2017 Solar Eclipse
Eclipse Coordination Plan
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Executive Summary

On August 21st, 2017 the State of Tennessee will have a front row seat to one of the most incredible astronomical events that an individual can hope to experience in their lifetime: a solar eclipse. This event will be the first total solar eclipse in the continental United States in 38 years and the path of totality, where the moon will completely block view of the sun, stretches across forty-four counties in middle and eastern Tennessee. Additionally, the other fifty-one counties of the State will experience a partial eclipse where the moon will block between 93 to 99.9 percent of the Sun.

Due to sharp increases of individuals gathering in prime viewing areas, potential halts that could occur along major transportation routes and numerous other possible threats, the Tennessee Emergency Management Agency (TEMA) sees the potential for emergency situations to arise. It is TEMA's mission to take all potential threats seriously and to ensure plans are in place for providing State emergency support if needed.

The 2017 Solar Eclipse Coordination Plan was created as a single, consolidated resource for profiling the State of Tennessee's emergency preparedness and coordination efforts. This plan outlines the State's general priorities for this event, essential information requirements, and emergency support responsibilities among tasked State Departments and Agencies. It also provides additional situational awareness information from local, state, and federal partners within the Plan's Appendices.

The Tennessee Emergency Management Agency encourages all stakeholders to become familiar with this document and to provide feedback to improve this plan. It is my hope that through pre-planning and coordination with our stakeholders that the State of Tennessee is prepared to the best of its abilities to support any emergency incident that may come from this once in a lifetime event.

Patrick C. Sheehan
Director, TEMA
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Chapter 1 - Introduction

1.1 Purpose:

The purpose of the 2017 Solar Eclipse Coordination Plan is to document the State of Tennessee’s emergency preparedness and emergency coordination efforts for the upcoming solar eclipse event. On August 21st the State of Tennessee will experience some of the best viewing opportunities in the world for the eclipse as the Path of Totality stretches across the State. Approximately forty-four counties in middle and eastern Tennessee will experience a Total Eclipse, where the moon will block 100 percent of the Sun, and the other fifty-one counties will experience a Partial Eclipse, where the moon will block between 93 to 99.9 percent of the Sun.

The State of Tennessee expects that this event has the potential to produce emergency situations that the State will need to be able to support. This consideration is due to sharp increases of individuals gathering in prime viewing areas, potential halts that could occur along major transportation routes, and numerous other possible threats identified in this plan. The Tennessee Emergency Management Agency (TEMA) has created this 2017 Solar Eclipse Coordination Plan as a single, consolidated resource for profiling the State of Tennessee’s emergency coordination efforts among tasked Departments and Agencies.

Map 1: Total Eclipse and Partial Eclipse Counties of Tennessee

Source: TEMA Planning Branch
1.2 Objectives:

The goal of the 2017 Solar Eclipse Coordination Plan is to support safety within Eclipse viewing areas by encouraging partners to prepare in advance for potential emergency situations, by making State emergency support resources available when possible, and by documenting actions of partner agencies for situational awareness. To work towards this goal the following priorities have been established:

- Address Life Safety Needs
- Support Local Governments and Resource Requests
- Support Safe Movement along our Transportation System
- Ensure Coordination and Communication among Local, State, and Federal Partners

1.3 Plan Organization:

The 2017 Solar Eclipse Coordination Plan is organized into four chapters. A brief description of each chapter is provided below.

- Chapter 1 - Introduction: this chapter provides a general overview of the Eclipse plan, its purpose and priorities.
- Chapter 2 – Threats & Assumptions: this chapter provides an overview of threats associated with the Eclipse event and planning assumptions, both known factors and unknown factors, which need to be considered by all partners.
- Chapter 3 - Concept of Operations: this chapter defines roles and responsibilities among tasked State Department and Agencies.
- Chapter 4 – References: this chapter provides an overview of the Plan’s Attachments. The Attachments provide situational awareness information from local, state, and federal partners regarding their Eclipse planning efforts and relevant materials.
1.4 Background:

Solar eclipses are astronomical viewing opportunities that occur when the Moon passes between the Earth and the Sun visually obscuring the image of the Sun. There are various viewing factors that affect whether a partial, annular, lunar, or total eclipse can be witnessed. Out of these sights the total eclipse is the most rare and spectacular of eclipse events to be seen, but a partial eclipse is an incredible sight to witness as well. On August 21\textsuperscript{st} Tennessee will have a front row seat to witness both a total eclipse and a partial eclipse.

Total Eclipse

A total solar eclipse occurs when the Moon's apparent diameter appears larger than the Sun's diameter thus blocking all direct sunlight and temporarily turning the sunniest of days into darkness. The \textit{Path of Totality} for eclipse events occur along a narrow path making this zone the only area that will be able to witness a total eclipse sighting while surrounding areas will witness a partial eclipse sighting. On August 21\textsuperscript{st} the \textit{Path of Totality} will cross Tennessee in what is being called the “Great American Eclipse.”

Map 2: Eclipse Path of Totality for the United States on August 21
The “Great American Eclipse” on August 21st will be the first total solar eclipse over U.S. soil in 26 years (Hawaii 1999), over the continental United States in 38 years, and over the entire continental United States from coast to coast in 99 years.

On August 21st forty-four counties within middle and eastern Tennessee will fall within the eclipse's Path of Totality. The State of Tennessee will have approximately 11 minutes of total eclipse crossing time with the first sighting beginning at 1:25pm Central Time and the last sighting ending at 2:36pm Eastern Time.

Viewing times for witnessing the total eclipse range from a few seconds to approximately 2 minutes & 40 seconds based on how close individuals are to the Path of Totality's center line. Additional information regarding timing is found later in this plan.

Map 3: Eclipse Path of Totality for Tennessee on August 21

Partial Eclipse

A partial solar eclipse occurs when the Moon’s apparent diameter appears larger than the majority of the Sun’s diameter. During a partial eclipse a portion of the Sun’s diameter is always showing to viewers. While a partial eclipse is not as grand of a sight as a total eclipse, a partial eclipse is still a once in a lifetime opportunity and an incredible astronomical event that people will stop to see. This statement is especially true if over 90 percent of the sun is blocked by a partial eclipse which will be the case for all Tennessee counties not experiencing the total eclipse on August 21st.
To measure the extent of a partial eclipse that will be viewed, it is best to review the *Eclipse Obscuration Percentage*. An Eclipse Obscuration Percentage is the fraction of the Sun’s area occulted by the Moon. If the Eclipse Obscuration Percentage is 100 percent then the event is a total eclipse and anything less than 100 percent is considered a partial eclipse.

On August 21st all of Tennessee will experience an Eclipse Obscuration Percentage between 93 percent and 100 percent. When examining TEMA regional territories, TEMA West Region will experience 93 to 99.9 percent obscuration, TEMA Middle Region will experience 95 to 100 percent obscuration, and TEMA East Region will experience 95 to 100 percent obscuration.

The below diagrams show what a partial eclipse at both 90 percent and 99 percent obscuration will look like through eclipse shades. The 99 percent diagram represents the closer example of what the majority of Tennesseans will witness if they are not in the Path of Totality.

**Diagram 1: Phases of a 90 percent Eclipse Obscuration**

![Diagram 1: Phases of a 90 percent Eclipse Obscuration](Source: NASA)

**Diagram 2: Phases of a 99 percent Eclipse Obscuration**

![Diagram 2: Phases of a 99 percent Eclipse Obscuration](Source: NASA)
The following three maps were created by the TEMA Planning Branch to display the average percentile range of eclipse obscuration that each county in Tennessee will witness on August 21st. These maps were compiled by extracting obscuration data from multiple points on the borders of all 95 counties from NASA’s Eclipse website: https://eclipse2017.nasa.gov/. These maps are organized by TEMA Regional territories.

Map 4: TEMA West Region- Percentage Range of Eclipse Obscuration

Source: TEMA Planning Branch
Map 5: TEMA Middle Region- Percentage Range of Eclipse Obscuration

Source: TEMA Planning Branch

Map 6: TEMA West Region- Percentage Range of Eclipse Obscuration

Source: TEMA Planning Branch
1.5 Authority & Scope:

The 2017 Solar Eclipse Coordination Plan is categorized by the TEMA Planning Branch as a Special Event Plan to supplement the Tennessee Emergency Management Plan (TEMP) authorized by TCA 58-2-106. A Special Event Plan is a one-time use plan for a forthcoming event of recognized State concern. A Special Event Plan describes unique circumstances and coordination structures that go beyond what is stated in the all-hazard TEMP. All Special Event Plans created by the TEMA Planning Branch follow guidelines established in Comprehensive Preparedness Guide 101 (CPG-101): Developing and Maintaining Emergency Operations Plans.

The 2017 Solar Eclipse Coordination Plan was created to support safety within Eclipse viewing areas by encouraging partners to prepare in advance for potential emergency situations, by making State emergency support resources available when possible, and by documenting actions of partner agencies for situational awareness. Detailed planning for Eclipse viewing areas, viewing parties and festivals, private camping areas, parking issues, and other areas of ground-level detailed specifics are not a part of this plan’s scope.
Chapter 2 – Threats, Considerations, and Assumptions

2.1 Threats:

In recognizing that the eclipse event itself is not the threat, it is important for the Planning Team to define potential threats that could occur out of or during the August 21st eclipse event. The Planning Team categorized the recognized threats into two groupings: Primary Threat and Associated Threats. These groups act as a tiered system for determining priorities and emergency support resources of greatest need. While the Eclipse Planning Team anticipates the potential for numerous threats, the following threats were the most recognized.

Primary Threat

- The potential for Major Disruptions and Life-Threatening Accidents on our Transportation Systems

Associated Threats

Related to the Transportation System

- The potential for Disrupted Emergency Service Vehicle Responses
- The potential for Stranded Motorists
- The potential for Disrupted School Bus and School Pickup Transportation

Not Related to the Transportation System

- The potential for an Attack at Mass Gatherings
- The potential for Communication Disruptions on Cell Phones due to a Sudden Spike in Data Usage
- The potential for Issues at Mass Gatherings (Fights, Overdoses, Crowd Control, etc.)
- The potential for Sun Blindness Issues, Heat Exhaustion, and Non-Transportation Accidents/Incidents requiring Medical Assistance
- The potential for Increased 911 Calls due to individuals unaware of the Eclipse
• The potential for Increased Boat and Water Accidents due to Eclipse viewing on water bodies
• The potential for Airspace Issues due to Increase of Drone and Private Aircraft usage
• The potential for Solar Energy Devices to be Briefly Impacted

2.2 Planning Considerations:

Planning Considerations have been established as foundational information sets that need to be known by all emergency partners prior to the Eclipse event on August 21st. The five primary planning considerations are Eclipse Timing, Increase in Visitors & Gatherings, Primary Concern Factor for Total & Partial Eclipse Areas, Transportation Choke Points, and Domestic Attacks & Medical Emergencies.

A. Eclipse Timing

The following chart provides eclipse timing information for consideration on August 21st. For additionally timing information by locations please see Attachment 1 - Solar Eclipse Timeline.

<table>
<thead>
<tr>
<th>Type of Eclipse</th>
<th>Starting Time</th>
<th>Ending Time</th>
<th>Total Duration</th>
</tr>
</thead>
<tbody>
<tr>
<td>Partial Eclipse</td>
<td>11:52am (Central)</td>
<td>4:00pm (Eastern)</td>
<td>3 hours &amp; 8 mins</td>
</tr>
<tr>
<td>Total Eclipse</td>
<td>1:25pm (Central)</td>
<td>2:36pm (Eastern)</td>
<td>11 mins</td>
</tr>
</tbody>
</table>

Source: TEMA Planning Branch

B. Increase in Visitors & Gatherings

Areas within the forty-four counties of the Path of Totality will draw a large increase in both visitors and mass gathering events.

Michael Zeiler with Great American Eclipse created a computer model that estimates between 360,000 to 1,440,000 visitors could potentially travel to Tennessee's Path of Totality counties on August 21st. This model utilized factors such as traffic, highway drive times, weather, and other factors to analyze where persons in the
U.S. would most likely travel to view the eclipse. The diagram below provides additional information.

**Diagram 3: Estimated Visitation on Eclipse Day**

On August 21, 2017, a total solar eclipse crosses the United States from Oregon to South Carolina. The closest destinations for the contiguous United States are summarized, as well as high and low estimates for how many people will travel to the path of totality. The methodology for our estimates is summarized at [www.GreatAmericanEclipse.com/Statistics](http://www.GreatAmericanEclipse.com/Statistics).

12.25 million people live inside the path of totality. We estimate that between 1.85 million people and 7.4 million will visit the path of totality on eclipse day.

The lines show the quickest drive path from population centers to the path of totality. Drive lines to destinations are color coded by state of destination. The blue circles inside the path of totality are the destinations.

### Total population closest to the path of totality by destination state

- **Oregon**: 37,200,000
- **Idaho**: 1,400,000
- **Wyoming**: 1,200,000
- **Nebraska**: 120,000
- **Kansas**: 21,200,000
- **Missouri**: 9,400,000
- **Illinois**: 6,200,000
- **Kentucky**: 6,050,000
- **Tennessee**: 4,100,000
- **North Carolina**: 1,700,000
- **Georgia**: 100,000
- **South Carolina**: 51,000

### Estimated visitation to each state in the path of totality on eclipse day

Visitation estimates do not include the 12 million people living in the path of totality.

- **Oregon**: High 450,000
- **Idaho**: Low 90,000
- **Wyoming**: High 182,000, Low 46,000
- **Nebraska**: High 1,790,000, Low 377,000
- **Kansas**: High 25,000
- **Missouri**: High 372,000, Low 90,000
- **Illinois**: High 283,900
- **Kentucky**: High 42,800, Low 14,000
- **Tennessee**: High 2,188,000, Low 517,000
- **North Carolina**: High 51,000
- **Georgia**: High 13,000
- **South Carolina**: High 63,000
Counties in the Path of Totality should also plan on seeing an increase in mass gathering events on August 21. For the best available information on what cities and counties will be having eclipse mass gathering events please see the map below and the listing in Attachment 5- 2017 Solar Eclipse Known Events.

Map 7: Locations of Eclipse Mass Gathering Events identified by TEMA thus far

C. Primary Concern Factor for Total & Partial Eclipse Areas

The primary concern factor for the forty-four counties in the Total eclipse viewing area is the significant increase in visitors and mass gathering events. This increase could strengthen the possibility of primary and/or associated threats occurring.

The primary concern factor for the fifty-one counties in the Partial eclipse viewing area is the lack of awareness of the eclipse. Until recently there has been misunderstanding in how incredible the partial eclipse will also be for Tennessee counties with a 93-99.9 obscuration percentage. News media outlets have primarily only focused on the Total eclipse viewing counties and not the Partial eclipse viewing counties. When the sky starts getting darker in Partial eclipse viewing counties unformed citizens will be more likely to make emergency calls and sudden
movements or stops in vehicles. This could strengthen the possibility of primary and/or associated threats occurring.

D. Transportation Choke Points

With the primary identified threat being the potential for major disruptions and life-threatening accidents on our transportation systems, it is important to make considerations on where potential transportation choke points (e.g. bottlenecks) may occur.

The Planning Team considers viewing the relation of park spaces to highways as one potential method for determining choke points since many people will be at parks viewing the event and will then likely leave at once when the total eclipse is over. The following map identifies local, state, & federal parks and rest stops & welcome centers within a 5-mile radius of the highways routes within the Path of Totality.

Map 8: Location of Parks & Rest Stops within 5 miles of Highway Routes in the Path of Totality

Source: TEMA Planning Branch
The Planning Team also considers viewing the high volume highway points on Interstate 65 and Interstate 75 as potential choke point data. The diagram created by Michael Zeiler of *Great American Eclipse* demonstrates this below.

**Diagram 4: High Volume Highway Points on Eclipse Day**

![Diagram showing high volume highway points on Eclipse Day](source: Michael Zeiler, Great American Eclipse)

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**E. Domestic Attacks & Medical Emergencies**

Mass gatherings for the solar eclipse have the potential to be soft-targets for domestic attackers because of their public accessibility and limited security protocols. Nashville, Tennessee is the largest city entirely in the Path of Totality and while the intelligence community has not identified any credible threats, it is still important for citizens, event organizers, and law enforcement personnel to stay alert on August 21st. Below are some recent examples of opportunistic attacks as references.

- **28 November 2016**: Ohio State University attack using a passenger vehicle to drive into pedestrians, followed by a butcher knife attack on bystanders and those rendering aid once the vehicle stopped.
In addition to a potential attack, an array of various medical emergencies could arise during solar eclipse events.

One potential concern is the occurrence of sun blindness. Citizens are urged to not stare directly into the sun without certified eclipse shades. Regular sunglasses will not protect your eyes when viewing an eclipse. Exposure of the retina to intense visible light causes damage to its light-sensitive rod and cone cells. The light triggers a series of complex chemical reactions within the cells which damages their ability to respond to a visual stimulus, and in extreme cases, can destroy them. The result is a loss of visual function, which may be either temporary or permanent depending on the severity of the damage. The danger to vision is significant because photic retinal injuries occur without any feeling of pain (there are no pain receptors in the retina), and the visual effects do not occur for at least several hours after the damage is done.

The only time that the Sun can be viewed safely with the naked eye is during a total eclipse, when the Moon completely covers the disk of the Sun. Even when 99% of the Sun's surface is obscured during the partial phases of a solar eclipse, the remaining crescent Sun is still intense enough to cause a retinal burn.

Another potential concern is an influx of heat exhaustion cases due to tourists and citizens not being fully prepared to deal with a hot summer day or due to individuals being stranded on highways without gasoline in a worst case scenario. Citizens are encouraged to hydrate throughout the day, to seek shade occasionally, to use sunscreen, and to bring extra water with them.

All medical emergencies could be heightened if highway and road systems are backed up with traffic, thus reducing the speed in which emergency medical service vehicles can transport patients. This is one of the greatest concerns across the State among partner agencies and local governments.
2.3 Planning Assumptions:

After planning considerations are recognized it is equally important to review planning assumptions. The following planning assumptions have been assembled by the Planning Team.

- Effective communications across all stakeholder agencies will allow for the coordination and deconfliction of requests for limited resources.
- Local mutual aid within the area may be unavailable as resources are committed to numerous local events simultaneously.
- Traffic impact throughout the affected areas will increase as the totality approaches and then again as the visitors depart the area.
- Large viewing crowds will necessitate traffic controls and patrolling of major roadways that will impact local communities and commerce.
- A major incident may occur at any time. In many cases dissemination of warning to the public, through TDOT message boards may be possible; however, some emergency situations occur with little or no warning.
- Many motorists will be unaware of the eclipse, and not prepared to view or travel during it.
- Proper prevention and preparedness programs, such as public awareness of safe viewing methods, will prevent or reduce eclipse-related injuries.
- Some schools in the Path of Totality will close for the day of the Eclipse whereas others will not. Bus schedules must be monitored and observed.
- Medical emergencies may occur across numerous sites simultaneously requiring outside medical transportation assets to be requested.
Chapter 3 – Concept of Operations

3.1 General:

This chapter defines key roles and responsibilities that will need to be addressed during the August 21\textsuperscript{st} solar eclipse event amongst tasked agencies. These roles and responsibilities are an extension of the roles and responsibilities listed in the Tennessee Emergency Management Plan (TEMP); therefore the 2017 Solar Eclipse Coordination Plan should always be used in conjunction with the TEMP.

This chapter will not address all roles and responsibilities for tasked agencies. It will only address key roles and responsibilities identified by the Planning Team. All tasked agencies should be prepared to fulfill roles and responsibilities outside of what is addressed in this plan if warranted.

Additionally this chapter will not address roles and responsibilities for all partners or stakeholders. Tasked agencies identified in this plan were selected to be profiled based on the critical roles and responsibilities they can serve during this specific event’s potential primary and associated threats. All agencies and stakeholders should be prepared to provide assistance to the State Emergency Operations Center (SEOC) if warranted, not just tasked agencies. Below is a listing of the tasked agencies profiled in chapter.

<table>
<thead>
<tr>
<th>TN Emergency Management Agency (TEMA)</th>
<th>TN Department of Transportation (TDOT)</th>
</tr>
</thead>
<tbody>
<tr>
<td>TN Department of Safety (THP/HLS)</td>
<td>TN Dept. of Env. &amp; Cons. (State Parks)</td>
</tr>
<tr>
<td>TN Department of Education</td>
<td>TN Department of Military (National Guard)</td>
</tr>
<tr>
<td>TN Department of Tourism</td>
<td>TN Department of Health</td>
</tr>
<tr>
<td>TN Wildlife Resources Agency (TWRA)</td>
<td>National Weather Service (NWS)</td>
</tr>
</tbody>
</table>

The following two sections will address roles and responsibilities for Essential Information Collection and Emergency Support Coordination.
3.2 Essential Information Collection- Roles & Responsibilities:

Essential Elements of Information (EEIs) are key pieces of information needed to help support decision-making before and during the solar eclipse event. Below are the identified EEIs to be tracked by tasked agencies. These information collection roles and responsibilities were agreed to by tasked agencies at the June 29, 2017 Solar Eclipse Planning Meeting hosted by TEMA. All tasked agencies should provide regular status updates on their assigned EEIs to the SEOC during the solar eclipse event.

- Status of Eclipse Timing by Areas: TEMA
- Status of Weather Conditions: NWS
- Status of Highway Flow: TDOT & THP
- Status of Highway Accidents: TDOT & THP
- Status of Stranded Motorists: TDOT & THP
- Status of Mass Gathering Events (Parks, Festivals, Private Campground): State Parks, Tourism, & TEMA
- Status of Emergency Vehicle Flow: THP & Health
- Status of Lake & Waterway Incidents: TWRA
- Status of Local Resource Requests: TEMA
- Status of School Closures & Bus Transportation: Education

3.3 Emergency Support Coordination- Roles & Responsibilities:

This section defines core roles and responsibilities for emergency support that will need to be coordinated during the August 21st solar eclipse event amongst tasked agencies. These roles and responsibilities are an extension of the roles and responsibilities listed in the Tennessee Emergency Management Plan (TEMP); therefore the 2017 Solar Eclipse Coordination Plan should always be used in conjunction with the TEMP. Additionally these roles and responsibilities will be amended based on lessons learned on the July 26, 2017 Solar Eclipse Tabletop Exercise.
**TN Emergency Management Agency (TEMA)**

- Coordinate staffing for the State Emergency Operations Center (SEOC) and adjust activation levels as needed during the eclipse.
- Pre-identify priorities, specific threats, planning considerations, essential information requirements, and key public safety partners needed before and during the eclipse.
- Host eclipse planning meetings and webinars with public safety partners.
- Develop and disseminate the *2017 Solar Eclipse Coordination Plan*.
- Develop and host the *2017 Solar Eclipse Tabletop Exercise*.
- Create mapping products to enhance situational awareness among public safety partners.
- Identify key unified messages to be distributed statewide regarding the eclipse.
- Coordinate and communicate with local governments about local threats, needs, and actions both before and during the eclipse.
- Pre-position TEMA District Coordinators at key locations to provide coordination assistance.
- Support the fulfillment of resource requests through the SEOC Mission Coordination Center (MCC) network.

**TN Department of Safety (THP)**

- Ensure additional personnel are on standby during the eclipse due to the increased likelihood of accidents, stranded motorists and traffic clearing issues.
  
  *(Approximately 200 troopers will be available per THP)*

- Pre-position patrol vehicles on highways within the eclipse's Path of Totality.
  
  *(Approximately every 5 miles a patrol vehicle in Path of Totality per THP)*

- Provide assistance with roadway closures as requested.
- Provide law enforcement assistance to local jurisdictions as requested.
- Conduct wellness checks on stranded motorists if necessary.
- Coordinate the development of traffic control plans for the eclipse.
- Provide a representative to act as the Emergency Services Coordinator (ESC) in the SEOC during the eclipse and designated point-of-contacts.
TN Department of Transportation (TDOT)

- Pre-stage TDOT Help Trucks, TDOT Queue Trucks, and other personnel/equipment to provide traffic and incident support before, during, and after the eclipse.
- Manage eclipse awareness and alert messages on TDOT safety signs and message boards.
- Disseminate highway updates during the eclipse on Tennessee 511.
- Limit lane closures and construction projects during the eclipse.
- Monitor TDOT highway cameras and highway movement during the eclipse and disseminate essential information to public safety partners.
- Coordinate the movement and support of transportation resources.
- Conduct wellness checks on stranded motorists if necessary.
- Coordinate the development of traffic control plans for the eclipse.
- Provide a representative to act as the Emergency Services Coordinator (ESC) in the SEOC during the eclipse and designated point-of-contacts.

TN Department of Military (National Guard)

- Pre-stage 2 black hawk helicopters and 2 medevac helicopter in Nashville.
- Place the 45th CST as available for hazardous material response.
- Place a Quick Reaction Force on standby.
- Provide manpower and equipment to support traffic control operations if necessary.
- Provide security capabilities if necessary to support ESF-13 law enforcement within the scope of state and federal policy.
- Provide a representative to act as the Emergency Services Coordinator (ESC) in the SEOC during the eclipse.

TN Department of Tourism

- Disseminate information about the eclipse on the tnvacation.com website and at highway welcome centers.
- Provide outreach to private campgrounds and festival events before and during the eclipse.
- Provide a representative to act as the Emergency Services Coordinator (ESC) in the SEOC during the eclipse.
TN Wildlife Resources Agency (TWRA)

- Provide emergency assistance and law enforcement capabilities on Tennessee lakes and rivers during the eclipse.
- Support traffic control operations if necessary.
- Provide lakes and rivers water enforcement safety operations in support of local authorities.
- Provide a representative to act as the Emergency Services Coordinator (ESC) in the SEOC during the eclipse.

TN Department of Environment & Conservation (State Parks)

- Provide emergency assistance and law enforcement capabilities at State Parks before and during the eclipse.
- Support traffic control operations into and out of State Parks.
- Coordinate security measures within State Parks for the eclipse.
- Support search & rescue operations if necessary.
- Provide a representative to act as the Emergency Services Coordinator (ESC) in the SEOC during the eclipse.

TN Department of Health

- Monitor and support the movement of ambulances and other emergency medical service vehicles during the eclipse.
- Disseminate health information about safe eclipse viewing practices to the public.
- Assess public health and medical needs before and during the eclipse.
- Provide medical care personnel and equipment if warranted.
- Provide a representative to act as the Emergency Services Coordinator (ESC) in the SEOC during the eclipse.
TN Department of Education

- Coordinate with school districts on school closure statuses before and during the eclipse.
- Coordinate with school districts on school bus transportation statuses before and during the eclipse.
- Develop and distribute a safety sheet for school districts about the eclipse.
- Provide a representative to act as the Emergency Services Coordinator (ESC) in the SEOC during the eclipse.

National Weather Service (NWS)

- Disseminate weather conditions statuses before, during, and after the eclipse.
Chapter 4 – References

4.1 Attachment Organization:

The following provides an overview of the five attachments to the 2017 Solar Eclipse Coordination Plan.

**Attachment 1: Solar Eclipse Timeline**

This attachment provides a chart showing by county and city the exact time the partial or total eclipse begins and ends on August 21st.

**Attachment 2: School Statuses on Eclipse Day**

This attachment provides an overview of school statuses on the day of the eclipse. This information is current as of July 17, 2017 and many schools haven’t made a decision as of yet. This attachment will be updated as the state gets closer to the event.

**Attachment 3: Departmental Plan- TN Dept. of Transportation (TDOT)**

This attachment provides a copy of TDOT’s Eclipse Plan. This plan identifies TDOT’s emergency actions, available resources, identified staging areas, and assigned point-of-contacts. Additionally TDOT Region 3 and TDOT Region 2 specific Eclipse Plans are also included in this attachment.

**Attachment 4: Departmental Plan- TN Dept. of Safety & Homeland Security**

This attachment provides a copy of THP’s Eclipse Plan. This plan identifies THP’s emergency actions, available resources, identified staging areas, and assigned point-of-contacts.

**Attachment 5: 2017 Solar Eclipse Known Events**

This attachment provides a chart identifying known mass gathering events on August 21st within Tennessee. This attachment will be updated as the state gets closer to the event.
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## Solar Eclipse Path Estimated Times

<table>
<thead>
<tr>
<th>TEMA Region</th>
<th>County</th>
<th>City</th>
<th>Eclipse Type</th>
<th>Duration Total Eclipse</th>
<th>Partial Eclipse Begins</th>
<th>Total Eclipse Begins</th>
<th>Total Eclipse Ends</th>
<th>Partial Eclipse Ends</th>
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<tbody>
<tr>
<td>West</td>
<td>Haywood</td>
<td>Brownsville</td>
<td>Partial</td>
<td>-</td>
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* Eastern Standard Time

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Anticipated Public School Closures for Eclipse

current as of 7/17/17

Legend
TN Counties Status
School
- Closed
- Closing Early
- Open
- Undecided and/or Unannounced
Incident Action Plan:
Planned Special Event:
2017 Solar Eclipse
for
The State of Tennessee
Department of Transportation

August 18 – 21, 2017
I. Situation

A total solar eclipse will occur on Monday, August 21, 2017. The event has been described as the "Great American Eclipse" as it will be visible in totality only within a band across the entire contiguous United States.

It is estimated that the centerline in Tennessee is the closest destination for 55 million Americans. We further estimate that between 360,000 and 1,440,000 people will travel to Tennessee on eclipse day.

A. Intent.

Traveler information can provide event patrons and other transportation system users with current roadway information while traveling on Tennessee roadways. Resources commonly used to disseminate traveler information include, Dynamic Message Signs, Portable Message Boards, HAR, 511, TDOT web site and the media (local and social).

1. The deployed force from TDOT will be the Regional HELP units.
2. Supporting their efforts will be:
   a. The TDOT Emergency Service Coordinators
   b. The Regional Traffic Management Centers (TMC)
   c. Regional field maintenance operations
   d. Regional Incident Management
   e. Community Relations/Communications Division

II. Objective

TDOT will provide support associated with the 2017 Solar Eclipse primarily through traffic control and deployment of limited resources as needed.

III. Execution

A. Intent. The basic operation will be patrols on predetermined interstate and state routes with HELP units, supported by TDOT operations resources, TDOT Traffic Operations Division and Communications Relations Division.

B. Concept of the Operations. TDOT will operate HELP and TMCs on regular schedules through the Eclipse period with additional resources deployed as required.

C. Tasks

1. HQ provide Dynamic Message Sign message formats, Highway Advisory Radio broadcast message format, 511 public announcements, media releases.
2. **Region 1 (Knoxville)** plans to extend the HELP unit routes down I-75 closer into the prime viewing area and overlap HELP units to increase coverage when required.

3. **Region 2 (Chattanooga)** will have 6 additional HELP working August 21st, with a primary focus on the I-75 MCMINN co area which is a primary viewpoint. We will also send 2 units to I40 to assist Cookeville Dist. THP with traffic on I-40.

4. **Region 3 (Nashville)**, HELP units will maintain regular routes during the eclipse in Davidson, Williamson, and Rutherford counties. Staging additional HELP units on various interstate ramps outside of HELP coverage areas to provide extra response as needed during eclipse totality. Mobile cameras will be used in expected high impact areas to monitor traffic that is outside of the SMARTWAY infrastructure. TDOT maintenance will also be staged for queue protection and traffic control.

5. **Region 4 (Memphis)** will continue normal operation and provide up to 10 additional HELP units to Region 3 on August 21st if needed. 3 HELP units staged on I-40 at MM 126 to assist Region 3.

**D. Coordinating Instructions.**

1. All TDOT personnel assigned to the event are NIMS compliant, and as such, will use NIMS procedures when required.

2. Requests from or contact with news media (should be directed to TDOT’s Community Relations Division HQ or TDOT’s Regional CRO).

3. DMS and HAR messages for the Eclipse will be provided by Traffic operations Division.

4. Incident management messages have priority over Eclipse messages.

5. Direct Coordination with TEMA, THP and other safety and transportation agencies may be required.
E. Tennessee 511/DMS/HAR Deployment 08/14/2017 - 08/21/2017

Stage 1:

511/HAR
Thank you for visiting TN and we hope you enjoy the 2017 Solar Eclipse. The Tennessee Department of Transportation would like to advise motorists that it is illegal to park on the shoulders of the interstates and state highways for any reason other than an emergency. WATCHING THE SOLAR ECLIPSE IS NOT CONSIDERED AN EMERGENCY. Parking on the shoulder creates a crash hazard for you and other vehicles.

Motorists may be advised that vehicles parked on the shoulder of interstates or state highways could be towed or ticketed.

Motorists can call 511 from any mobile or land-line phone for traffic updates. It is recommended to call before entering the Eclipse as cell phone usage may be sporadic due to possible large call volumes. Motorists can also visit the TDOT website at www.tn.gov/tdot to find information.

DMS/PVMS 0900-1500

| SOLAR ECLIPSE |
| AUGUST 21ST |
| PLAN AHEAD |

Phase 1

| SOLAR ECLIPSE |
| AUGUST 21ST |
| HEAVY TRAFFIC |

Phase 2

TMC monitoring and reporting
Stage 2:

DMS/PVMS message change  
08/21/2017

0900 – End of eclipse

Phase 1

NO PARKING
ON SHOULDERS
OR RAMPS

Phase 2

NO PARKING
DURING
ECLIPSE

Continue 511/HAR message

Regional deployment of tasks (C) when required.

TMC monitoring and reporting.

Stage 3: Event traffic dissipates 15:00 – 2100 August 21st.

511/HAR
Thank you for visiting TN and we hope you enjoyed the 2017 Solar Eclipse. There may be some delays that happen as event patrons leave the area. Stay alert and use caution when travelling through this area for the next several hours for stopped or heavy traffic. Please wear your seatbelt.

Please enjoy your time here in Tennessee and be safe.

We now return you to our Main Menu.

DMS

BUCKLE UP
EYES ON THE ROAD
SLOW DOWN
Stage 4: Standard HELP/TMC Operations Resume as traffic returns to normal.

IV. Service Support
   A. Administration
      1. **Safety.** Since the event is in August and the weather is typically warm and humid at that time of year, all personnel and supervisors should ensure appropriate clothing/protective gear is available and used and that plenty of drinking water is readily available.
      2. **Areas of Operation.** Appendix A. Regional HELP routes. Regional management can add or adjust routes as event requires.
      3. **Medical Support.** Medical support will be provided by local Emergency Medical Service (EMS).

B. Logistics
   1. **Standard logistics apply.**
   2. **Unforeseen needs.** Any resource shortfall or other unanticipated operational need may be worked as ICS.

V. Command/Signal
   A. Signal
      1. **Operational communications.**
         a. **Primary.** Primary means of communication among the HELP units, their supervisors and TMC dispatch will be TDOT-issued radios. All operators, supervisors and dispatchers will use their normal radio call signs.
         b. **Secondary.** Regional Standard Operations.
         c. **Interoperable.** All TDOT radios have frequencies programmed into them which enable them to talk to other agencies. Regional standard operations.

   2. **Administrative communications.**
      a. **Primary.** Primary means of communication will be via telephone.
      b. **Secondary.** Secondary communications will be via TDOT VHF radio.
      c. **Interoperable.** All TDOT radios have frequencies programmed into them which enable them to talk to other agencies and the operators are trained in their use. As directed.
POC(s)
HQ
a. Ray Hallavant (primary)  ray.hallavant@tn.gov  p.615.253.0039  
c.615.566.3970
b. Will Reid  Will.Reid@tn.gov  p.615.741.0784  
c.615.741.2331  c.  
615.714.8556
d. Alan Duram  Alan.Durham@tn.gov  p. 615.741.5616  c.615.533.4152

e. John Hall  john.hall@tn.gov  511 flood gates p. 615.253.0057  
c.615.533.7102

Region 1 Knoxville  TMC  615.594.3981
Region 2 Chattanooga  423.510.1168
Region 3 Nashville  615.350.3424
Region 4 Memphis  901.537.2988

B. Command
1. Standard TDOT Command or as required.
REGION 2 ECLIPSE PLAN

Director's Action Step: TDOT Region 2 will respond quickly to any interstate lane blockage before, during and after the Eclipse event on Monday, August 21, 2017.

Concept of Operation: R2 HELP trucks will maintain regular routes during the eclipse in Hamilton County. HELP will stage trucks on I-40 in Cumberland County. Region 2 will place additional HELP trucks on various interstate ramps outside of HELP coverage in order to provide extra response as needed throughout areas suggested as optimal eclipse observation. Mobile cameras will be utilized in high impact areas to monitor traffic outside of the SMARTWAY infrastructure. TDOT maintenance will assist providing queue protection and traffic control.

Total Assets Committed:
11 - HELP Trucks
4 - Region 2 HELP trucks patrolling regular routes in Hamilton County.
7 - Region 2 HELP trucks staged on interstate ramps in path of totality in McMinn and Cumberland Counties.
2 - Region 1 HELP trucks will be positioned at I-75 - MM 60.

Message Boards
4 - Fog Zone PVMS
9 - Maintenance Message Boards
3 - Incident Trailers

Mobile Cameras
1 trailer mounted camera

Maintenance Crews
Crews will be positioned on interstate ramps for queue protection and traffic control.
**Eclipse Staging Areas**

**Hamilton, Bradley, McMinn, Marion, Coffee, Cumberland and Putnam Counties**

**Hamilton County I-24**
- Exit to be determined - Maintenance and 2 message boards
- Exit 24 – Incident Trailer
- Exit 24 – HELP – 3 trucks

**Bradley & McMinn Counties I-75**
- Welcome Center - Message Board
- Scales - Camera Trailer
- Exit 49 - Maintenance
- Exit 33 - HELP
- Exit 33 - Maintenance
- Exit 42 - Maintenance
- Exit 49 – HELP

**Marion County I-24e**
- Exit 155 - Welcome Center – Incident Trailer
- Exit 135 - Maintenance with message board

**Coffee County I-24**
- Exit 97 - Region 3 will coordinate with Region 2 to provide area coverage as needed.
- Exit 117 - Maintenance and 2 message boards
- Exit 117 - Incident Trailer

**Cumberland and Putnam Counties I-40**
- Exit 287 - HELP
- Exit 287 - Maintenance
- Exit to be determined - Maintenance with 2 message boards
- Exit to be determined - Maintenance with 2 message boards and incident trailer

**Smith County Welcome Center** – HELP and 2 maintenance trucks with message boards. Region 3 will coordinate with Region 2 in this area.
Region 3 Eclipse Plan

Director’s intent: TDOT Region 3 intent is to respond quickly to any interstate lane blockage before, during, and after the eclipse event on August 21, 2017.

Concept of Operation: HELP trucks will maintain regular routes during the eclipse in Davidson, Williamson, and Rutherford counties. Region 3 will stage additional HELP trucks on various interstate ramps outside of HELP coverage in order to provide extra response as needed throughout areas in eclipse totality. Mobile cameras will be used in high impact areas to monitor traffic that is outside of the SMARTWAY infrastructure. TDOT maintenance will also be staged for queue protection and traffic control.

Total Assets Committed:

• 23 HELP Trucks
  o 10 Region 3 HELP trucks on regular routes in Davidson, Williamson, and Rutherford counties
  o 10 Region 3 HELP trucks staged on interstate ramps in path of totality in Sumner, Wilson, Montgomery, Robertson, and Smith counties
  o 3 Region 4 HELP trucks staged on I-40 at MM 126

• 12 Message Boards
  o 3 HELP PVMS
  o 9 Maintenance Message Boards

• 15 Maintenance Crews
  o Staged on interstate ramps for queue protection and traffic control

• 4 Incident Trailers

• Mobile Cameras
  o 1 SUV mounted camera
  o 1 trailer mounted camera
Additional Notes:

- ROC to activate on 8/21 at 8 AM.
- HAR message, 511 floodgate and DMS to activate at 8/21 6 AM to 6 PM.
- The Region will not permit any major construction activity in areas anticipating influx of people starting from Saturday AM, August 19, through Tuesday AM, August 22.
- All message board messages will be directed through HQ Traffic Operations. Portable message boards messages may be changed as needed if incidents occur.

Eclipse Staging Areas

**Davidson, Williamson, and Rutherford Counties will have 10 HELP trucks riding routes as normal.**

**Montgomery County I-24**
Exit 0 - Welcome Center – Incident Trailer
Exit 1 – Maintenance with message board
Exit 4 – HELP
Exit 8 – Maintenance/Incident Trailer
Exit 11 – HELP
Exit 11 – SUV camera

**Robertson and Bedford Counties I-24**
Exit 19 – Maintenance and 2 message boards
Exit 24 – Incident Trailer
Exit 24 – HELP – 2 trucks
Exit 97 – Region 3 will coordinate with Region 2 to cover the area as needed.

**Robertson County I-24**
Exit 19 – Maintenance and 2 message boards
Exit 24 – Incident Trailer
Exit 24 – HELP – 2 trucks
**Sumner and Robertson Counties I-65**
Welcome Center - Message Board
Scales – Camera Trailer
Exit 117 – Maintenance
Exit 112 – HELP
Exit 108- Maintenance
Exit 104 -Maintenance
Exit 98 – HELP

**Davidson and Sumner Counties SR 386**
Exit 2 – HELP
Exit 7 - Maintenance and message board
Exit 14 – Maintenance and message board

**Wilson and Smith Counties I-40**
Exit 226 - HELP
Exit 232 – Maintenance
Exit 239B – Maintenance with 2 message boards
Exit 258 – Maintenance with 2 message boards and incident trailer
Smith County Welcome Center – HELP and 2 maintenance trucks with message board. Region 3 will coordinate with Region 2 in this area.

**Wilson and Rutherford Counties – I-840**
Exit 55- Maintenance
Exit 72 – Maintenance with message board
TENNESSEE HIGHWAY PATROL

TOTAL ECLIPSE PLAN

August 21, 2017
Overview

A total solar eclipse will occur on Monday, August 21, 2017. The event has been described as the "Great American Eclipse" as it will be visible in totality only within a band across the entire contiguous United States.

It is estimated that the centerline in Tennessee is the closest destination for 55 million Americans. We further estimate that between 360,000 and 1,440,000 people will travel to Tennessee on eclipse day.
Departmental Goals

- Keep all affected interstate systems, U.S. routes and state routes flowing.
- Appropriately staff affected routes with sufficient personnel in order to immediately respond to crashes, assist stranded motorists and clear traffic related issues.
- Provide assistance to local agencies as needed.

Objectives

THP personnel will work with local law enforcement and other agencies in order to execute the goals outlined in this plan. TDOT will be requested to assist with any major traffic incident or roadway closure.

Execution

Nashville District: Captain Matt Perry (615) 969-2732
Lieutenant Kevin Smith (865) 206-6984
• Personnel will be assigned to 12-hour shifts on August 19th through August 21st (Saturday - Monday). There will be no day off granted on August 21st.
• Strike Team 3 will be working and available in order to deploy as necessary.
• Strike Teams 7 and 8 will be on stand-by to assist the Nashville District.
• 15 Administrative personnel will be used on August 21st

Cookeville District: Captain R.C. Christian (931) 644-1980

• Personnel will focus efforts on covering ingress and egress on U.S. and state routes.
• Shifts will be staggered at 6:00 AM and 9:00 AM to provide maximum personnel during peak hours.
• Strike Team 6 will be on stand-by August 19th through August 21st.
• Strike Team 1 will respond to the Cookeville District as necessary.
**Knoxville District:** Captain Jessie Brooks (865) 223-9369  
Lieutenant Michael Melhorn (865) 207-0087

- Personnel will work 12-hour shifts on August 21\textsuperscript{st}. Regular shift hours will be maintained on August 19\textsuperscript{th} and 20\textsuperscript{th}.
- Strike Team 1 personnel will be assigned areas of operation during this event and schedules will be modified for maximum coverage.
- Strike Team 5 will be on stand-by in the event that assistance is needed.

**Chattanooga District:** Captain Jeff Mosely (423) 326-4525  
Lieutenant Tim Spicer (423) 667-0775
• Shifts will be overlapped 2 hours before and 2 hours after the eclipse event on August 21st.

Additional Personnel

THP Overall POC       Captain Matt Perry (615) 969-2732
Knoxville Strike Team Lieutenant Kim Ogle (865) 223-3952
Fall Branch Strike Team Lieutenant Jarrett Ramsey (423) 341-3304
Cookeville Strike Team Lieutenant Reaker Bass (931) 261-9477
Chattanooga Strike Team Lieutenant Patrick Turner (931) 279-1057
Nashville Strike Team Lieutenant Kevin Smith (865) 206-6984
Lawrenceburg Strike Team Lieutenant Michael Edwards (615) 418-1040
Jackson Strike Team   Lieutenant Ricky Bratton (615) 719-3769
THP TEMA ESC          Sergeant Larry Hitchcock (615) 347-7539
THP PIO               Lieutenant Bill Miller (615) 517-9096
THP POC Dispatch      Lieutenant Tonya Hunt (615) 969-7143
THP POC TMC           Lieutenant Travis Plotzer (615) 815-6494
2017 SOLAR ECLIPSE

KNOWN EVENTS

The Table below identifies mass gathering events known as of the writing of this plan. Additional details, including latitude and longitude of each event, is maintained by TEMA's Operations and Field Services Division. This Table is not intended to be a comprehensive or exhaustive list, but serves as an example of the variety of eclipse-specific events planned across Tennessee.

Additional resources for events include, but are not limited to, the following websites which may be updated from time to time with additional information:


http://nationaleclipse.com/events.html
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