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Sandia National Laboratories

Understanding Complexities in Emergency Management in Order to Mitigate Cascading Consequences

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U.S. DEPARTMENT OF ENERGY

NNSA National Nuclear Security Administration

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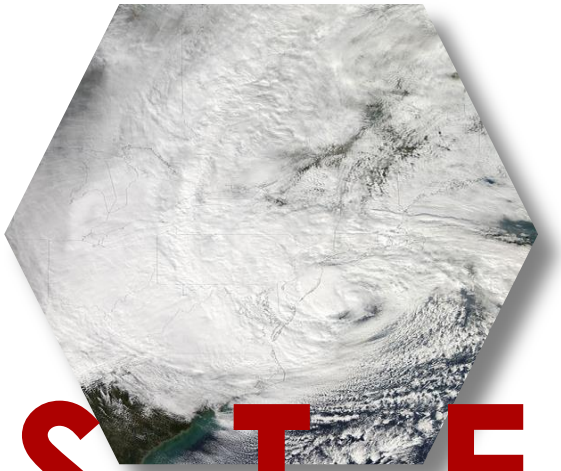
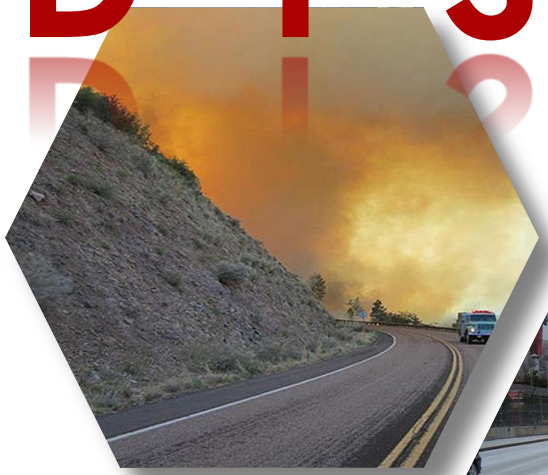
E01
SCOTT

DISASTERS



HURRICANE SANDY



ARIZONA WILDFIRES

ATLANTA SNOWSTORM

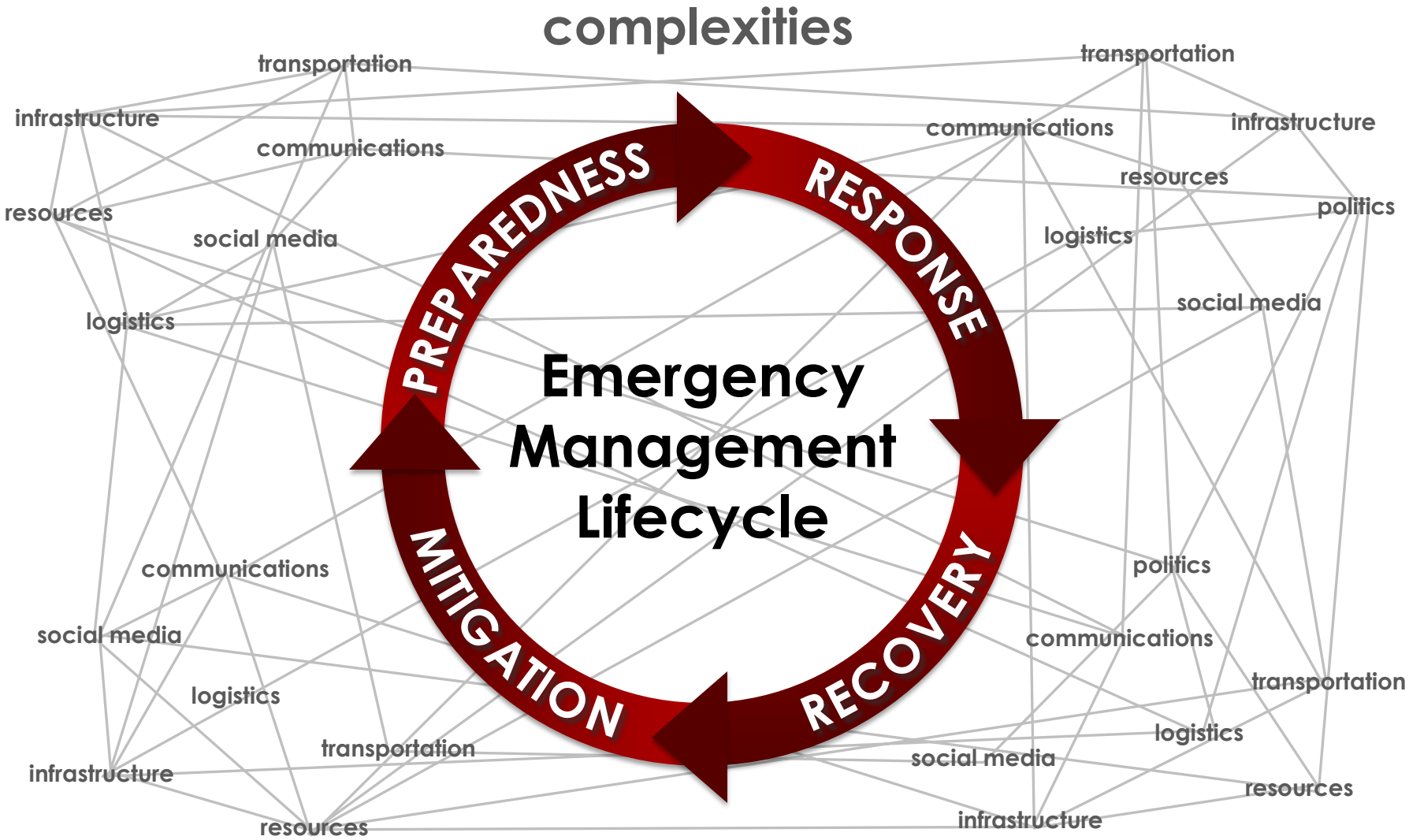
MIDWEST FLOODING

OKLAHOMA TORNADOS

Concept

PREPAREDNESS
RESPONSE
RECOVERY
MITIGATION
Emergency Management Lifecycle

Concept


complexities
transportation
infrastructure
communications
resources
social media
logistics
transportation
communications
infrastructure
resources
politics
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social media
PREPAREDNESS
RESPONSE
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Emergency Management Lifecycle
communications
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logistics
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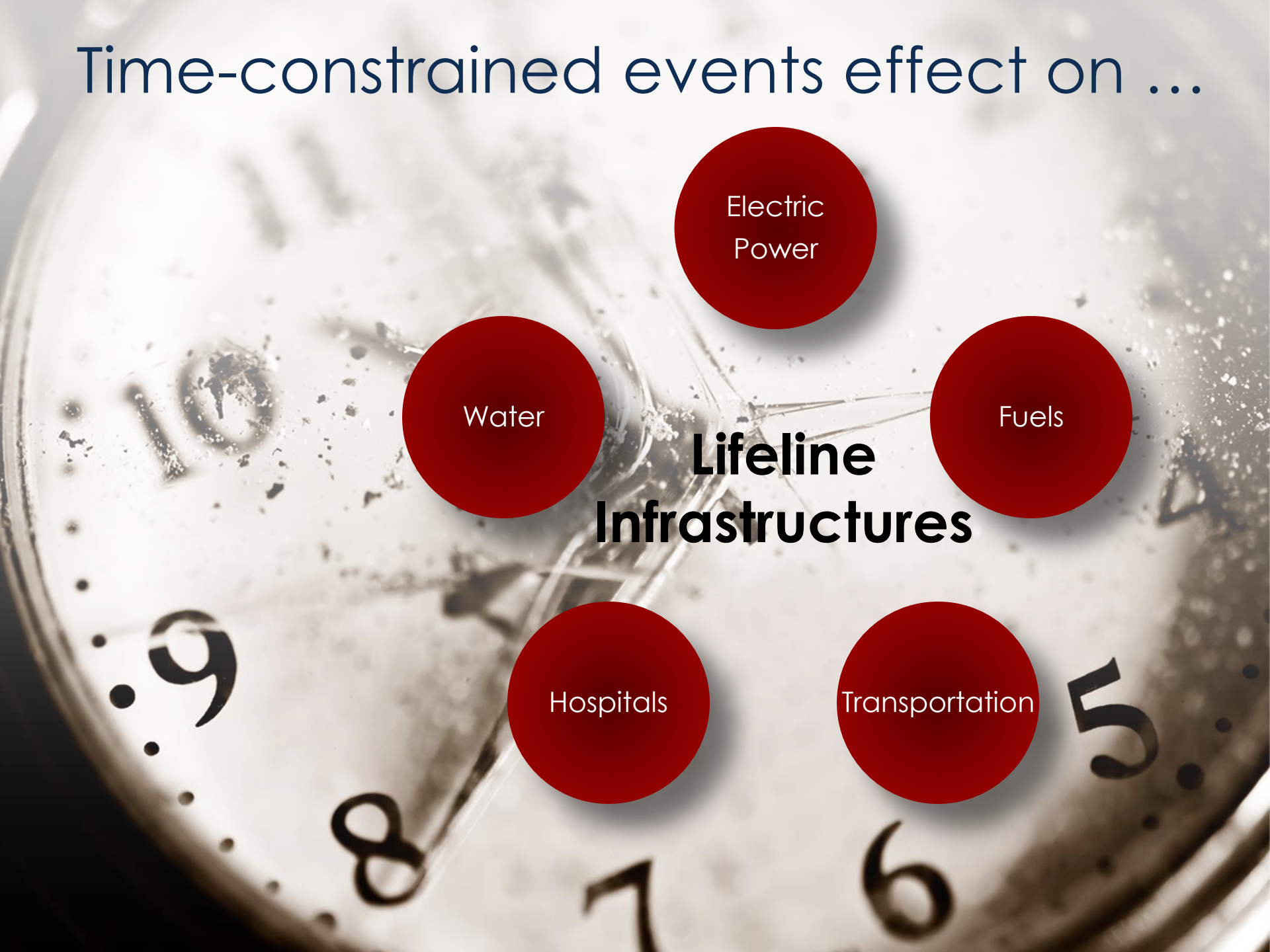
infrastructure
resources
politics
communications
transportation
logistics
social media
resources
infrastructure

Challenges

C O M P L E X s y s t e m

Time-constrained events effect on …



Improving the Emergency Management Software Tools

Response time faster with less cost

Proposal…

Bring

Software Developers, Analysts & Emergency Management Personnel

TOGETHER

for collaboration on needs for improvement.

Collaboration Topics

- Emergency Response Events
- Logistics
- Information Assurance
- Concerns of operations personnel
- Decisive and informed decision making
- Time constrained decision making

Summary

- S/W developers, analysts and emergency management personnel work together to find solutions than problems
- Include emergency responder's expertise/experience to provide a better picture of the problem/set of problems

The complexities of Emergency response events can be improved ...

"When we collaboratively apply systems engineering into emergency management."