Teton Interagency Fire Management

Standards for Type 3 Incident GIS Products

Basics

Who does the GIS Specialist (GISS) work for?

On Type 1 and 2 incidents, the GIS specialists work in the planning section, for the Situation Unit leader. If this level of ICS isn't activated, the GISS works for the Planning Section chief, or directly for the Incident Commander (IC). Some fires managed long duration may have a Strategic Operations Planner (SOPL) assigned, and the GISS may work for them.

If the chain of command is unclear, ask for a point of contact for map requests, ask that requests funnel through them and ask this person to set expectations for product content and delivery timelines.

What is the GISS expected to do?

Acquire and process incident data: Most often this will involve downloading these data from fire personnel's GPS units and exporting to shapefiles. Incident data to maintain can include: fire perimeters and progression, division breaks, Incident Command Post (ICP), helibase, staging areas, camps, helispots, drop points, Medivac sites, water sources, management action points (MAPs), and values at risk.

Create maps: for operational resources to use during their shifts, for the management team to use while briefing resources, for the management team to use in developing their strategies, for aviation resources to use for mission planning, or for public information officers (PIOs) to distribute to public.

Bonus points: create zip files from the incident data shapefiles for the SOPL, Fire Management Officer (FMO) or duty officer to load into the Wildland Fire Decision Support System (WFDSS).

What are the timelines?

Check with Plans/SOPL/IC to confirm that these are accurate for your incident. Not every map product will be requested for every shift or for every incident.

Briefing maps and IAP maps: need to be ready for morning briefing, usually between 0600 and 0700, depending on the incident. These maps will need to have the previous day's perimeter and any new points (helispots, Medivac sites, drop points, etc) . This means late nights!

Planning maps: need to be ready for the afternoon planning meeting, usually between 1500 and 1700.

Aviation hazard maps: do not need regular updates unless new hazards or relevant points are identified.

Public information maps: need to be ready for PIOs. Check with them on timing.

Details

Data Standards

All data will be in NAD 83. Map products may be created in UTM zone 12N but fire resources use lat/long in their GPSs so map gridlines should be in degrees/minutes/seconds. Aviation uses degrees/decimal minutes, so aviation-specific products should have gridlines in that format.

Map Standards

All maps need to have:

- Title (ie Bull Fire IAP map)
- Operational shift for which map is valid
- Scale bar
- North arrow
- Legend
- Map author name/initials
- Lat/long tic marks in degrees/minutes/seconds **EXCEPT** aviation specific maps should have these in degrees/decimal minutes
- Incident Command System (ICS) symbology

All of the base data for the Bridger-Teton NF and Grand Teton NP are available on the Teton Fire hard drives that each Park, Zone and Assistant Fire Management Officer have.

ESRI has a fire fighting symbology group that has standard symbols for most incident-related location data. Click on the symbol, then “More Symbols” then select “Forestry”. “Firefighting” will appear as a category in the drop-down menu.

The Fire Incident Mapping Tool (FIMT) extension to ArcMap has a comprehensive fire symbology group. FIMT is downloadable from http://gis.nwcg.gov/links_tools.html. The FIMT symbology group is recommended for larger or more complex incidents.

Table 1 summarizes the different map types, intended use and audience, required components and an example pdf map.

Zipped products for WFDSS

WFDSS is the system of record for documenting wildland fire management decisions. This system has the ability to display geographic information either from uploaded shapefiles or from on-screen digitized features. If you are creating shapefiles for the incident, especially perimeters and MAPs, they can be uploaded into WFDSS. A few tips:

- WFDSS will only accept zipped polygon shapefiles. Line and point features must be buffered (if only 1 meter or foot) then zipped.
- Shapefiles must be projected and have the .prj included in the zip file.

- WFDSS cannot handle shapefiles with multiple features. For example, if you are preparing a management action points file for WFDSS, there needs to be a separate zip file for each MAP.

Links

The National Wildfire Coordinating Group Geospatial Task Group's website has a downloadable version of the NWCG GIS SOP and links to other tools: http://gis.nwcg.gov/index.html

Tools are downloadable from the NWCG site: http://gis.nwcg.gov/links_tools.html

The course website for GIS Specialist for Incident Management, S-341, has extensive information on expectations, requirements, and products: http://gis.nwcg.gov/2008_GISS_Resource/cd_contents.html

TABLE 1

Map	Intent/Audience	Elements	Example

Incident Action Plan (IAP)	- Communicates tactical and geographic features of fire
	- For all operations resources on fire
	- Needs to be field-sized – ie able to fit in a cargo pocket
		- 8.5" x 11" or 11" x 17"
		- 1:24,000 scale
		- Include fire and access routes; split into separate pages if necessary
		- Incident data:
		  - Fire perimeter
		  - Controlled/uncontrolled fire line
		  - Division breaks
		  - ICP, helibase, drop points, helispots, Medivac sites, weather stations, water sources, repeaters, etc
		  - Management action points
		- Transportation/access (roads, trails)
		- Wilderness boundary (especially if tactics are different within Wilderness)
		- Hazards: power lines, mine shafts, bridges with known weight limitations
		- Topo/DRG background with hillshade
			IAP_11x17

Briefing	- Communicate strategy and assignments for the operational period
	- For everyone on the incident
	- Needs to be large format with big font symbology so it can be seen and understood from a distance
	- Needs to include all information referenced in IAP
		- At least ARCH E (36" x 48")
		- Include fire perimeter and access routes and points
		- Incident data:
		  - Fire perimeter
		  - Progression to date may be requested
		  - Controlled/uncontrolled fire line
		  - Division breaks
		  - ICP, helibase, drop points, helispots, Medivac sites, weather stations, water sources,
			Briefing_E

TABLE 1

		repeaters, etc - Management action points - Transportation/access (roads, trails) - Wilderness boundary (especially if tactics are different within Wilderness) - Hazards: power lines, mine shafts, bridges with known weight limitations - Topo/DRG background with hillshade	
Planning	- Used to develop strategies and alternatives for managing the fire - For Planning, Operations, and IC - Needs to be visible to a large group and accommodate people drawing different alternatives on it - Needs to be small scale and cover a large area	- ARCH E (36" x 48") - Include current fire perimeter, progression, access routes, values at risk and topography up to a few miles out - Check with Plans/IC/SOPL for area they want included - Incident data: - Fire perimeter - Fire progression to date - Controlled/uncontrolled fire line - Division breaks - ICP, helibase, drop points, helispots, Medivac sites, weather stations, water sources, repeaters, etc - Management action points - Transportation/access (roads, trails) - Fire history polygons - Wilderness boundary (especially if tactics are different within Wilderness) - Ownership - Hazards: power lines, mine shafts, bridges with	Planning_E

TABLE 1

		known weight limitations - Topo/DRG background	

Aviation hazard	- Communicates known hazards and locations of places helicopters may be requested
	- Used for mission planning
	- Will be posted at helibase
	- Can be distributed to helicopter managers for use in-flight
	- **DOES NOT** replace aviation sectional maps that have complete aerial hazard information
		- ARCH E (36" x 48") – will be posted at helibase
		- 8.5"x11": tile map into 1:24,000 or 1:36,000 scale pages to cover fire area for use in flight
		- Incident data:
		  - Fire perimeter
		  - Division breaks
		  - Helibase, helispots, Medivac sites, repeaters, RAWS stations, water sources
		- Hazards:
		  - Power lines
		  - Paragliding areas
		  - Military training routes with floor/ceiling and contact information labeled
		  - Landing strips and airports
		  - Temporary Flight Restriction (TFR) with ceiling and valid dates labeled
		- Disclaimer that map is for information only and not to be used for navigation
		- Table with lat/long in degrees/decimal minutes for incident locations:
		  - Helibase
		  - Helispots
		  - Medivac sites
		  - Repeaters
		  - RAWS stations
		  - Water sources with type and capacity
		  - Any hospital landing zones identified in the
			aerial_hazard_8x11

TABLE 1

		medical plan	

Public information	- Communicates fire situation to public
	- For general public
		- Usually 8.5” x 11” or 11” x 17” unless requested otherwise
		- Include:
		  - Fire perimeter
		  - Fire progression to date
		  - Any fire-related closures
		  - Roads and trails
		  - Communities
		- **DO NOT SHOW:**
		  - Management action points
		  - Sensitive information: cultural sites, outfitter/guide camp locations, threatened/endangered species habitat
		
		Note: If map will be uploaded to Inciweb, there is a 2 MB limit to image size (96 dpi JPG image from exported 11”x17”map)
			PIO_11x17