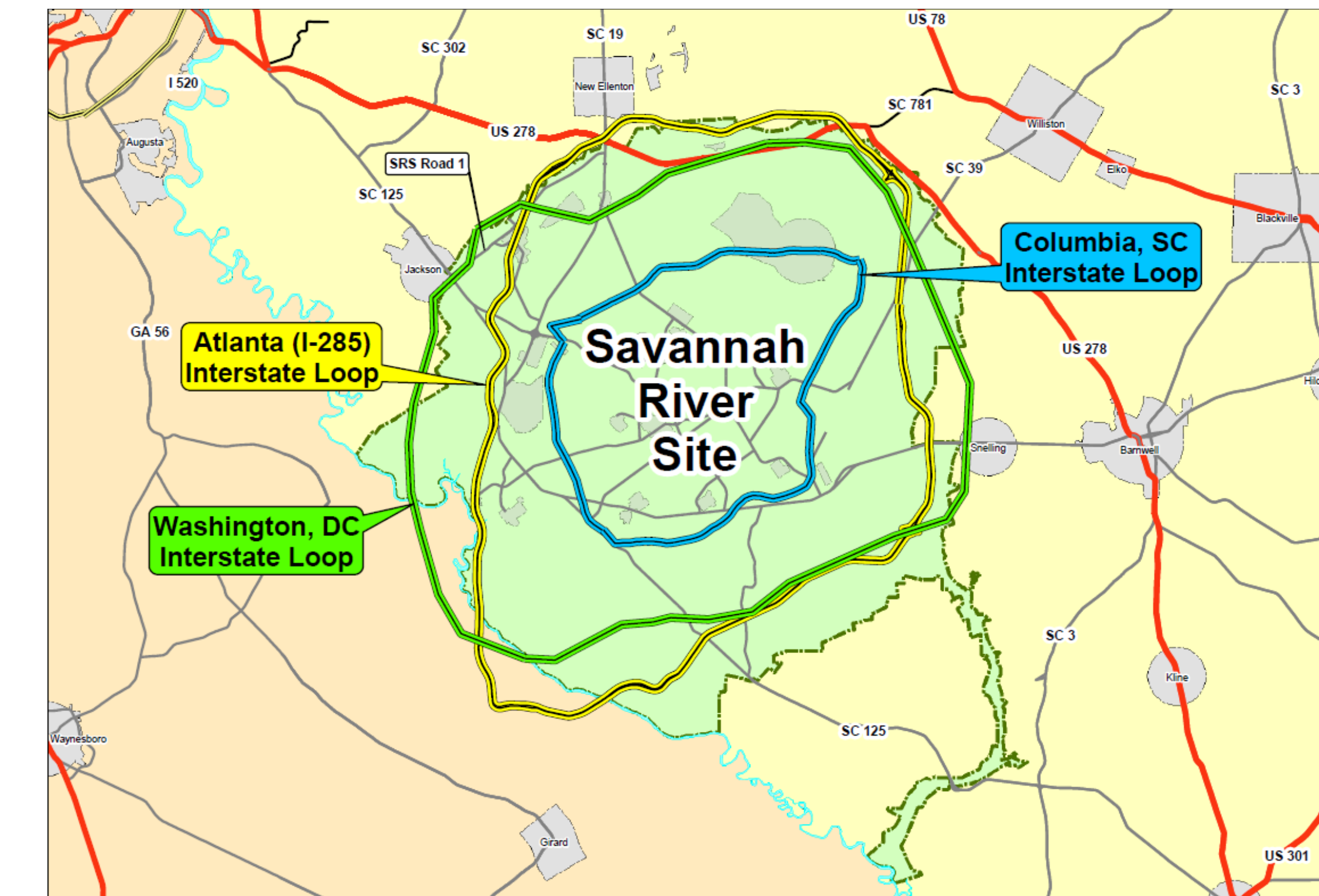
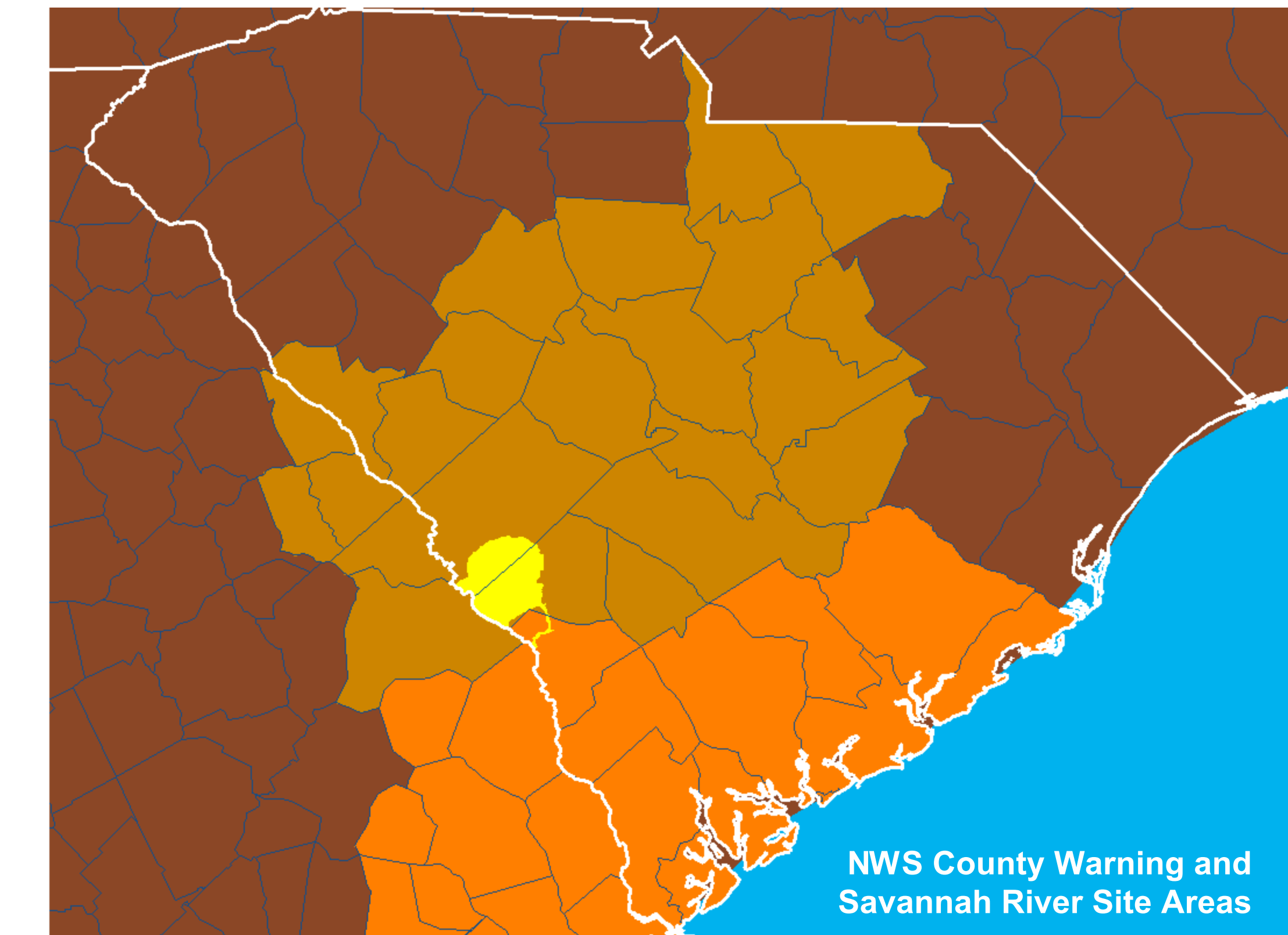


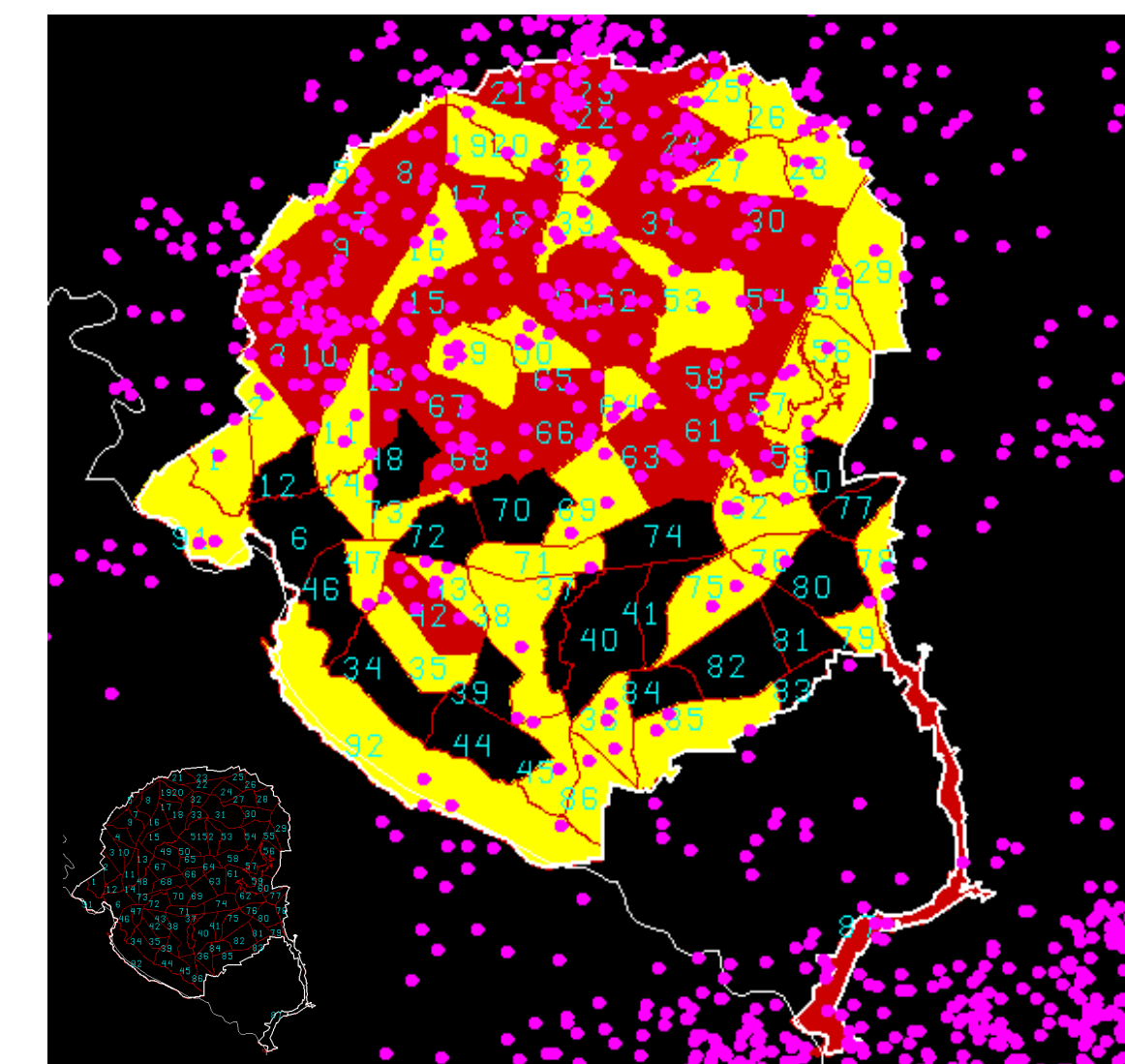
SRNL is managed and operated for the U.S. Department of Energy by Savannah River Nuclear Solutions, LLC



Savannah River Site encompasses 310 sq. miles, larger than many urban metropolitan areas, and comprises a number of disparate facilities covering expansive areas. The site maintains a workforce of approximately 11,000 employees. Additionally, there are remote areas outside the range of warning sirens where workers must be tracked individually to ensure safety.



The Savannah River Site is a NOAA Storm Ready Community residing across portions of three separate counties within South Carolina, and falling under two separate NWS County Warning Area (CWA) offices, increasing the complexity of providing accurate information to operations managers who must remain informed of changing weather conditions.

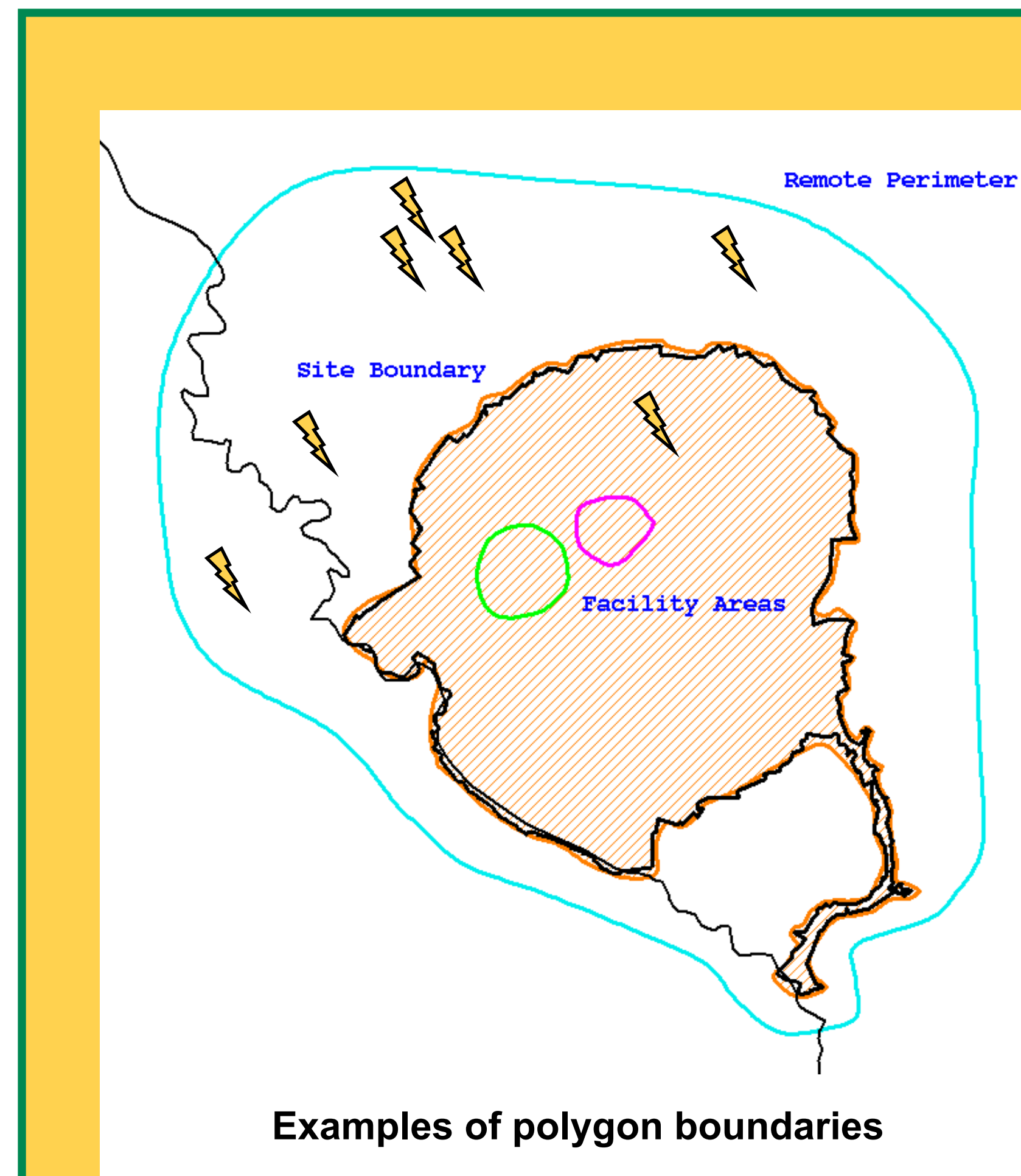


US Forest Service Wildfire Suppression

- Lightning strikes (pink circles) recorded over a 24 hour period.
- Timber compartments (also shown inset) with 1-4 strikes (yellow) and greater than 5 strikes (red).
- Trees struck by lightning can smolder for days until conditions dry enough to ignite.
- Compartments with high activity are chosen for ground and aerial search to protect against wildfires.

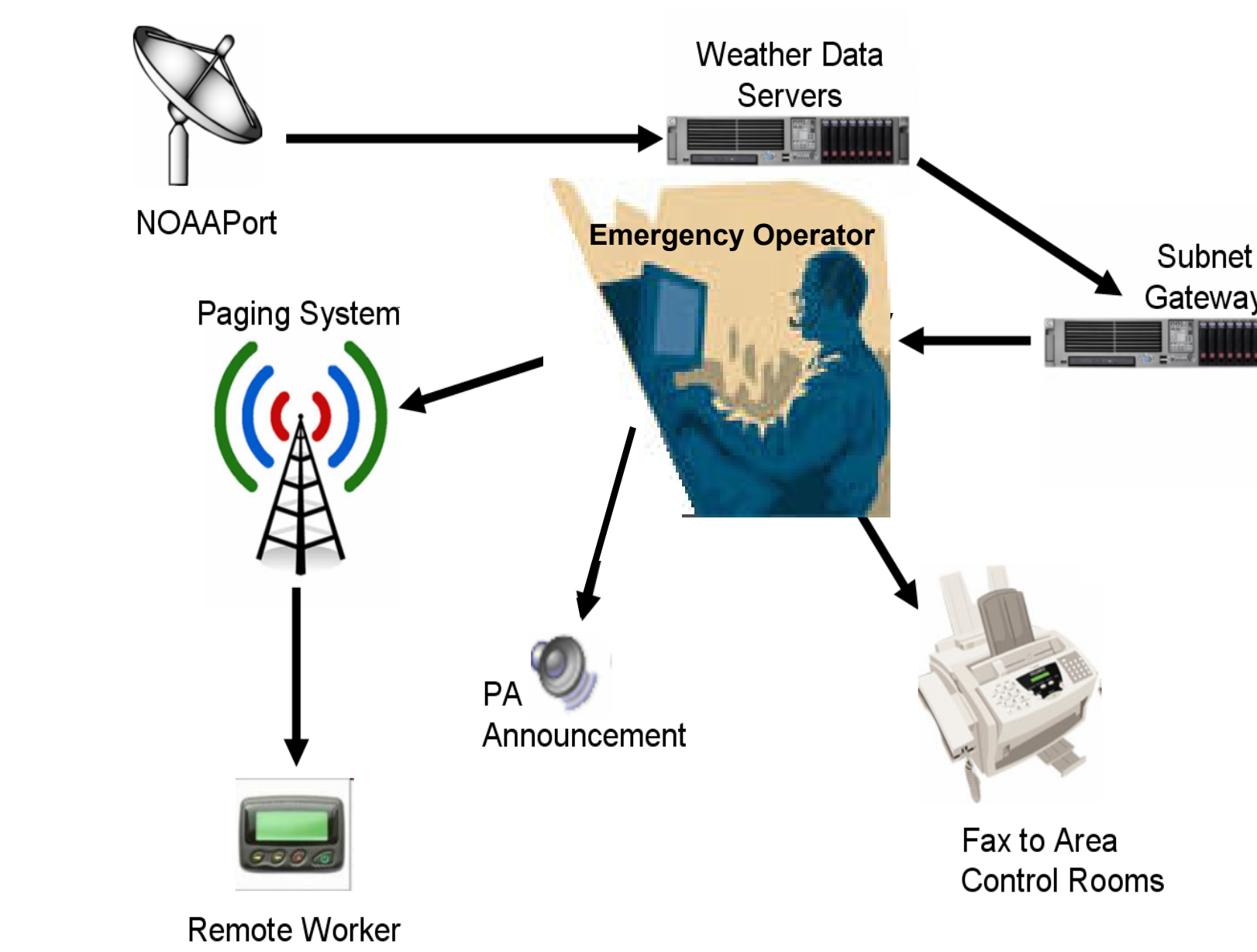


With the implementation of the *American Recovery and Reinvestment Act (ARRA)*, the Savannah River Site Operations Center (SRSOC) responsibility for tracking remote workers has increased from approximately 2,000 workers per month prior to ARRA, to more than 4,000 workers per month. Lightning occurrence is not a component of severe weather notifications provided by the NWS, however strikes within SRS can cause significant disruption to site facilities and assets as well as to outdoor related activities. Increased lead times and awareness of changing conditions can benefit site workers who need to safely complete a task, or secure a work site prior to the onset of hazardous weather conditions.



Examples of polygon boundaries

- Redundant data sources and processing based on Unidata LDM using satellite and internet data reception feeding multiple data processing servers at separate locations.
- The location data of every lightning stroke is tested for occurrence within defined site and/or range boundary polygons encircling various operational interests.
- The inclusion of strikes within a polygon boundary is used to determine if a lightning advisory is to be sent and may include a minimum number / time threshold.
- The SRNL system disseminates SRS lightning advisories as well as NWS issued watch and warnings bulletins received via NOAAPORT which overlap some portion of the site.
- Communication of weather notifications is accomplished via electronic message and site pager alerts to the operations center and directly to remote workers.
- Hazardous weather events require numerous activities to be accomplished in a timely fashion. Automated notification allows operators to work more efficiently!
- Automating the process has reduced notification time significantly while increasing worker awareness of developing weather hazards.

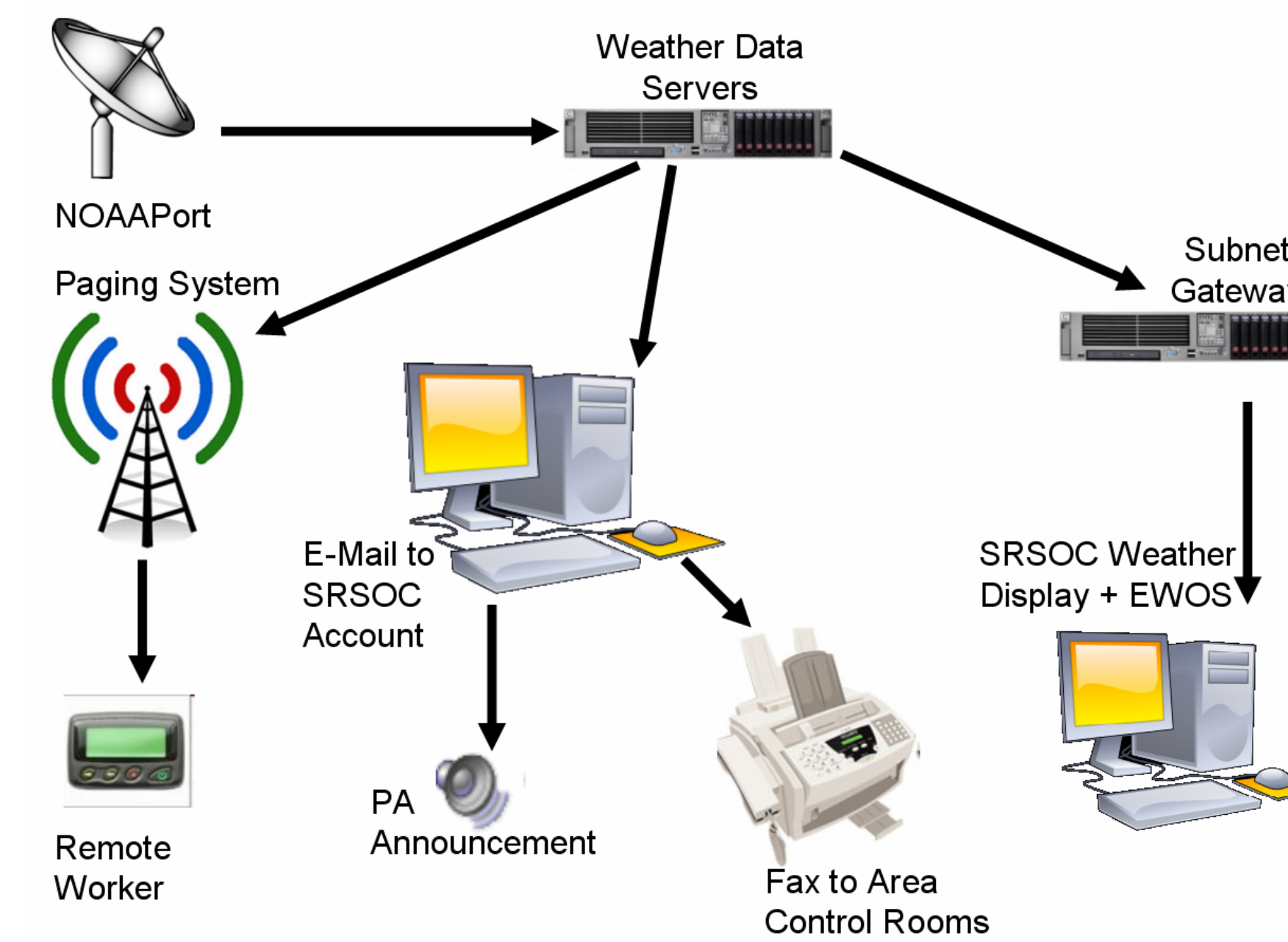


Old System

Operators monitor lightning strike displays and issue site warnings through remote pagers, public address announcements, and faxes to facility control rooms.

Average notification time via pager to remote workers is 5-10 minutes after receipt of lightning strike data.

Time consuming, distraction from other tasks.



New System

Implemented automated method of detection and dissemination of advisories.

Each strike location is checked to determine if it falls within defined boundary polygons.

Notifications sent automatically based on defined actions for matching criteria.

Reduces lead time for notification by 5 to 10 minutes – allows worker to seek shelter sooner.

Allows for redundancy in data reception, processing and warning action initiation.