State of Washington
Public Building Mapping Minimum Software Standards
Published by WASPC
As Required by Chapter 36.28A.070 RCW

Purpose of the Standards

RCW 36.28A 070, passed by the legislature in 2003, signed by the Governor, and effective July 27, 2003 requires the Washington Association of Sheriffs and Police Chiefs (WASPC) to develop "building mapping software standards". WASPC operates the Critical Incident Planning and Mapping System (CIPMS) in accordance with these minimum standards. By law, the standards are to include "the type of information to be included in the statewide first responder building mapping information system. The information shall include, but is not limited to: Floor plans, fire protection information, evacuation plans, utility information, known hazards, and text and digital images showing emergency personnel contact information;"

Further, WASPC is required to

- *Determine the order in which buildings shall be mapped when funding is received;*
- *Develop guidelines on how the information shall be made available. These guidelines shall include detailed procedures and security systems to ensure that the information is only made available to the government entity that either owns the building or is responding to an incident at the building;*
- *Recommend training guidelines regarding using the statewide first responder building mapping information system to the criminal justice training commission and the Washington state patrol fire protection bureau.*

To meet the specific requirements of the law, WASPC's Project Manager chaired a committee to develop these standards. This committee included the following agencies:

- Washington State Emergency Management Office
- Washington Association of County Officials
- Washington Association of Cities
- Washington Information Services Board
- Washington State Fire Chiefs Association
- Washington State Patrol
- Association of Washington School Principals

This document, posted on WASPC's web site, www.waspc.org, under Critical Incident Planning, represents the statutorily required standards developed by WASPC in consultation with the committee. The standards are intended to ensure security, clear communication, and effective response to critical incidents. Vendors providing services to WASPC and agencies accepting full funding for critical incident planning and mapping systems are required to meet these standards.

For further information, please contact:

Joe Hawe, Manager
Critical Incident Planning and Mapping System
Washington Association of Sheriffs and Police Chiefs
3060 Willamette Drive NE Suite 200
Lacey, WA 98516
Telephone: (360) 486-2414
Cell phone: (360) 561-5051
Fax: (360) 486-2381
jhawe@waspc.org

Bruce Kuennen, Public Facilities Mapping Coordinator
Washington Association of Sheriffs and Police Chiefs
3060 Willamette Drive NE Suite 200
Lacey, WA 98516
Telephone: (360) 486-2389
Cell phone: (360) 561-0807
Fax: (360) 486-2381
bkuennen@waspc.org

FUNCTIONAL REQUIREMENTS

Functional Requirements				
	R/D = Required functionality; Desired functionality			
ID	**Requirement**	**R/D**		**Comments**
GENERAL				
G1	System maintenance and administration performed by WASPC Sys Admin	R		
G2	System content (data and information) updatable by WASPC Sys Admin	R		
G3	Ability for WASPC Sys Admin to designate roles and responsibilities for other administrators and users.	R		
G4	Ability to incorporate pre-plans into system, e.g., copies of existing documents.	R		
G5	Ability to create or incorporate pre-plan templates.	D		
G6	Three levels of data and information: **site** associated with buildings, **buildings** associated with **floors** - one to many relationships	R		
G7	Ability to identify (flag) via text and/or graphically (on maps) any extraordinary situation or characteristic that first responders need to be immediately aware of.	R		*Ability to flag extraordinary situations at any level, rolled up to the site level.*
G8	Authentication for access to system with differing levels of user access based on need to know, roles and responsibilities, and user organization.	R		
G9	Access based on usernames and passwords.	R		

Functional Requirements				
	R/D = Required functionality; Desired functionality			
ID	**Requirement**	**R/D**		**Comments**
G10	System access controlled by WASPC Sys Admin and local user access controlled by local site administrators.	R		
G11	Use of Secure Socket Layer (SSL) protocol with minimum 128bit encryption for data transfer. Encryption method shall be FIPS compliant.	R		
G12	Data and information will be housed at the WASPC offices or WASPC designated location.	R		
Data Currency and Updates – Client				
G13	Ability for clients to enter and update system data and information directly through the program.	D		
G14	Ability for clients to send data and information to WASPC for entry into the system.	D		*File compression desired*
G15	Edit rules applied to data entry fields to ensure proper syntax, ranges, etc.	R		
G16	Clients notified when data updates are available for downloading.	R		
G17	Periodic reminder for users to check for updates.	D		
G18	Identifier for data update version	R		
G19	Local site administrator responsible for updating all client computers;	R		
G20	WASPC Sys Admin notified when data updates have been downloaded by a local site administrator.	R		

Functional Requirements				
	R/D = Required functionality; Desired functionality			
ID	**Requirement**	**R/D**		**Comments**
Data Currency and Updates – System				
G21	Validation by WASPC Sys Admin required before data added to operational database.	R		*File compression desired*
G22	Edit rules applied to data to ensure proper syntax, ranges, etc.	R		
G23	WASPC Sys Admin responsible for updating data and information on System.	R		
Data Currency and Updates – Update Modes-Data				
G24	Primary method of sending data updates to and from the System will be through the Internet	R		
G25	Use of SSL protocol with minimum 128 bit encryption for data transfer.	R		
G26	Capability for alternative update distribution methods include CD, memory stick, etc. (Data encryption required to protect data);	R		
G27	Update activity logged for audit trail.	R		
Software Program (Application) Updates - Client				
G28	Prompt user when client application (program) updates are available;	R		
G29	Identifier of application update version.	R		
G30	Local user initiates application updates and local administrator responsible for updating applications on all client computers.	R		

Functional Requirements				
	R/D = Required functionality; Desired functionality			
ID	**Requirement**	**R/D**		**Comments**
Software Program (Application) Updates – Update Modes				
G31	Primary method of updating the software application will be through the Internet (Use of SSL protocol with minimum 128 bit encryption for data transfer);	R		*File compression desired*
G32	Alternative methods include update distribution by CD, memory stick, etc. (Application updates to be encrypted to protect application).	R		
G33	Application update activity logged for audit trail.	R		
Software Requirements				
G34	Server Operating System- Windows Server 2003 or higher;	R		
G35	Server Database Software- Windows SQL Server 2000 or higher	R		
G36	Client - Windows XP or higher;	R		
G37	Client - Windows Internet Explorer 6.0 or higher	R		
Hardware Requirements				
G38	This standard number purposely skipped.	-		
G39	System must operate on Notebook, Laptop or Desktop computer capable to operate at least Windows XP, w/ hard drive, CD drive, USB port, and internet connectivity	R		

Functional Requirements				
	R/D = Required functionality; Desired functionality			
ID	**Requirement**	**R/D**		**Comments**
Reporting / Printing / Archiving				
G40	WASPC defined reports including update logs, local site administrators listing, access logs, archive logs, data currency report, etc.	R		
G41	Ability to print data from the system for use by first responders, inc floor plans; HazMat listings by site, building, & floor; site and building maps; established local preplans; query results; etc.	R		
G42	System to support scheduled automatic archival of system data.	R		
G43	System to support manual archival of post incident data-incident specific, including capturing any on-site changes to tactical maps.	R		
Data Export / Import				
G44	System must have ability to export all or selected data and information using a single xml standard or non-proprietary vendor identified export schema.	R		
G45	System must have ability to import data and information, including legacy data, using a single xml standard or vendor identified import schema.	R		

Functional Requirements				
	R/D = Required functionality; Desired functionality			
ID	**Requirement**	**R/D**		**Comments**
G46	System must have ability to upload/import data in bulk from various data sources, e.g., critical infrastructure information from Dept of Emergency Management.	R		
Query Capability				
G47	Ability for users to query database for data such as site or building name, address, parcel number, etc.	R		
SITE				
S1	Identification of hazardous materials on site by type, quantity, tier, and location.	R		
S2	Associate HazMat to USDOT ERG.	R		
S3	Ability to add links to other HazMat sources.	D		
S4	Ability to identify (flag) via text and graphically (on maps) any extraordinary situation or characteristic that first responders would need to be immediately aware of.	R		
S5	Ability to incorporate multiple images of the site with directional orientation identified.	R		
S6	Emergency Response Jurisdictions – Entity name, emergency contact phone, non-emergency contact phone – Ability to incorporate multiple contacts.	R		
S7	Link via wireless to weather	D		

Functional Requirements				
	R/D = Required functionality; Desired functionality			
ID	**Requirement**	**R/D**		**Comments**
	info.			
S8	Site Contact Information Title/Position, Name, Phone Numbers, photo – Ability to incorporate multiple contacts	R		
Site Address				
S9	County Name – ability to enter and display more than one county per site.	R		
S10	Site or Complex Name – formal name and alias(es).	R		
S11	Site Address – Input data validated by USPS.	R		
S12	Site City – Input data validated by USPS.	R		
S13	Site State – Input data validated by USPS.	R		
S14	Site Zip + 4 – Input data validated by USPS.	R		
S15	GPS coordinates to site location - lat long in decimal degrees with precision to 5 decimal places – indicator as to the reference point on the site for the coordinates.	R		
S16	Ability to filter and query by county, site, site address, etc. (soundexing, text searching)	R		
Icons				
S17	Use and display of standard NIMS (Homeland Security) Icons or Icons approved by WASPC	R		*Homeland Security Working Group Symbology URL = http://www.fgdc.gov/HSWG/index.html*
S18	Icons must be consistent across various site maps/diagrams/graphical	R		

Functional Requirements				
	R/D = Required functionality; Desired functionality			
ID	**Requirement**	**R/D**		**Comments**
	displays.			
S19	Ability to update self-generated icons on a system wide basis, to be accomplished by WASPC Sys Admin.	R		
Graphical Displays – Vicinity Information				
S20	Street information with minimum quality of Microsoft Streets, e.g., ability to see block level detail.	R		*Map Source: County, City, or Tribal GIS-based Road Maps (primary) or Public Domain Acquisition (secondary); no copyright implications*
S21	Ability to incorporate other maps/graphical displays from municipality.	R		
S22	Zoom capability.	R		
Graphical Displays – Topographical Information				
S23	Ability to incorporate topographical information.	R		
Graphical Displays – Tactical Information				
S24	Incorporation of Ortho photo(s) (or site map equivalent) with icon based overlay/data layers.	R		*File type: jpg or tiff format; Ortho photo source: County, City, or Tribal GIS-based Digital Ortho Photography (primary) or Public Domain Acquisition Sources (secondary; Icons representing various Tactical Planning Activities (Bus Staging, Road Blocks, etc.) should be able to be placed*

Functional Requirements				
	R/D = Required functionality; Desired functionality			
ID	**Requirement**	**R/D**		**Comments**
				over the digital ortho via the software. The ability to edit the tactical plan/information.
S25	Ortho photo – Standard Resolution 3 ft per pixel gray scale	R		*Resolution can vary if necessary. Images should be sufficiently detailed to allow the on-scene commander to carry out his / her duties. However, file size is an issue and there should be an attempt to constrain the image sizes to 50-75KB with a maximum file size of 2MB.*
S26	Ortho photo – Coverage map extent 2 square miles.	R		*However, coverage must adequately convey the site's environment and the areas where operations may have to be conducted.*
S27	Ortho photo – Ability to incorporate additional maps with larger coverage area	R		*Larger coverage areas will have less resolution in order to accommodate file size requirement.*
S28	Ortho photo – attempt to constrain image sizes to 50 - 75Kbytes with a <u>maximum</u> file size of 2 megabytes	R		*File size is an issue, however, the utility additional content may bring to the incident commander could affect file sizes; Image should be sufficiently detailed to allow the commander to carry out his / her duties.*
S29	Ortho photo – Display the date of Ortho photo.	R		
S30	Display the date of tactical map / site map equivalent creation.	R		
S31	Display of legend on tactical map / site map equivalent.	R		

Functional Requirements				
	R/D = Required functionality; Desired functionality			
ID	**Requirement**	**R/D**		**Comments**
S32	Display scale on tactical map / site map equivalent.	R		
S33	Ability to interactively modify pre planned tactical map/site map equivalent based on specific incident activity.	R		*Allow for the movement of the icons to new positions on tactical plan.*
S34	Ability to record / archive / retain / version operational modifications made to the tactical map/site map equivalent.	R		
S35	Identification of various and multiple staging areas.	R		
S36	Identify points of access or areas of inaccessibility on tactical map / site map equivalent.	R		
S37	Display hydrant locations and flow value (GPM) for each hydrant or type of hydrant.	R		
S38	Display fire department connection locations.	R		
State Critical Infrastructure				
S39	Separately identify, add, manage and integrate State infrastructure.	R		
S40	Identify State Critical Infrastructure, by category and type.	R		
S41	Ability to filter critical infrastructure by category and type.	R		
S42	Ability to incorporate State Critical Infrastructure data from Washington EMD.	R		
Local Critical Infrastructure (Local Priorities, Locally Defined)				
S43	Separately identify, add,	R		

Functional Requirements				
	R/D = Required functionality; Desired functionality			
ID	**Requirement**	**R/D**		**Comments**
	manage and integrate Local infrastructure.			
S44	Identify Local Critical infrastructure, by category and type.	R		
S45	Ability to filter local critical infrastructure by category and type.	R		
Zone of Effect				
S46	Identify zone of effect on graphical display(s).	R		
S47	Ability to adjust zone of effect to reflect specific incident.	R		
S48	Identify critical infrastructure in zone of effect.	R		
Site Utility Information				
S49	Utility Ownership for each utility - Entity name, emergency contact phone, non-emergency contact phone.	R		
S50	Location of: Electrical shutoff(s) – Photo and text.	R		
S51	Location of: Gas shutoff(s) – Photo and text.	R		
S52	Location of: Fire hydrants – Photo and text.	R		
S53	Location of: Fire department connections – Photo and text.	R		
S54	Location of: Telephone shutoff(s) – Photo and text.	R		
S55	Location of: Television shutoff(s) – Photo and text.	R		
S56	Location of: Internet shutoff(s) – Photo and text.	R		
S57	Location of: Intercom shutoff(s) – Photo and text.	R		

Functional Requirements				
	R/D = Required functionality; Desired functionality			
ID	**Requirement**	**R/D**		**Comments**
S58	Location of: Video Camera System(s) – Photo and text.	R		
S59	Location of: Annunciator Panel(s) – Photo and text.	R		
S60	Location of: Backup Power System(s) – Photo and text.	R		
S61	Location of: Sprinkler Riser shutoff(s) – Photo and text.	R		
S62	Location of: Fire Suppression System(s), e.g., special equipment & systems used to extinguish fires with media other than water – Photo and text.	R		
S63	Location of: Fire Protection System(s), e.g., non-extinguishing systems used to detect abnormal conditions such as smoke detectors, manual pull stations, thermal detectors, etc. – Photo and text.	R		
S64	Location of: Security System Control(s) – Photo and text.	R		
Site Access Characteristics				
S65	Gates(s) – Photo and text.	R		
S66	Barriers(s) – Photo and text.	R		
S67	Restricted Area(s) – Photo and text	R		
S68	Sensitive Area(s) – Photo and text.	R		
S69	Knox Box – Photo and text (for multiple boxes).	R		
S70	Security Alarm(s) – Photo and text.	R		
S71	Alarm Panel(s) – Photo and text.	R		

Functional Requirements				
	R/D = Required functionality; Desired functionality			
ID	**Requirement**	**R/D**		**Comments**
S72	Underground Access – Photo and text.	R		
BUILDING				
B1	Identification of hazardous materials in building by type, quantity, tier, and location.	R		
B2	Associate HazMat to USDOT ERG	R		
B3	Ability to add links to other HazMat sources.	D		
B4	Ability to identify (flag) via text and graphically (on maps) any extraordinary situation or characteristic that first responders need to be immediately aware of.	R		
B5	Evacuation Plan - labeled by floor.	R		
B6	Building Contact Information Title/Position, Name, Phone Numbers, photo – Ability to incorporate multiple contacts.	R		
B7	Occupancy Load by hour.	R		
B8	Typical location of occupants in building	R		
B9	Hours of building operation	R		
Building Address				
B10	Building name or building identifier – formal name and alias(es).	R		
B11	Building Address – Input data validated by USPS.	R		
B12	Building City – Input data validated by USPS.	R		
B13	Building State – Input data	R		

Functional Requirements				
	R/D = Required functionality; Desired functionality			
ID	**Requirement**	**R/D**		**Comments**
	validated by USPS.			
B14	Building Zip + 4 – Input data validated by USPS.	R		
B15	GPS Coordinates in lat-long using decimal degrees for building main entrance or designated entrance, precision minimum of 5 decimal places for lat-long reading.	R		
Building Utility Information				
B16	Utility Ownership for each utility - Entity name, emergency contact phone, non-emergency contact phone.	R		
B17	Electrical shutoff(s) – Photo and text.	R		
B18	Gas shutoff(s) – Photo and text.	R		
B19	Telephone shutoff(s) – Photo and text.	R		
B20	Television shutoff(s) – Photo and text.	R		
B21	Internet shutoff(s) – Photo and text.	R		
B22	Intercom shutoff(s) – Photo and text.	R		
B23	Video Camera System(s) – Photo and text.	R		
B24	Annunciator Panel(s) – Photo and text.	R		
B25	Backup Power System(s) – Photo and text.	R		

Functional Requirements				
	R/D = Required functionality; Desired functionality			
ID	**Requirement**	**R/D**		**Comments**
B26	Sprinkler Riser shutoff(s) – Photo and text.	R		
B27	Fire Suppression System Control(s) – Photo and text.	R		
B28	Fire Protection System Control(s) – Photo and text.	R		
B29	Security System Control(s) – Photo and text.	R		
Building Characteristics				
B30	Square feet – Gross.	R		
B31	Height - Quantity and unit.	R		
B32	Length - Quantity and unit.	R		
B33	Width - Quantity and unit.	R		
B34	Number of floors – Quantity.	R		
B35	Grade Access – Text.	R		
B36	Construction Class - Type Identification.	R		*Type I – Fire Resistive* *Type II – Non-combustible* *Type III – Ordinary* *Type IV – Heavy timber* *Type V – Wood Frame*
B37	Roof Construction - Type Identification	R		*Not known* *Bow String* *Light weight wood truss* *Metal truss* *Steel* *Steel I-beam Q-Deck* *Wood truss*
B38	Roof Coverings - Type Identification.	R		*Not known* *Asphalt* *Asphalt shingle* *Composite shingle* *Mop tar* *Non-combustible metal* *Non-combustible tile* *Plastic membrane* *Wood shake shingle*

Functional Requirements				
	R/D = Required functionality; Desired functionality			
ID	**Requirement**	**R/D**		**Comments**
B39	GPM for percent involved - Calculation for water flow of GPM based on size of building and percent involvement.	R		
B40	Overhead load - Photo and text.	R		
B41	Collapse perimeter description – Text.	R		
B42	Collapse Zone (ft) – Quantity and unit.	R		
Building Images				
B43	Photos and text for each side of building with orientation identified include/display both fire and police tactical floor/side definitions, clearly delineating between the two.	R		
Building Access Characteristics				
B44	Access Point(s) – Photo and text.	R		
B45	Restricted Area(s) – Photo and text.	R		
B46	Sensitive Area(s) – Photo and text.	R		
B47	Restricted Area(s) – Photo and text.	R		
B48	Knox Box – Photo and text (for multiple boxes).	R		
B49	Alarm Panel(s) – Photo and text.	R		
B50	Security Alarm(s) – Photo and text.	R		
B51	Underground Access – Photo and text.	R		
B52	Stair Egress – Photo and text (for multiple locations).	R		

Functional Requirements				
	R/D = Required functionality; Desired functionality			
ID	**Requirement**	**R/D**		**Comments**
FLOORS				
F1	Identification of hazardous materials on floor by type, quantity, tier, and location.	R		
F2	Associate HazMat to USDOT ERG.	R		
F3	Ability to add links to other HazMat sources.	D		
F4	Ability to identify (flag) via text and graphically (on maps) any extraordinary situation or characteristic that first responders need to be immediately aware of.	R		
Floor Plan Diagram				
F5	Use and display of standard NIMS (Homeland Security) Icons or Icons approved by WASPC.	R		*Homeland Security Working Group Symbology URL = http://www.fgdc.gov/HSWG/index.html*
F6	Locations of: Access Doors.	R		
F7	Locations of: Fire Doors.	R		
F8	Door Swing Direction.	R		
F9	Locations of: Windows.	R		
F10	Locations of: Hidden Spaces.	R		
F11	Room Numbers identified.	R		
F12	Locations of: Stairwells.	R		
F13	Locations of: Elevator shafts.	R		
F14	Locations of: Staging areas on floor.	R		
F15	Locations of: Shower facilities.	R		
F16	Evacuation plan diagram for floor.	R		
F17	Location of video cameras.	R		
F18	Location of elevator control room.	R		

Functional Requirements				
	R/D = Required functionality; Desired functionality			
ID	**Requirement**	**R/D**		**Comments**
Floor Characteristics				
F19	Gross Square Footage per floor.	R		
F20	Windows with secure coverings - Ability to include photo and text (for multiple systems).	R		
F21	Extraordinary Characteristics at floor level - Ability to include photo and text (for multiple systems).	R		