabs allow the user to switch between section while inputting data related to a specific hazard.
Status Bar	This bar provides information on the InCast database. The information in the status bar includes the database name, the current record ID#, the total number of records in the database and the date.

1.4. Exploring the Tool Bar

The tool bar consists of buttons that are shortcuts to many of the menu commands. The following buttons are available with InCAST.

Button	Purpose
	Move to the first record in the database
	Move to the previous record in the database
	Move to the next record in the database.
	Move to the last record in the database.
	Insert new record in the database
	Create a duplicate of an existing record
	Delete an existing record

1.5. System Requirements

In order for InCAST to run properly, your computer system should have the following features:

- Windows 2000 installed
- Pentium class CPU (266 MHz or faster recommended)
- 64 megabytes (MB) of RAM minimum
- 2-GB hard disk with a minimum of 650 MB of free space.
- A color graphics card and monitor (SVGA is recommended)
- A mouse
- A CD-ROM reader

1.6.   Technical Support

Technical support is an important feature of the HAZUS multihazard loss estimation program. Users of InCAST can take advantage of the complementary technical support that is available through FEMA, via telephone, FAX or email.

- The HAZUS technical support representative can be reached by calling the 1-800-955-9422 toll free telephone number. The hours of operation are 9:00 am to 5:00 pm (ET), Monday thru Friday.

- HAZUS related questions and problems can also be faxed to (404) 261-0117. The fax should be sent to the attention of HAZUSHELP.

- The email address for questions and problems is hazushelp@durtech.com

2. Getting Started

This section of the manual instructs the user on how to operate the InCAST program to collect multihazard inventory data.

2.1.   Launching the Program

To start the InCAST application, click **Start** on the Windows taskbar and then click *Programs ► FEMA Risk Assessment System ►InCAST.* Alternatively, click on the InCAST icon on the desktop.

2.2.   Opening an InCAST Database File

Once the InCAST application is started, you will be prompted (through the following dialog screen) to select the database that you will work on during this session.
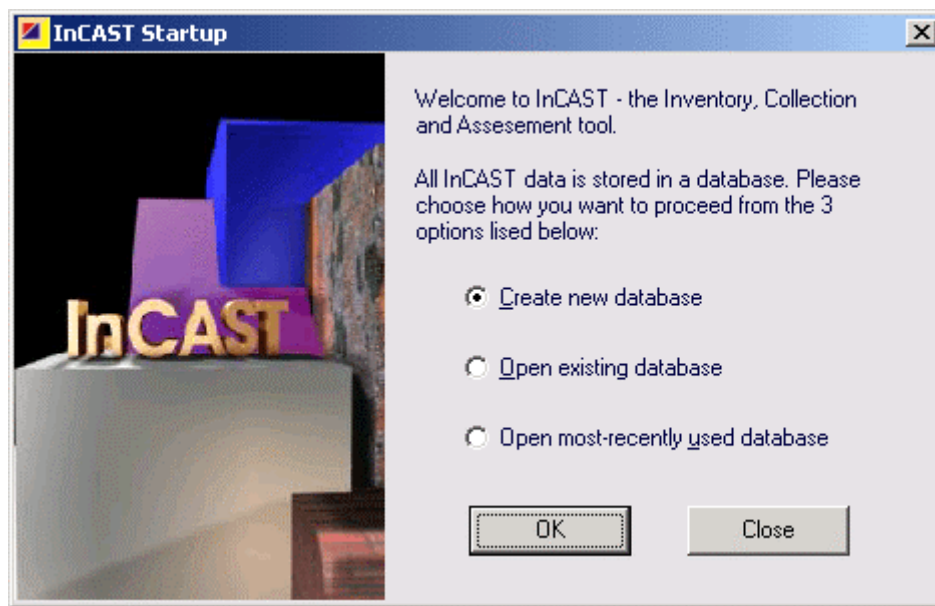
To **create** a new InCAST database, select the corresponding radio button and click on **OK**. Type the filename in the filename box. (Note: If you want to change the location of the database file, specify the drive and folder). Click **Save**. A properly formatted database will be created. Since the new database is empty, the user is prompted with the following dialog.

Database Empty

Database is empty. Select "Edit|Add New Record" or click "New" button to proceed.

OK
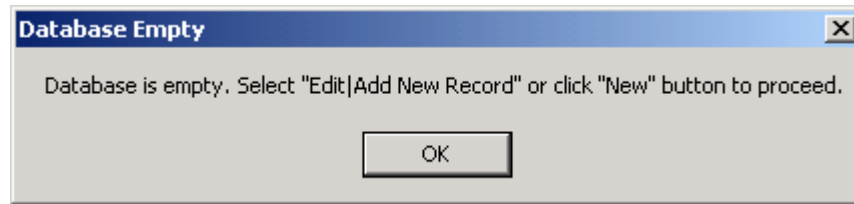
To **open** an existing InCAST database, select the corresponding radio button and click on **OK**. Type the filename in the filename box. (Note: If you want to change the location of the database file, specify the drive and folder). Click **Open**.

To **open** the most recently used InCAST database, select the corresponding radio button and click on **OK**. The last database that you were using will be automatically opened.

2.3.   Adding, Deleting and Duplicating Records

To **add** a blank record to the database, click on *Edit ► Add New Record* or the button. A new record will be appended to the end of the database.

To **delete** an existing record in the database, click on *Edit ► Delete Record* or the button. You will be asked to confirm that you want the record deleted. Click **Yes** and the currently displayed record will be deleted.

To **duplicate** an existing record to the database, click on *Edit ► Duplicate Record* or the button. A copy of the currently displayed record will be appended to the end of the database.

2.4.   Editing a Record

The user can edit the fields in the database by either directly typing the data in the field or using the pull down menu to select from a group of applicable choices. As with database applications (versus spreadsheet applications) the changes are automatically made to the database and the file is updated.

2.5.   Renaming the InCAST Database

To save the InCAST database file with a new file name:

1. Click *File ► Save Database As …*
2. Type the filename in the filename box. (Note: If you want to change the location of the database file, specify the drive and folder).

3. Click *Save.*

2.6.   Closing InCAST

To close the current database, click *File ► Close Database*. This will return you to the startup screen where you can select to work on another database or quit InCAST altogether. To quit and close InCAST, click the Close button.

Appendix A: Data Dictionary

#	Field Description	Field Name	Type	Size	Classification Schemes	Table Name
1	ID Number	hzIncastID	AutoNumber	L. Int.	NA	hzIncast
2	Name of the Building	Name	Text	40	NA	hzIncast
3	Address of the Building	Address	Text	40	NA	hzIncast
4	City	City	Text	40	NA	hzIncast
5	State	State	Text	2	NA	hzIncast
6	ZIPCODE (+4)	Zipcode	Text	10	NA	hzIncast
7	Owner's Name	Owner	Text	40	NA	hzIncast
8	Contact Person's Name	Contact	Text	40	NA	hzIncast
9	Phone Number	Phone	Text	14	NA	hzIncast
10	Latitude (decimal degrees)	Latitude	Number	Double	NA	hzIncast
11	Longitude (decimal degrees)	Longitude	Number	Double	NA	hzIncast
12	Census Block Number	CensusBlock	Text	15	NA	hzIncast
13	Census Block Group Number	CensusGroup	Text	12	NA	hzIncast
14	Census Tract Number	CensusTract	Text	11	NA	hzIncast
15	County FIP Code	CountyFIPS	Text	5	NA	hzIncast

Appendix A: Data Dictionary (continued)

#	Field Description	Field Name	Type	Size	Classification Schemes	Table Name
16	Occupancy Class	Occupancy	Text	5	AGR1 = Agriculture Facilities and Offices COM1 = Retail Trade COM2 = Wholesale Trade COM3 = Personal and Repair Services COM4 = Professional/Technical Services COM5 – Banks COM6 – Hospital COM7 = Medical Office and Clinic COM8 = Entertainment & Recreation COM9 = Theaters COM10 = Parking Garages EDU1 = Grade Schools and Admin. Offices EDU2 = Colleges and Universities GOV1 = Government - General Services GOV2 = Government - Emergency Response IND1 – Heavy Industrial IND2 = Light Industrial IND3 = Food/Drugs/Chemicals IND4 = Metals/Minerals Processing IND5 = High Technology IND6 = Construction Facilities and Offices REL1 = Churches and Non-Profit Organizations RES1 = Single Family Dwellings RES2 = Manufactured Housing RES3A = Duplex RES3B = 3 to 4 Units RES3C = 5 to 9 Units RES3D = 10 to 19 Units RES3E = 20 to 49 Units RES3F = > 50 Units RES4 = Temporary Lodging RES5 = Institutional Dormitories RES6 = Nursing Homes UNK = Unknown	hzIncast

Appendix A: Data Dictionary (continued)

#	Field Description	Field Name	Type	Size	Classification Schemes	Table Name
17	Building Structural Type	BldgType	Text	4	C1 = Concrete Moment Frame C2 = Concrete Shear Walls C3 = Concrete Frame with Unreinforced Masonry Infill Walls MH = Manufactured Housings O = Other Building Type P1 = Precast Concrete Tilt-Up Walls P2 = Precast Concrete Frames with Cast-in-Place Concrete Shear Walls RM1 = Reinforced Masonry Bearing Walls with Wood or Metal Deck Diaphragms RM2 = Reinforced Masonry Bearing Walls with Precast Concrete Diaphragms S1 = Steel Moment Frame S2 = Steel Braced Frame S3 = Steel Light Frame S4 = Steel Frame with Cast-in-Place Concrete Shear Walls S5 = Steel Frame with Unreinforced Masonry Infill Walls URM = Unreinforced Masonry Bearing Walls UNK = Unknown Building Type W1 = Wood, Light Frame W2 = Wood, Commercial and Industrial	hzlncast
18	Total Building Area (sq.ft)	Area	Number	L. Int.	NA	hzlncast
19	Year of Construction	YearConstruction	Number	Integer	NA	hzlncast
20	Number of Stories	NumStories	Number	Integer	NA	hzlncast
21	Building Replacement Value ($)	BldgValue	Number	L. Int.		hzlncast
22	Building Valuation Type	ValuationType	Text	30		hzlncast
23	Valuation Year	ValuationYear	Number	Integer		hzlncast
24	Contents Replacement Value ($)	ContentsValue	Number	L. Int.		hzlncast

Appendix A: Data Dictionary (continued)

#	Field Description	Field Name	Type	Size	Classification Schemes	Table Name
25	Rental Income ($/month)	RentalIncome	Number	L. Int.		hzIncast
26	Inventory Replacement Value ($)	InvValue	Number	L. Int.		hzIncast
27	Business Income ($/day)	Production	Number	L. Int.		hzIncast
28	Wages Paid ($/day)	Wages	Numbers	L. Int.		hzIncast
29	Daytime Occupants (# of people)	DaytimeOccup	Numbers	L. Int.		hzIncast
30	Nighttime Occupants (# of people)	NighttimeOccup	Numbers	L. Int.		hzIncast
31	Kitchen Facilities [Y/N]	Kitchen	Text	11	0 = Unknown 1 = Yes 2 = No	hzIncast
32	Kitchen Capacity (meals/day)	KitchenCapacity	Numbers	Integer		hzIncast
33	Dining Facilities [Y/N]	Dining	Text	11	0 = Unknown 1 = Yes 2 = No	hzIncast
34	Dining Capacity (# of seats)	DiningCapacity	Numbers	Integer		hzIncast
35	Sleeping Facilities [Y/N]	Sleeping	Text	11	0 = Unknown 1 = Yes 2 = No	hzIncast
36	Sleeping Capacity (# of beds)	SleepingCapacity	Numbers	Integer		hzIncast
37	Number of Hospital Beds	NumHospBeds	Numbers	Integer		hzIncast
38	Number of Vehicles Housed On-Site	NumVehicles	Numbers	Integer		hzIncast
39	Hazardous Materials Stored On-Site [Y/N]	Hazmat	Text	11	0 = Unknown 1 = Yes 2 = No	hzIncast
40	Comments #1	Comment1	Text	200		hzIncast
41	Comments #2	Comment2	Text	200		hzIncast
42	Photo #1	Photo1	OLE Object			hzIncast
43	Photo #2	Photo2	OLE Object			hzIncast
44	Photo #3	Photo3	OLE Object			hzIncast

Appendix A: Data Dictionary (continued)

#	Field Description	Field Name	Type	Size	Classification Schemes	Table Name
45	Soil Type	SoilType	Text	75	0 = Unknown 1 = Class A: Hard Rock 2 = Class B : Firm to Hard Rock 3 = Class C: Gravelly Soil and Soft Rock 4 = Class D: Stiff Clays and Sandy Soils 5 = Class E: Soft Soils	EqIncast
46	Landslide Susceptibility	LandslideSusc	Text	20	0 = Unknown 1 = Category I 2 = Category II 3 = Category III 4 = Category IV 5 = Category V 6 = Category VI 7 = Category VII 8 = Category VIII 9 = Category IX 90 = Category X 91 = None	EqIncast
47	Liquefaction Susceptibility	LiquefactionSusc	Text	15	0 = Unknown 1 = None 2 = Very Low 3 = Low 4 = Moderate 5 = High 6 = Very High	EqIncast
48	Ground Water Depth (ft)	WaterDepth	Number	Integer	Range: 0 – 1000 ft.	EqIncast
49	Earthquake Design Code	EqDesignCode	Text	15	0 = Unknown 1 = UBC 2 = SBC 3 = BOCA 4 = ASCE-7 5 = IBC 6 = IRC 7 = None 99 = Other	EqIncast
50	Seismic Design Level	SeismicDesignLevel	Text	45	1 = High Seismic Design 2 = Moderate Seismic Design 3 = Low Seismic Design 4 = Pre-Seismic Code (without Seismic Design) 5 = Unknown	EqIncast

Appendix A: Data Dictionary (continued)

#	Field Description	Field Name	Type	Size	Classification Schemes	Table Name
51	Earthquake Design Year	DesignYear	Number	Integer	Range: 1900-2050	EqIncast
52	Earthquake Design Base Shear (g's)	BaseShear	Number	Single	Range: 0-4.99	EqIncast
53	Foundation Type - Earthquake	FoundationType	Text	30	0 = Unknown 1 = Slab 2 = Perimeter (shallow) 3 = Combined footing 4 = Single column footing 5 = Pile 6 = Drilled pier 7 = Elevated pier 8 = Caisson 9 = None	EqIncast
54	Construction Quality - EQ	Quality	Text	30	0 = Unknown 1 = Superior to Code 2 = Code Compliant 3 = Inferior to Code	EqIncast
55	Percentage of Contents Value on First Floor (%)	ContentsPct	Number	BYTE	Range: 0 to 100%	EqIncast
56	Horizontal Shape Configuration	HorizShape	Text	15	0= Unknown 1 = Regular 2 = Irregular	EqIncast
57	Vertical Shape Configuration	VertShape	Text	15	0= Unknown 1 = Regular 2 = Irregular	EqIncast
58	Torsion	Torsion	Text	11	0 = Unknown 1 = Yes 2 = No	EqIncast
59	Soft Story	SoftStory	Text	11	0 = Unknown 1 = Yes 2 = No	EqIncast
60	Short Columns	ShortColumns	Text	11	0 = Unknown 1 = Yes 2 = No	EqIncast
61	Pounding	Pounding	Text	11	0 = Unknown 1 = Yes 2 = No	EqIncast

Appendix A: Data Dictionary (continued)

#	Field Description	Field Name	Type	Size	Classification Schemes	Table Name
62	URM Retrofit	URMRetrofit	Text	11	0 = Unknown 1 = Yes 2 = No	EqIncast
63	Ornamentation	Ornamentation	Text	15	0 = Unknown 1 = Extensive 2 = Average 3 = Minimal 4 = None	EqIncast
64	Cripple Wall Bracing	CWBracingType	Text	12	0 = Unknown 1 = Braced 2 = Unbraced 3 = NA	EqIncast
65	Chimney Anchored	ChimneyAnchored	Text	12	0 = Unknown 1 = Braced 2 = Unbraced 3 = NA	EqIncast
66	Plumbing Bracing	BracingPlumbing	Text	12	0 = Unknown 1 = Yes 2 = No	EqIncast
67	Mechanical Bracing	BracingMech	Text	12	0 = Unknown 1 = Yes 2 = No	EqIncast
68	Electrical Bracing	BracingElect	Text	12	0 = Unknown 1 = Yes 2 = No	EqIncast
69	Ceiling Bracing	BracingCeiling	Text	12	0 = Unknown 1 = Yes 2 = No	EqIncast
70	Mechanical on Roof	MechanOnRoof	Text	12	0 = Unknown 1 = Braced 2 = Unbraced 3 = NA	EqIncast
71	Bracing of Roof Tanks	RoofTanks	Text	12	0 = Unknown 1 = Braced 2 = Unbraced 3 = NA	EqIncast
72	FIRM Panel Number	FirmPanel	Text	13		flIncast

Appendix A: Data Dictionary (continued)

#	Field Description	Field Name	Type	Size	Classification Schemes	Table Name
73	FIRM Community	FirmCommunity	Text	150		flIncast
74	FIRM Effective Date	FirmEffectiveDate	Date/Time	S. D.	mm/dd/yyyy	flIncast
75	FIRM Revised Data	FirmRevisedDate	Date/Time	S. D.	mm/dd/yyyy	flIncast
76	Flood Hazard Zone	HazardZone	Text	15	1 = A1 - A30 2 = AE 3 = AH 4 = A (with BFE) 5 = A (without BFE) 6 = AO 7 = AR 8 = AR/A 9 = AR/AE 90 = AR/A1 – A30 91 = AR/AH 92 = AR/AO 93 = VE 94 = V1 - V30 95 = V (with BFE) 96 = B 97 = C 98 = D 99 = X (shaded) 991 = X (un-shaded) 992 = X500 999 = Unknown	flIncast
77	Base Flood Elevation (ft)	Bfe	Number	Single		flIncast
78	Vertical Datum for Flood Elevation	VertDatum	Text	25	0 = Unknown 1 = NGVD (or MSL NGVD) 2 = NAVD (or MSL NAVD) 99 = Other	flIncast
79	Other Vertical Datum Definition	OtherVertDatum	Text	15		flIncast
80	Higher Community Elevation Standard (BFE+) (feet)	BfePlus	Number	Single		flIncast
81	Lowest Adjacent Grade Elevation (feet)	GradeElev	Number	Single		flIncast

Appendix A: Data Dictionary (continued)

#	Field Description	Field Name	Type	Size	Classification Schemes	Table Name
82	Post-FIRM	PostFirm	Text	11	0 = Unknown 1 = Yes 2 = No	flIncast
83	Construction Class – Flood (RES1 only)	ConstrClass	Text	11	0 = Unknown 1 = Economy 2 = Average 3 = Luxury 4 = Custom	flIncast
84	Building Condition	BldgCondition	Text	15	0 = Unknown 1 = Excellent 2 = Good 3 = Fair 4 = Poor	flIncast
85	Substructure Type	SubStruct	Text	25	0 = Unknown 1 = Slab 2 = Fill 3 = Crawlspace 4 = Basement 5 = Garden Level 6 = Pier (Post or Beam) 7 = Solid Wall 8 = Pile (or Column) 9 = None	flIncast
86	Elevation of Lowest Floor above Datum (feet) (Including basement, excluding areas that are used solely for building access, storage and/or parking)	LowFloorElev	Number	Single	NA	flIncast
87	Top / Bottom of Floor	TopBottomFlr	Text	65		flIncast
88	Lowest Floor below grade on all sides [Y/N]	FloorBelowGrade	Text	11	0 = Unknown 1 = Yes 2 = No	flIncast
89	Mechanical Equipment Height Relative to Lowest Floor (feet)	MechHeight	Number	Single	NA	flIncast
90	Number of Basement Levels (Multi-family and Non-residential only)	NumBasementLvls	Number	BYTE	NA	flIncast
91	Percentage of Contents Value in Basement (%)	PctContentVal	Number	BYTE	NA	flIncast
92	Percentage of Finished Basement (%)	PctBasement	Number	BYTE	NA	flIncast

Appendix A: Data Dictionary (continued)

#	Field Description	Field Name	Type	Size	Classification Schemes	Table Name
93	Basement Dry Flood Proofed [Y/N]	DryFlood	Text	11	0 = Unknown 1 = Yes 2 = No	flIncast
94	Basement Flood Proofing: Elevation above Datum (feet)	BasementElev	Number	Single	NA	flIncast
95	Enclosure Type	Enclose	Text	45	0 = Unknown 1 = Solid Wall with Opening (<300 sq ft) 2 = Solid Wall with Opening (>300 sq ft) 3 = Solid Wall without Opening (<300 sq ft) 4 = Solid Wall without Opening (>300 sq ft) 5 = Breakaway Walls 6 = Lattice / Screening 7 = None	flIncast
96	Wind Exposure Class: Effective z0 (m)	WindExposure	Text	25	0 = Unknown 1 = Ocean Front 2 = Open Land 3 = Forested 4 = Suburban 5 = Urban 6 = Major City Center	huIncast
97	Topography	Topography	Text	15	0 = Unknown 1 = Flat 2 = Valley 3 = Ridge 4 = Slope	huIncast
98	Wind Shielding	WindShielding	Text	15	0 = Unknown 1 = None 2 = One Side 3 = Two Sides 4 = Three Sides 5 = Surrounded	huIncast

Appendix A: Data Dictionary (continued)

#	Field Description	Field Name	Type	Size	Classification Schemes	Table Name
99	Shielding Height	ShieldingHeight	Text	45	0 = Unknown 1 = Taller Buildings 2 = Similar Buildings 3 = Shorter Buildings 4 = Taller Trees 5 = Tree Height Similar to Building Height 6 = Shorter Trees 7 = None 99 = Other	huIncast
100	Windborne Debris Source	WindDebrisSource	Text	30	0 = Unknown 1 = Roof Shingles 2 = Roof Tiles 3 = Roof Gravel 4 = Sheds 5 = Fencing 6 = Appurtenant Structures 7 = Architectural Features 8 = None	huIncast
101	Design Wind Speed (mph)	WindSpeed	Number	Integer	NA	huIncast
102	Design Wind Speed Type	WindSpeedType	Text	15	0 = Unknown 1 = Fastest Mile 2 = Peak Gust	huIncast
103	Wind Design Code	WindDesignCode	Text	15	0 = Unknown 1 = UBC 2 = SBC 3 = BOCA 4 = ASCE-7 5 = SFBC 6 = None 99 = Other	huIncast
104	Wind Design Year	WindDesignYear	Number	Integer.	Range: 1900 to 2050	huIncast

Appendix A: Data Dictionary (continued)

#	Field Description	Field Name	Type	Size	Classification Schemes	Table Name
105	Roof Slope (degrees)	RoofSlope	Text	25	0 = Unknown 1 = Less than 10 degrees 2 = 11 to 20 degrees 3 = 21 to 30 degrees 4 = 31 to 45 degrees 5 = 46 to 60 degrees 6 = Greater than 60 degrees	huIncast
106	Roof Covering	RoofCovering	Text	45	0 = Unknown 1 = Asphalt Shingle 2 = Wood Shingle 3 = Wood Shake 4 = Barrel Clay Tile 5 = Flat Tile 6 = Concrete Flat Tile 7 = Slate 8 = Metal Shingle 9 = Metal Panel 10 = Built-up w/ Gravel 11 = Built-up w/o Gravel 12 = Modified Bitumen 13 = Single Ply Membrane - Mechanically Attached 14 = Single Ply Membrane - Adhered 15 = Single Ply Membrane - Gravel ballast 16 = Single Ply Membrane - Paver ballast 99 = Other	huIncast
107	Roof Shape	RoofShape	Text	15	0 = Unknown 1 = Gable 2 = Hip 3 = Flat 4 = Gambrel 5 = Mansard 6 = Dutch-Hip 7 = Shed 8 = Mono-slope 9 = Multi-level 90 = Barn 99 = Other	huIncast

Appendix A: Data Dictionary (continued)

#	Field Description	Field Name	Type	Size	Classification Schemes	Table Name
108	Gable Ends Braced	GableBracing	Text	15	0 = Unknown 1 = Braced 2 = Unbraced 3 = NA	hulncast
109	Roof Sheathing	RoofSheathing	Text	30	0 = Unknown 1 = Plywood 2 = Oriented strand board (OSB) 3 = Plank 4 = Metal Deck 5 = Concrete Slab 6 = Batten Deck 99 = Other	hulncast
110	Roof Sheathing Attachment Nail Size	NailSize	Text	15	0 = Unknown 1 = 6d 2 = 8d 3 = 10d 99 = Other	hulncast
111	Roof Nail Spacing (Edge-Field)	NailSpacing	Text	15	0 = Unknown 1 = 6"x12" 2 = 6"x6" 99 = Other	hulncast
112	Metal Deck Attachment	DeckAttach	Text	12	0 = Unknown 1 = Weld 2 = Screw 3 = NA 99 = Other	hulncast
113	Frame Spacing (in)	FrameSpacing	Text	15	0 = Unknown 1 = 12 inches 2 = 16 inches 3 = 19.6 inches 4 = 24 inches 5 = 36 inches 6 = NA 99 = Other	hulncast

Appendix A: Data Dictionary (continued)

#	Field Description	Field Name	Type	Size	Classification Schemes	Table Name
114	Roof-Wall Anchorage	WallAnchorage	Text	15	0 = Unknown 1 = Toe nail 2 = Anchor bolt 3 = Strap 4 = Weld 5 = None 99 = Other	hulncast
115	Roof Perimeter Architecture	RoofPerimeter	Text	30	0 = Unknown 1 = Roof overhang < 2 Feet 2 = Roof overhang > 2 feet 3 = Braced parapet 4 = Unbraced parapet 5 = Overhang & braced parapet 6 = Overhang & unbraced parapet 7 = None 99 = Other	hulncast
116	Wall Cladding Type	Cladding	Text	45	0 = Unknown 1 = Reinforced Masonry or Reinforced Concrete 2 = Unreinforced Masonry 3 = Brick Veneer 4 = Composite Materials Siding 5 = Vinyl 6 = Metal Panel 7 = Wood 8 = Stucco 9 = EIFS 90 = Glass 99 = Other	hulncast
117	Maximum Wall Surface Area Exposure (sq ft.)	WallExposure	Number	L. Int.		hulncast
118	Glass Door and Window Opening (%)	Openings	Text	15	0 = Unknown 1 = 0 to 10% 2 = 11 to 20% 3 = 21 to 30% 4 = 31 to 40% 5 = 41 to 50% 6 = 51 to 60% 7 = > 60%	hulncast

Appendix A: Data Dictionary (continued)

#	Field Description	Field Name	Type	Size	Classification Schemes	Table Name
119	Glass Type	Glass	Text	30	0 = Unknown 1 = Annealed 2 = Heat-Strengthened 3 = Tempered 4 = NA 99 = Other	hulncast
120	Glass Pane Construction	GlassConstr	Text	15	0 = Unknown 1 = Single Pane 2 = Insulated 3 = Laminated 4 = NA 99 = Other	hulncast
121	Glass Door and Window Shutter Type	ShutterType	Text	15	0 = Unknown 1 = Wood 2 = Metal 3 = Plywood 4 = NA 99 = Other	hulncast
122	Shutter Code	ShutterCde	Text	30	0 = Unknown 1 = SFBC 2 = SBC 3 = ASTM E1996 4 = Not Code Compliant 99 = Other	hulncast
123	Other Door Area (%) (excludes glass doors)	OtherDoorArea	Text	15	0 = Unknown 1 = 0 to 10% 2 = 11 to 20% 3 = 21 to 30% 4 = > 30%	hulncast
124	Garage Doors (# of doors)	GarageDoors	Text	15	0 = Unknown 1 = None 2 = 1 Door 3 = 2 Doors 4 = 3 Doors 5 = 4 Doors 6 = 5 Doors 7 = >5 Doors	hulncast

Appendix A: Data Dictionary (continued)

#	Field Description	Field Name	Type	Size	Classification Schemes	Table Name
125	Roll-Up Doors (# of doors)	RollUpDoors	Text	15	0 = Unknown 1 = None 2 = 1 Door 3 = 2 Doors 4 = 3 Doors 5 = 4 Doors 6 = 5 Doors 7 = >5 Doors	hulncast
126	Door Protection	DoorProtection	Text	12	0 = Unknown 1 = Wood 2 = Metal 3 = Plywood 4 = None 99 = Other	hulncast
127	Door Protection Compliance	Protection	Text	25	0 = Unknown 1 = SFBC 2 = SBC 3 = ASTM E1996 4 = Not Code Compliant 99 = Other	hulncast
128	Manufactured Housing - HUD Code Compliance	MHCode	Text	30	0 = Unknown 1 = Pre-HUD 2 = HUD compliant 3 = Post 1994 HUD compliant 4 = Not Compliant	hulncast
129	Manufactured Housing - HUD Wind Zone Used	MHCode	Text	15	0 = Unknown 1 = Zone I 2 = Zone II 3 = Zone III 4 = NA	hulncast
130	Manufactured Housing - Tie Downs [Y/N]	MHTieDowns	Text	11	0 = Unknown 1 = Yes 2 = No	hulncast