



EPRO STATE SECTOR BLACK SKY PLAYBOOK

Sector Steering Committee Reviewed on 11th
September 2017.

ABSTRACT

The EPRO State Sector Black Sky Playbook reflects the contributions of state leaders from emergency management, homeland security, and National Guard. This is the recommended framework for planning resilience investments, restoration planning and cross-sector coordination needed for long duration, multi-region power outages. This peer-reviewed document is designed as a resource for the states, addressing critical Black Sky resilience needs for issues through all phases including protection, prevention, response, recover and mitigation.

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V 2.5

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Role of the EPRO State Sector Black Sky Playbook

This Playbook is designed to continuously engage state sector members in an evolving framework for recommended guidelines to manage risks of long duration, multi-region power outages associated with emerging Black Sky hazards.

This Playbook will be consistently updated and reviewed using the EPRO State Sector Steering Committee process through consultation with state sector professionals and managers. It represents the consolidated recommendations of these state leaders for the unique challenges posed by wide area, long duration outages. It provides guidelines to help individual entities strengthen their own resilience measures, develop focused operational plans and assess external support needed to address these severe hazard scenarios.

Sector Background (V2)

The United States is comprised of the fifty states, the District of Columbia, 566 federally recognized tribes, and the six territories. For brevity, the use of the term state or states refers to any or all of the states, territories, and the District. Similarly, the term tribe or tribes refers to any or all the 566 tribes. There are many similarities within these entities in authorities, structure, and issues they face. At the same time, each state is unique in its organization, resources, priorities, and risks.

The states, territories, and tribes have an almost endless list of responsibilities and missions. These governments must organize as best suits their priorities, resources, demographics, socio-economic conditions, and even their geography. Each state manages or oversees fundamental government missions such as education, public safety, public health, commerce, emergency management and many more. Unlike the federal agencies with similar broad missions, states must create policies, often with federal guidelines or requirements, and carry them out on the front lines for its citizens. But in whatever organizational structure, they also work closely with many other governmental and nongovernmental organizations. They work with local governments (county, borough, parish, municipal, incorporated, unincorporated), tribes, other state agencies, federal agencies, private sector (nonprofit and for profit), volunteer organizations (faith based, community based, national, and international).

The initial focus for this handbook is on five vital state missions and individuals: the Governor or chief executive, the State Emergency Manager (EM), the Adjutant General (TAG) of the National Guard, the Homeland Security Advisor (HSA) and the State Public Health Director (PH). In nearly all states the Governor appoints the other individuals. However, in some states several of these functions reside in a single person or within a single cabinet level organization. In some states these are in separate organizations but are linked through governor's executive or administrative order. Some states place one or two of these functions on the Governor's staff.

The Governor is the chief executive officer of the state and the commander in chief of the National Guard in state active duty. While the Governor's day-to-day responsibilities and authorities vary significantly among the states, the emergency powers and authorities are surprisingly similar. The primary areas include the authority to waive regulatory practices, expend funds without immediate coordination with the legislature, control and distribution of emergency services (e.g. health and public safety) and commodities (e.g. water, energy, food, and communications).

The State Emergency Management Director is responsible for planning and carrying out effective response and recovery programs against all threats to the people of the state and their wellbeing. He or she coordinates with local jurisdictions, other state agencies, federal agencies, private sector, nongovernmental organizations, and the general public on the prevention, protection, mitigation, response, and recovery under the National Response Plan. Following a catastrophic event such as a Black Sky, the EM director also will be essential to the restoration of viable communities and economy.

The State Adjutant General commands the Air and Army National Guard for state missions. He or she ensures the training and readiness for all missions – from warfighting to support for civil authorities in disasters and emergencies. The National Guard is highly skilled in operating effectively in extreme conditions.

The Governor's Homeland Security Advisor coordinates with all entities contributing to the protection of the state, its people, communities, economy, and assets against all threats but primarily against terrorist or criminal attacks against the people and economy of the state. In many states, the Governor, the EM, and the Homeland Security responsibilities are in the same person and organization.

The Public Health Director promotes and protects, either through oversight or direct services, the health and well-being of the people and their communities. A central tenet of public health is the prevention of sickness or injury through education, regulation, and an emphasis on wellness at home, school, and the workplace.

These incumbents form the nucleus of a complex network within a state and between the several states. Through these officials every necessary participant for State Sector preparedness for a Black Sky event can be reached.

Each state also legislates the emergency authorities and responsibilities for the governor and often for the EM Director, TAG, HSA, PH Director. These may add significant scope, range, and assets to their normal peacetime missions.

Therefore, this playbook is adaptive rather than prescriptive. This playbook must remain relevant in consolidated organizations as well as distributed ones; during normal peacetime as well as in a catastrophic event.

This playbook will address how these primary state missions may engage with others as necessary to achieve the preparedness needed for a Black Sky event.

Sector Black Sky Environment (V2)

Each state faces a range of threats and hazards from nature, human action, and technology. But no two states face the same range, extent, duration or frequency of events. Thorough assessment of these factors significantly influences the priorities of the state, the allocation of resources, and the methods for planning, preparedness, and mitigation. Some states experience several disasters each year. Other states may enjoy years without a single disaster.

There are several types of disasters that may affect any community in any state at any time. These include epidemic and pandemic outbreaks, kinetic attacks, extreme weather, cyber-attacks, and other catastrophic events. Many of these events may cause or contribute to large scale Black Sky events.

Much of current planning for disaster response and recovery assumes a tangible boundary between damaged and undamaged areas, with aid and assistance flowing swiftly and reliably into the impacted areas. In a Black Sky event, there will be profound consequences outside the area of initial damage. The loss of electrical generation, transmission, or distribution will greatly reduce the ability for coordinated, effective assistance from governmental and nongovernmental organizations in other states. States may stand alone for days, weeks, or even months.

The greater the extent of the disaster, the greater the need for logistics and communications. Both need reliable power to provide effective aid. Any plan that relies on aid coming from outside will fail. Any plan that assumes reliable communications and transportation will fail.

Most response actions in disasters seek to stabilize conditions and ensure that matters are not getting worse, particularly where human suffering is present or imminent. The environment of a Black Sky event will challenge the state leadership with countless concurrent demands and decisions that seldom come into play during more common disasters. There will be great pressure to act swiftly to preserve the public's confidence in leadership.

Most recovery actions in disasters focus on eligible applicants under the Federal Stafford Act and its equivalent state laws and programs. The assumption is that all other infrastructure will be insured and, therefore, rebuilt without government assistance or coordination. The Black Sky event will shake these assumptions. A state may win the battle for traditional recovery but will lose the war for pragmatic restoration.

The effectiveness of catastrophic response, recovery, and restoration depends on the partnerships, plans, and preparedness accomplished in peacetime. But these must focus on mutually beneficial doctrine, policies, planning, and readiness for an event beyond experience, expectation, or current capabilities.

Sector Model Overview

The model for the State Sector is based on informed, distributed decision making. No one person has or will have total authority; no one organization will have all the needed assets, commodities, or capabilities. Even if an executive has authority, he or she may not have the ability to carry out the decisions without the cooperation and partnership of leaders from private sector and non-governmental organizations.

The model is based on partnerships – between governments, between corporations, between leaders. It acknowledges the extreme value that planning and practice in peacetime will serve the enormous public need during the event.

The State Sector model is based on executing coordinated plans within varied organizational designs. All states have the same or similar responsibilities and authorities but no two states are organized in the same way. This model assumes that each state will have or create a system of collaboration and cooperation among its agencies consistent with its laws and abilities.

Many sports with defined durations have a set of plays to use towards the game's end. These plays are known by all players and no coordination is needed for their execution. In football this is known as the "two minute drill".

This model seeks to develop a similar concept but move the “two-minute drill” from the end to the beginning; and to substitute for the plays the set of decisions that must be made by many sectors in the absence of effective communications.

[Sector Model Graphic \(V2\)](#)

Version 1.0 high level graphical model of your sector. Lower level models can be developed to help document the complexity of the sector.

Sector Black Sky Strategic Mission Statement

The State Sector seeks to establish a collaborative network among all entities (governmental, non-governmental, and private sector) with assets, authorities, commodities, or capabilities to ensure the ability to respond, recover, and restore the affected region.

The State Sector seeks to:

- Create and sustain a posture of preparedness for states and their partners, enabling a swift, coordinated response, ensuring an immediate, comprehensive recovery and a restoration of the social and economic equilibrium of the community, region, state, and nation.
- Create and sustain strong partnership with and between public sector (local, regional, state, interstate, and federal), private sector, infrastructure owners, non governmental organizations, and the general public.
- Through this partnership, develop a collaborative planning process that will transform during the event into a problem solving process supporting all the partners in the common goal of restoring viable communities and the economy.

The peacetime effort relies on four elements of joint and collaborative planning, analysis, decisions, and resources among all agencies and organizations with assets, authorities, commodities, or capabilities:

1. Understand how things work;
2. Identify and assess what can go wrong;
3. Determine and assess the consequences; and
4. Decide what we do with this knowledge.

[Sector Black Sky Strategic Mission Priorities Matrix](#)

This playbook intends that the method of engagement during peacetime will well serve as the method during the Black Sky event. Therefore, this priorities matrix focuses on the development of a workable, enduring partnership that yields a model for engagement during the event.

Phase	Priority	Mission
Assess	1	Develop means for participants to fully understand interdependencies with other agencies and organizations and consequences of loss of essential services
Educate	2	Work to understand assumptions, priorities, limitations. Learn how each participant contributes to the success of others and to identify points of failure with potential of cascading and escalating consequences
Integrate	3	Jointly examine and deconflict assumptions, priorities, and plans.
Test and Implement	4	Test under realistic conditions for consistency of outcomes, discovery of unintended consequences.
Repeat and Sustain	5	Continue and expand the partnership. Adapt for changes in the built environment, technology, threats, and vulnerabilities.

Black Sky Decisions Overview

Preparing for the Black Sky event requires a different set of assumptions from those underlying “normal” disaster planning.. One example concerns the interplay between response and recovery. It is common to apply all assets to responding to the immediate consequences of a disaster. After the situation stabilized,, leadership then shifts assets and priorities towards recovery. Damages within the private sector are addressed almost entirely outside of governmental coordination.

A Black Sky event will require elected, appointed, and private sector leaders to consider many simultaneous actions that in a lesser disaster would be sequential. The catastrophic event may challenge the very social and economic viability of a community or region. All leaders must think beyond the moment and think of the needs and goals for future months and years. In the lesser disaster, the governmental priority is to restore public services and rebuild public infrastructure. There is coordination with private sector but not extensive. The Black Sky event will disrupt or destroy the existence or viability of communities and regions. To avoid the flight of the population and the collapse of the economy, all leaders and especially public leaders must decide what steps in what order will result in a viable community and economy. There is little likelihood that decisions can wait for perfect information or that every leader will act rationally.

Commented [Y1]: Specify here what you mean in practice by taking actions that address social and economic question. As it stands it's not clear what you are recommending

Black Sky Decisions Matrix

Each state must expect that there will be many demands on state resources and difficult questions of prioritizations. Citizens, local governments, and private sectorareall likely to expect the state to address their needs first.

The state, despite being pulled in many directions, must view the state as a collection of needs. It must set priorities according to constantly changing, uncertain or unverified information on status, needs, and

resources. It must allocate scarce resources to alleviate human suffering and concurrently restore critical lifelines to prevent the situation from worsening.

The state must lead in some areas and support in others. It may need to augment or supplement the private sector in the delivery of critical goods and provision of lifeline services. Even if a state does not own or operate electrical power generation, transmission, or transmission systems, it may be necessary to assist this infrastructure by clearing roads, transporting fuel, or providing security. Without state provision of these and related capabilities, successful restoration of power may be very difficult.

Phase	Priority	Decision
Preparedness		Development of a system of informed, distributed decision making that will serve planning and investments in normal conditions, rapid and effective coordination for response, recovery, and restoration.
Response		Prevent or alleviate human suffering. Stabilize the provision of basic life needs; food, water, energy, health, and shelter using vital support from transportation, communications, and finance.
Response		Reopen supply lines and prevent economic collapse
Recovery		Rebuild damaged or destroyed infrastructure.
Restoration		Restore a viable economy through retaining population, jobs, supply lines, and the social fabric of the state

Sector Black Sky Situational Awareness Overview

The state must plan for the flow of essential information necessary for setting priorities, allocating state resources, and assessing people’s needs. But it is likely to be extremely challenging to create information flows during the event. States and their partners must define and practice under normal condition the exchange of information and work to ensure these functions continue under even the most extreme conditions. They must plan for profound disruption of communications systems. The information to be conveyed centers on the following questions:

- Who: is affected by the event, available for duty, unaccounted?
- What: is working, damaged, destroyed?
- Where: are the damages?
- When: will information arrive; will response begin?
- Why: are the consequences the way they are?
- How: should state assets be deployed; services be restored; aid get to people?

Priority Information Requirements Matrix (V2/V2.5/V3)

Information in normal times	Source	Priority	Confidence Level
How are goods moved and services provided in the absence of any disruption?	Logisticians, analysts, planners, economists, and	1	High

Commented [Y2]: Suggested change – not all BS events involve war

	owners/operators of vital infrastructure		
What can go wrong?	Same as above along with risk analysts, governmental agencies	2	High
What are the consequences?	Same as above along with socio-economists	3	High
What do we do with this insight?	Same as above along with state, local, and industry leadership	4	High

Information in the Event	Source	Priority	Confidence Level
Status of the State What is working? What is damaged?	Self-reporting by agencies, infrastructure operators	1	Low if communications are impaired. Medium after comms functioning
Consequences Extent and intensity	Effects on people, essential systems (e.g. transportation, health, public safety)	2	Low if communications are impaired. Medium after comms functioning
Readiness of response forces	Emergency managers, National Guard	3	Low if communications are impaired. Medium after comms functioning
Needs of communities	Mayors, Emergency managers	4	Low if communications are impaired. Medium after comms functioning

Sector Initial Actions

The complexity of the State Sector requires that planning for Black Sky events begins long before a catastrophic event. The focus must be on building the alliance of public and private sectors, creating shared assumptions and integrated plans, vigorous and rigorous training and exercises, and informed, distributed decision making. This network developed under normal conditions will serve the state well in the event. The Sector initial actions mirror the priorities within the strategic missions.

The Governor needs information for decision and priorities. The EM Director needs to status of critical services and the needs of communities. The TAG needs to know the status of troops, units, equipment, and other assets. The HSA needs information to advise the Governor on vulnerabilities caused by the event. The PH Director needs information of ability of public and private health facilities to maintain appropriate levels of care.

Sector Initial Actions Matrix

Actions in Peacetime		
Priority	Initial Action	Desired/Required Outcome
1	Assess	Develop means for participants to fully understand interdependencies with other agencies and organizations
2	Educate	Work to understand assumptions, priorities, limitations. Learn how each contributes to the success of others and identify points of failure with potential for cascading and escalating consequences
3	Integrate	Jointly examine and deconflict assumptions, priorities, and plans.
4	Test and Implement	Test under realistic conditions for consistency of outcomes, discovery of unintended consequences.
5	Repeat and Sustain	Continue and expand the partnership. Adapt for changes in the built environment, technology, threats, and vulnerabilities.

Actions in the Event		
Priority	Initial Action	Desired/Required Outcome
1	Activate Emergency Plan	All responders deploy to designated missions.
2	Information	Determine status of people, essential systems, critical infrastructure, capabilities
3	Prioritize	Determine best allocation of limited resources
4	Open supply lines	Clear access for movement of goods and responders within the damaged areas and from outside sources
5	Stabilize damages	Disaster not degrading further

Internal Sector Requirements

Each state has an underlying responsibility to sustain the public’s confidence in decisions and actions by the state and its agencies. This responsibility rests with the governor or chief executive but relies upon support from all agencies. Once this confidence is lost, it is almost impossible to regain. The public will not put up with indecisiveness, ineffectiveness, inaction, or ineptness in a major crisis. The States must be prepared with well-practised plans, clear priorities, adaptive problem solving and effective measures.

Each of the primary elements of the State Sector requires the support, resources, and authorities of all the other elements. There are interdependencies within each state during normal times. These are greatly increased during any emergency and may be pushed to the breaking point during the Black Sky.

Internal Sector Requirements Matrix

Phase	Priority	Requirement
All	1	Alleviate human suffering
	2	Communicate with the public
	2	Restore movement of essential goods and provision of lifeline services
	3	Prevent flight of the population and the collapse of the economy
	4	Lay groundwork for restoration of viable communities and economy

External and Cross Sector Dependencies Overview

The States have great responsibilities, many defined authorities, and considerable assets, but no single person or entity within a state has all of these. A state may clear the road but the private sector has the rolling fleet and the goods that will use the road. Each state shares interdependencies with other states, federal agencies, private sector companies, and non-governmental organizations. Even inherently governmental functions, such as public safety, are provided by different agencies and levels of government and must be coordinated to ensure success.

The state must receive and assess the needs of communities, private sector, infrastructure owners and operators, and non-governmental organizations. In a Black Sky event, many if not all will request generators, the fuel to operate them, and replenishment though the duration of the outage. The state may have a cache of generators but must also find and deploy generators from other sources in sufficient numbers to stabilize the situation.

The state must attain, analyze, and prioritize requests from disparate organizations. Generators can enable gas stations to dispense their product, keep fire and police stations open, power emergency shelters and clinics. If the state cannot meet all requests, it must be prepared to prioritize and seek remedy for those with unmet needs.

Within its statutory authorities, states must consider regulatory waivers during the emergency

External and Cross Sector Requirements Matrix

Requirement Area	Priority	Requirement
Manpower		Unified, integrated operations from all participants. Sharing of talent across competing missions
Transportation		Alignment of all resources to allocate across competing missions
Backup Power		Coordinate and distribute available assets across competing missions
Security		Maintain public confidence in all leadership – public and private
Communications (Physical)		Deploy all assets for effectiveness across competing missions
Water		Distribute assets across competing communities and missions
Food		Distribute commodities across competing communities and missions

Sector Specialized Resource Requirements Overview

The states affected by the Black Sky event will have needs for very similar resources. But each will have a unique set of priorities based on population density, demographics, extent and duration of damage and outages. The universal specialized resource will be planners, analysts, and coordinators who must look across all communities, sectors, and consequences. Leaders and decision makers need people with these skills to understand and prioritize across all the sectors. For example, planning for restoration of an economic base must be compatible with restoration of public institutions such as schools and with public and private infrastructure. Communities must consider changes in zoning and land use as well as taxes and incentives.

Additionally, states must have or acquire people with specialized skills. These include shelter operations, emergency medicine, search and rescue, debris removal, communications, logistics..

The states must have or acquire commodities, goods, and services to augment, supplement, and possibly replace the disrupted or destroyed systems. These include food appropriate for all people (from infants to elders), water, electricity, waste removal, transportation, equipment maintenance, fuel and medicine.

Commented [Y3]: I'm not sure who these people are and what exactly they will realistically do in a BS event. Can you be more specific?

Sector Commodity Specific List Matrix

Phase	Commodity	Estimated Quantity	Potential Source
All	Emergency operations (medicine, transport, communications, power, public safety, security)	Variable	National Guard, Other States, Federal Agencies
	Sustainment operations (logisticians, planners, communications)	Variable	National Guard, Other States, Federal Agencies
	Consequence specific technicians (cyber, sheltering, health, civil order)	Variable	National Guard, Other States, Federal Agencies
	Recovery specialists, economists, general contractors	Variable	National Guard, Other States, Federal Agencies

Sector Black Sky Communications Overview Communications planning for a Black Sky event needs to consider both the channels of communications and their content. The channels are the technology, equipment, and systems enabling the movement of voice, visual, and data communication to and from essential elements of command, response, and planning. The content includes essential, relevant, and timely information necessary for situational awareness, coordination, decisions, and execution of plans.

Sector Communications Matrix (V2/V2.5/V3)

Phase	Communications Requirement	Coordinated Cross Sector Element
Immediate Response	Backbone of public safety and command and control elements – VHF, HF, satellite phones	
Sustained Response	Public information systems including radio, broadcast television, and internet	

Sector Black Sky Assessment Tool (s)

The process described above for situational awareness identifies areas for assessments of capabilities and vulnerabilities. Each relies on assessment of systems, their operations, efficiency, sophistication, and resilience. The process follows four questions:

1. How do things work?
2. What can go wrong?
3. What are the consequences?
4. What do we do with this knowledge?

These questions lead to assessments of supply lines moving essential goods, such as food, water, medical supplies and treatment, energy and related commodities. The essential support systems including transportation, communications, and finance also need to be assessed for their reliability.

Through this process, leaders within the State Sector and all the partners can make better informed decisions with full (or at least sufficient) understanding of the effects on other needs and decisions. Assessment is essential to understanding the complexities of events that may never have happened before. It is also the key element to adapting plans to the realities of the Black Sky event. Rigid adherence to a plan, no matter how well crafted, is harmful when conditions, consequences, and needs are constantly changing.

The assessment tool must aid in swift identification of a plan than helps or harms the progress needed throughout all the sectors.

Sector Black Sky Planning Requirements

The states face uncertain resources, rapidly changing technology, evolving business opportunities, and threats and hazards from nature, humans, and technology. Currently there is no reliable, comprehensive, national system or program for states to share plans and investments., A systematic, national evaluation of the resilience of infrastructure, operations, and systems would be of great value.. Sharing information and assessments on systems, structures, plans, and capabilities could lead to significant savings in resources, increases in effectiveness, and dramatic improvements in resilience of critical systems and services.

Sector Best Practices Matrix

Peacetime Best Practices		
Area of Operations	Recommendation	Expected Improvement
Education	Work with all partners to document supply lines and lifeline resilience	Understanding of partners' assumptions, priorities, and plans
Planning	Identify, deconflict, integrate existing plans	More effective and compatible plans with emphasis on unified, immediate actions
Integration	Expand effort to all sectors, all hazards, all risks	State wide coordinated systems with government, private sector, and non-governmental organizations
Continuous Assessment	Purposefully measure effectiveness of investments, adjust for effectiveness, stay ahead of evolving threats	Better investments by all partners

Best Practices in the Event		
Area of Operations	Recommendation	Expected Improvement
Situational Awareness	Partners know what information to send to whom without further coordination.	Information is “pushed” to those who need it rather than “pulled” from those who have it.
Logistics	Potential requesters know what will be available and who will need what	Incentive to solve problems through collaboration rather than complaints.
Communications	Share status, priorities, capabilities, plans, and problems with all partners	Better informed decisions and requests

Integrated and/or Shared Planning Actions

The states must focus on creation and sustainment of a realistic network enabling collaborative problem solving leading to informed, distributed decision making. This same network will serve as the foundation for the vital need to provide counsel to the executive in government, in industry, and all other organizations. The network should include state to state, state to community, states to federal, state to private sector, and state to non-governmental organizations. The network should focus on several stages of engagement: education on plans, assumptions, priorities, and capabilities; resolution of incompatible elements; integration and alignment; rigorous testing under realistic exercise conditions

Planning Actions Matrix

Response Area	Shared Planning Requirement/Interface Point	Cross-Sector(s) ID
Command and public communications	Interoperable communications, joint exercise and planning,	Federal, NGO
Integration of assets and resources	Full knowledge in peacetime and in the event of capabilities, needs, and other requirements	Federal, NGO, private sector
Problem solving enterprise	Process to collaboratively assess resource allocations, set priorities, achieve cross-sector coordination	Federal, NGO, Private sector

Sector Black Sky Resilience Considerations Overview

To achieve, sustain, or improve resilience, investments are key. The private sector needs reliable roads, bridges, tunnels, ports, airports, safe air space, and civil order even if these are primarily or exclusively governmental functions. The public sector needs jobs, goods, and a strong tax base even if these are mostly private sector accomplishments. The resilience investments should be compatible with all other sectors.

Resilience cannot be optimized through individual actions. It can be achieved through a network of coordinated, informed decisions made with knowledge of the needs of others.

Resilience Initiatives Matrix

Initiative Title	Initiative Description/Cost	Expect Outcome
Continuity of Operations	Ability to operate state functions under all conditions	No loss in public confidence in government
Continuity of Government	Ability to continue effective leadership of the state and all its agencies	No delay or disruption in essential decisions
Community Resilience	Ability for communities to rapidly restore an equilibrium following any event.	Communities anticipate consequences and set recovery priorities
Resilience Optimization	Investments to create, sustain, and enhance resilience made with full knowledge of the needs and decisions of all partners.	Each decision by any partners considers and enables the entire community to restore

Sector Black Sky Regulatory Impacts and Issues Overview

It is a responsibility of the state to regulate activities vital to public health and the public good. The manner of regulation varies significantly among the states based on their laws and needs. During a Black Sky event, many states may set aside temporarily some regulatory requirements in the interest of alleviating human suffering and rapidly restoring essential services. The states should evaluate this need. Regulatory processes also could incentivize building and sustaining resilience within the regulated industries... Strict adherence to the normal regulatory process could, in a Black Sky event, impede the swift actions needed to protect public and the economy.

Sector Regulatory Matrix

Area of Operations	Issue	Recommended Solution/Resolution
Emergency Waivers	No or inadequate authority to waive regulations during emergency	Work with regulated entities to address potential regulatory barriers to swift response

Sector Black Sky Essential Critical Infrastructure (MC) Overview

The States' goal is to swiftly restore critical commodities and services. The most essential of these are food, water, medical/health, energy, and shelter as well as the supporting functions of transportation, communications, and finance. Each requires infrastructure to create, move, or protect the services and commodities. For example, transportation infrastructure includes roads, bridges, tunnels, ports, rail, and airports. Each of these also relies on access, power, security, and available workforce. A state has a role in each of these either as an owner/operator, provider of emergency services, or regulator.

Sector Critical Infrastructure Matrix (V3/3.5/V4)

Element	Function
Energy	Fuel for movement and distribution of essential commodities. Generation, transmission, and distribution of electricity.
Water	Provision of safe water and removal/treatment of waste water.
Transportation	Movement of goods and services to alleviate suffering, stabilize the consequences to the public and economy, and facilitate sustained emergency operations.
Medical and Health	Serve the needs of disaster victims while preserving standard of care for non-disaster medical cases such as chronic or extended care.

Sector Black Sky Specialized Skill Training Requirements Overview During a Black Sky or catastrophic event states will require both generalized and specialized skills and positions. Many are similar to those required during normal operations but need to be implemented under extreme conditions and challenges. Agencies make extensive use of contracts with the private sector to accomplish projects, maintain public infrastructure, and deliver public services. While the missions will continue, the specific nature of the missions will focus on swift response and immediate recovery. The state must have people with the skills to supplement or replace the normal services disrupted by the event. These include sheltering, feeding, providing healthcare, public safety, portable power generation, replenishment of supplies, debris removal and management.

Sector Specialized Skill Training Requirements Matrix (V3/3.5/V4/V5)

Phase	Position/Skill	Training/Certification Requirement
Mitigation	Planners	TBD
Response	Emergency power generation	TBD
Response	Shelter operations	TBD
Recovery	City and land use planners	Similar to normal requirements

Annex A – Assessments

Sector Overall Resilience Assessment

The creation of the network for informed, distributed decision making is based on the following forms of assessment:

- Self-assessment of both internal and external factors leading to success.
- Assessment of and by partners in movement of goods and provision of services.
- Assessment of existing assumptions, plans, policies, and operation for efficacy under a black sky event
- Assessment of risk based not on organizational or geopolitical lines.
- Assessment of investments considered or made for effectiveness in reducing risk.

Annex B – Regulatory Issues Detail Statements

Issue Statement 1

During the Black Sky or other catastrophic event, states must be prepared to thoughtfully and selectively waive regulatory requirements to alleviate human suffering and swiftly respond to stabilize the consequences to public health and safety.

The governor should have statutory authority to waive appropriate regulations during an emergency based on criteria established under law. The declaration of emergency should state the specific regulations or classes of regulations being waived, the extenuating circumstances supporting the decision, and the duration for the decision.

- Resiliency Investment statement
- Plan Requirements
- Training Requirements
- Liability Statement/3rd Party Protection Issue
- Explicit requested legislative changes/Insurance/Assurance/3rd Party Indemnification

Annex C – Communications Requirements

Communications Requirement 1: Command and Control

- Internal/Planned Format/Path: Internal communications
- External/Planned Format/Path: VHF/UHF/Satellite
- Explicit Model
 - Who: State and local leadership, emergency managers, responders, public safety, National Guard
 - What: Coordination, command and control
 - When: At all times
 - Strategies (back up): These are the fail safe and last resort systems
 - Bandwidth requirement (actual and notional): TBD
 - Format: TBD
 - Priority: High

Communications Requirement 2: Distributed Coordination

- Internal/Planned Format/Path: External with all partners
- External/Planned Format/Path: VHF/UHF/Satellite
- Explicit Model
 - Who: State leadership, infrastructure owners/operators, Emergency managers, responders, public safety, National Guard, non-governmental organizations, other private sector
 - What: Coordination, situational awareness, information exchange, command and control
 - When: At all times
 - Strategies (back up): No backup for full communications capability
 - Bandwidth requirement (actual and notional): TBD
 - Format: TBD
 - Priority: High