



Solar Eclipse Communications Planning and Resource Guide

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Cybersecurity and Infrastructure Security Agency
Integrated Operations Division



INTRODUCTION

The Cybersecurity and Infrastructure Security Agency (CISA) compiled a Communications Planning and Resource Guide to be used in support of the [2023 and 2024 solar eclipse](#) events. The workgroup that compiled this document consists of subject matter experts (SMEs) in the emergency communications/planning field. In addition, CISA's Emergency Support Function (ESF) #2 – Communications team has led the development of this document and is leading the agency's efforts to provide communications support and capacity building to State, Local, Tribal and Territorial (SLTT) governments and first responders.

North America will experience solar eclipses on Saturday, Oct 14, 2023, and Monday, April 8, 2024, which will impact states in all ten CISA regions. The first will be an “annular” eclipse where the moon covers the sun's center, forming a “ring of fire” or annulus around the moon. This happens when the moon is at its farthest point from earth during a solar eclipse. This event will begin in Oregon and move diagonally southeast where it will exit the United States (US) from Texas. Next year's eclipse will be a “total solar eclipse” where the moon covers the sun's outline completely creating a dark umbra or “path of totality” from the point where it enters the US in southwest Texas and later exits North America from eastern Canada.

BACKGROUND

The last total solar eclipse in the US occurred on August 21, 2017. It passed over the US traversing from Oregon across 14 states in a southeast direction exiting from South Carolina. As captured in After Action Reporting (AAR), local Emergency Managers (EMs) and communications professionals found that SLTTs which engaged in early planning and coordination experienced eclipse events that passed without major incident.

Prior to the 2017 eclipse, the US had not experienced an eclipse of this scale, which attracted hundreds of thousands of spectators to view the event. Thousands of visitors are expected to migrate to areas in the main eclipse path this year and next, putting a strain on local resources that are organizing support for the events.

Finally, solar eclipse events have not received a Special Event Assessment Rating (SEAR). If designated as such, the highest-level SEAR ratings, level 1 and 2, can provide access to federal resources in support of the SLTTs. SEARs are voluntarily submitted special events, which are sent to the Department of Homeland Security (DHS) Office of Operations Coordination by SLTT officials for a risk assessment. Examples of SEAR events have included the Super Bowl, Indianapolis 500, and the Kentucky Derby. Barring future SEAR designations, this document serves as a resource to help SLTTs plan accordingly.

SCOPE

CISA compiled this Communications Planning and Resource Guide to assist SLTTs in pre-planning for communications issues as well as to capture suggestions, recommendations, and services available from the whole of government to help mitigate shortfalls and close gaps. This document supplements the efforts of the Eclipse Federal Subcommittee as well as ongoing assessments in Texas, Oklahoma, Arkansas, and Illinois.

All follow-up inquiries from SLTTs will continue to be filtered through [CISA regional POCs](#), i.e., Communications Liaisons (CLs) or Emergency Communications Coordinator (ECCs). This document is considered a voluntary reference guide, does not enact policy changes, and is not considered an authoritative source.



CHALLENGES

The following challenges have been summarized from anecdotal sources and what was observed in the AAR reporting period following the 2017 eclipse event. These challenges inform actionable recommendations that SLTTs can take in preparing for the upcoming solar eclipse events that could impact their respective states. The following challenges were observed for communications infrastructure, responder resources, and personnel.

In 2017, several small communities were overwhelmed in the transportation, communications, and emergency services sector when unplanned and uncontrolled population movements migrated quickly into areas not designed for large crowds. According to some EMS, some communities were impacted for up to two weeks with emergency services personnel most impacted as they struggled to respond to an increase in calls-for-service. Finally, there were numerous reports of overwhelmed and malfunctioning LTE (4G mobile communications standard) and 5G networks.

Due to the anticipated path of the upcoming eclipses, and data that is tracking potential tourism, wireless networks sized for small and rural steady-state populations may be overwhelmed by unexpected mass gatherings, potentially leading to congestion issues that limit cellular communications. Recent site surveys identified potential viewing areas in Texas, Oklahoma, and Arkansas with limited cell coverage.

Ingress and egress transportation routes may be severely impacted depending on the number of spectators, and staging areas for emergency personnel or equipment may be limited. Small, rural communities often have limited personnel working at 911 Centers/ Public Safety Answering Points (PSAPs) and do not regularly experience large call volumes. However, these calls could increase due to compounding health and environmental factors, and a temporary surge in population.

RECOMMENDATIONS

See below for recommendations that were compiled by the workgroup responsible for drafting this document. For additional information, work with your regional CISA POC (i.e., ECC or CL) or access more resources on [CISA's intranet](#).

Initiate Planning Early

- **Identify the path of the eclipse through your Area of Responsibility (AOR)** - Map PSAPs, State Radio, Emergency Operation Centers (EOCs), Fire, Police, EMS, Airports, Hospitals, National/State Parks, and other critical sites along the path.
- **Identify major gatherings** - Determine communications, logistical requirements, and other needs at the appropriate state or local level of responsibility for unplanned and planned activities. Consider early social media and other outreach efforts to help locals and tourists prepare.
- **Capture event schedules & timelines** - Provide a simple bulleted list of activities planned for the date in question. This will serve as a reminder for first responder roles, responsibilities, and assignments.
- **Coordinate with local infrastructure providers** - If mass gathering sites (RV campgrounds, etc.) are identified, infrastructure providers (communications, water/wastewater, power) may be able to take steps to mitigate potential capacity issues.
- **Develop the Communications Plan** - For detailed planning steps, refer to the NSSE/SEAR Communications Planning Toolkit (*see graphic*).

Submit a Communications Technical Assistance (TA) request through the Statewide Interoperability Coordinator (SWIC). TA requests could help fund or identify trainers for planning assistance, expertise, and tabletop exercises (TTX) in the affected region/ state. This could also become an opportunity to share technical resources and best practices across affected states.



Apply for a Special Event Assessment rating (SEAR). [The National Special Events Data Call](#) is an annual process that relies on the voluntary participation of SLTT personnel from across the US to collect information on events occurring in their respective jurisdictions. Events collected during the Data Call are subsequently run through a quantitative/ qualitative analytical methodology. This methodology removes as much subjectivity as possible, gathers uniform information from contributors, and aids in the process of assigning SEAR levels to each event.

The 2024 Data Call is for events occurring from December 1, 2023 - November 30, 2024. Please note: The DHS Special Events Program will continue to accept event submissions after September 11, 2023, as “short notice events,” but their SEAR adjudication may be delayed. To ask questions about a Special Event Assessment Rating (SEAR) level for a particular event in your state, contact the Special Events Program at DHSSpecialEvents@hq.dhs.gov.

Review the National Special Security Events (NSSE)/ Special Event Assessment Rating (SEAR) Communications Planning Toolkit (Version 2.0). This toolkit provides a methodical, step-by-step planning process with templates that will assist SLTTs in preparing and providing communications support for special events including the upcoming eclipses. To request a copy of the NSSE/SEAR Toolkit, contact ECD@cisa.dhs.gov.

CONSIDERATIONS

Please see below for some considerations in preparing communication plans as delineated by each AOR.

| | Operations | Logistics | Planning |
|--------------------------|--|--|--|
| State/ County | <ul style="list-style-type: none"> ▪ Ensure Police, Fire, EMS, Transportation, Public Works, Public Safety personnel take advantage of communications trainings ▪ If ESF # 2 is activated, stand up ICS Communications Unit Leader (COML) position(s) and create ICS 205 forms | <ul style="list-style-type: none"> ▪ Coordinate public safety logistics such as communication resources for first responders ▪ Ensure personnel have been issued Government Emergency Telecommunications System (GETS)/Wireless Priority Service (WPS) cards, have installed the PTS Dialer app on their cellular phones, and have been trained and exercised in their use ▪ Identify, preorder, and prestage communications equipment that will be needed during the eclipse | <ul style="list-style-type: none"> ▪ Develop a Communications Plan (take into consideration traffic management) ▪ Develop staff rotation plans; plan for supplemental staff requests ▪ Plan for Access and Functional Needs (AFN) ▪ Plan for equipment and personnel resources that may need to be requested ▪ Consider Primary, Alternate, Contingency, Emergency (PACE) Planning ▪ Distribute emergency weather shelter maps |

| | Operations | Logistics | Planning |
|-----------------|--|--|--|
| Regional | <ul style="list-style-type: none"> ▪ Assign Regional Communications Coordinator(s) ▪ Identify liaisons from each state to share and deconflict information | <ul style="list-style-type: none"> ▪ Promote inclusive partnerships across states, localities, and the private sector ▪ Coordinate Federal and Emergency Mutual Aid Compact (EMAC) actions if multiple jurisdictions are requesting resources simultaneously ▪ Assure equipment is fully operational in advance of pre-staging, i.e., batteries or outdated programming | <ul style="list-style-type: none"> ▪ Develop scalable emergency communications plans: Include procedures for sharing information and resources to support interoperable communications addressing more rural or remote areas with limited communications infrastructure ▪ Identify a Regional Coordination Center (including virtual option) |



ADDITIONAL RESOURCES

The following lists resources and/or services for situational awareness and planning purposes. For a list of regional POCs to initiate outreach or to obtain further information, [see CISA's public facing webpage for regional contacts.](#)

[American Astronomical Society \(AAS\) Solar Eclipse Across America](#) - The resources linked in this website are intended for broad distribution and may be freely reproduced, printed, and disseminated if no changes are made to them.

[Communications Assets Survey and Mapping \(CASM\) Tool](#) - A standardized collection tool that agencies can use to visually display data about their public safety communications assets and how they are used. CASM is updated regularly by participants and contains information regarding Land Mobile Radio (LMR) systems, methods of interoperability, and is used by emergency responders.

[Cellular Telecommunications Industry Association \(CTIA\)](#) - Find consumer emergency preparedness guides from CTIA's emergency preparedness team.

[Federal Communications Commission \(FCC\)](#) - The FCC administers policies pertaining to a variety of public safety emergency communications issues. These include 911 and E911; alerting; interoperability of public safety communications; communications infrastructure protection and disaster response; and network security and reliability. During a major public emergency, the commission's primary mission is to ensure continuous operations and restore critical communications systems and services. The FCC is working towards the goals of operable and interoperable public safety communications systems for its spectrum users: [700 MHz Spectrum](#); [800 MHz Spectrum](#); and [VHF/UHF Narrowbanding](#). The FCC works closely with the communications sector to assess the operational status of essential communications systems and assist in the restoration of critical services.

[FEMA's National Response Framework \(NRF\)](#) - The NRF explains how the nation responds to all types of disasters and emergencies. It uses scalable, flexible, and adaptable concepts identified in the National Incident Management System (NIMS) to align key roles and responsibilities.

[FirstNet – Public Safety Wireless Broadband](#) – The First Responder Network Authority is an independent agency within the U.S. Department of Commerce's National Telecommunications and Information Administration (NTIA) that oversees FirstNet, the nation's communications network dedicated to emergency responders and the public safety community. Subscribers to FirstNet can obtain pre-planning event support to help maximize broadband capabilities. This service provides for more timely decision making, more efficient use of resources, and a better coordinated overall response. Please see this link for the [FirstNet Authority Emergency Management Guide](#).

[Great American Eclipse Website](#) – This website hosts a plethora of resources for states that might be impacted by the eclipses as well as a repository of historical information from 2017. See specific pages for each state that is anticipating impacts: Texas, Oklahoma, Arkansas, Missouri, Kentucky, Illinois, Indiana, Ohio, Pennsylvania, New York, Vermont, New Hampshire, Maine.

[Interoperable Communications Technical Assistance Program \(ICTAP\)](#) – ICTAP offers technical assistance, Communications Unit virtual trainings, and CISA Emergency Communications Coordination Support.

[NASA's Scientific Visualization Studio \(SVS\)](#) - Provides a map illustrating the path of the two solar eclipses.

[National Special Security Events /Special Event Assessment Rating \(NSSE/SEAR\) Communications Planning Toolkit](#) – Provides detailed planning guidance, information, and helpful tools (e.g., examples, forms, and templates) to assist SLTT officials prepare for and provide communications support during an NSSE/ SEAR event.



[National Emergency Communications Plan \(NECP\)](#) - The NECP is the nation's strategic plan to strengthen and enhance emergency communications capabilities and assists those who plan for, coordinate, invest in, and use operable and interoperable communications for response and recovery operations.

[Priority Telecommunications Services Area Representatives \(PARs\)](#) - PARs act as regional resources to raise awareness about Priority Telecommunications Services (PTS) and assist organizations with PTS training needs.

Priority Telecommunications Services (PTS) – CISA's PTS program is focused on working with its partners within the 16 Critical Infrastructure sectors to ensure that communities have access to priority telecommunications and restoration services to ensure communication under circumstances where networks are congested.

- **The three pillars of PTS are: [Wireless Priority Services \(WPS\)](#); [Government Emergency Telecommunications Service \(GETS\)](#), [Telecommunications Service Priority \(TSP\)](#).**
- WPS can be a key tool to support priority communications in the middle of extreme events by providing its subscribers with priority access over cellular networks. The call success rates of WPS during times of severe network congestion (such as hurricanes) typically exceed 90%. In certain instances, WPS can be activated on short notice. However, short notice or emergency activations typically take several hours to complete.
- GETS is a free service that can be used when dialing from most any telephone and is enabled using a calling card where one dials a telephone number, a PIN, and the destination number. GETS is not active during the first segment of a cellular call; for that, WPS is required.
- TSP is for repair and installation of organizations' critical voice and data circuits.

The PTS Dialer App streamlines the process of making GETS and WPS priority calls. The app conveniently stores a user's GETS PIN and automatically adds required access numbers and codes before the destination number. The app automatically accesses a subscriber's phone contacts and recent calls log and provides easy access to the most frequently called numbers that have been dialed when using the app. The PTS Dialer App is available in the Apple App Store, Google Play, and the FirstNet® App Catalog (iOS and Android).

CISA encourages agencies to sign up for WPS before the eclipse occurs as a part of operational planning and preparations. All qualifying organizations are eligible to sign up for this free add-on service. State and local agencies can contact their region's ECCs and PAR to activate their subscriptions.

[SAFECOM](#) - Formed after the terrorist attacks of September 11, 2001, SAFECOM is continuously working to improve emergency response providers' interjurisdictional and interdisciplinary emergency communications operability, interoperability, and security.

[SHARed RESources High Frequency \(HF\) Radio Program \(SHARES\)](#) – National Security/ Emergency Preparedness (NS/ EP) personnel need to transmit critical messages to coordinate emergency operations even when traditional means of communicating via landlines and cellphones are damaged or destroyed. SHARES provides an additional means for users with a NS/EP mission to communicate when landline and cellular communications are unavailable.