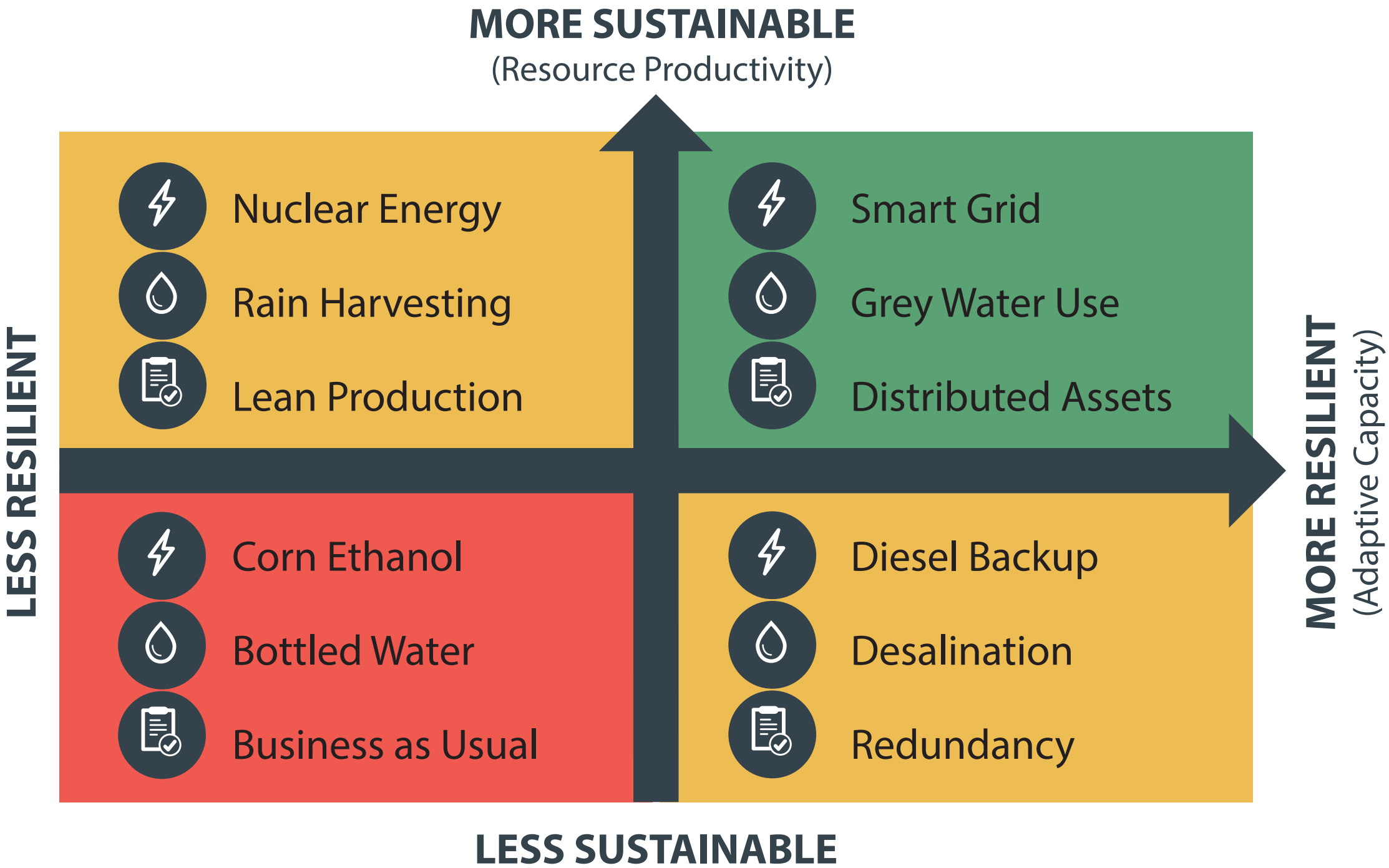
CITY OF FAYETTEVILLE ARKANSAS

UNIVERSITY OF ARKANSAS

2018 Climate Resilience Assessment

Sustainability VS Resilience

- **Sustainability**
  - Sustainable development: development that meets the needs of the present without compromising the ability of future generations to meet their own needs
- **Resilience**
  - Resilience: the ability of a system or community to to survive disruption and to anticipate, adapt, and flourish in the face of change
    - **Recover** from short-term disruptions
    - Adapt to long-term trends

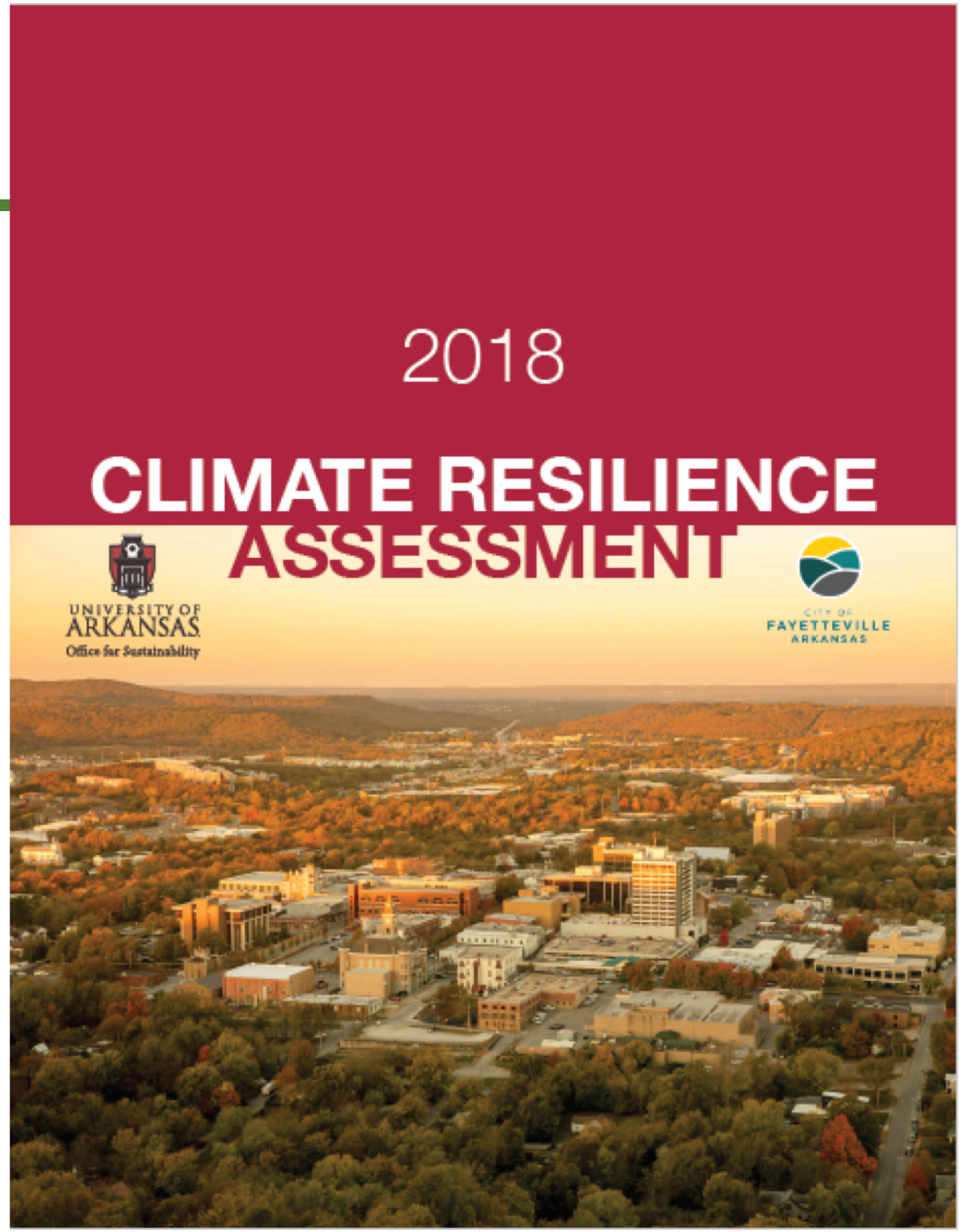

MORE SUSTAINABLE
(Resource Productivity)
LESS SUSTAINABLE
LESS RESILIENT
MORE RESILIENT
(Adaptive Capacity)
Nuclear Energy
Rain Harvesting
Lean Production
Smart Grid
Grey Water Use
Distributed Assets
Corn Ethanol
Bottled Water
Business as Usual
Diesel Backup
Desalination
Redundancy

Key Characteristics of Climate Resiliency

- Flexibility
  - Adapt as we understand more
- Inclusiveness
  - Like an ecosystem, everything is connected, and diversity is essential to a healthy ecosystem
  - Underrepresented populations likely need extra consideration
  - Partner with other communities and stakeholders
- Learning
  - Knowledge exchange
  - Using metrics to track progress

The Process

- Engagement
- **Assessment**
  - **Inventory**
  - **Prioritize**
- Planning
- Implementation
- Evaluation
- Iteration



What?

- **Collaborative Strategy** from the University of Arkansas Office for Sustainability and the City of Fayetteville
- Five **stakeholder meetings** aimed to identify the Northwest Arkansas region's vulnerabilities, strengths, and areas for improvement in terms of sustainability and community resilience
- A **survey** to identify the most significant strategies
- An **assessment report** to communicate the importance of climate resilience to stakeholders and community members

Why?

- **Resilience planning** develops systems and networks that can react to unexpected events
- **Inspire a culture** of resilient thinking within Fayetteville, beginning with collaboration from key stakeholders
- **Start conversations** that will allow the community to identify more stakeholders and move towards finding successful strategies

5 Domains

1. **Social**
   - Governance, community identity, engagement, and connectivity
2. **Health**
   - Health, wellness, and quality of life
3. **Natural**
   - Biodiversity, ecosystem health, and green spaces
4. **Physical**
   - Infrastructure, energy, stormwater management, transportation
5. **Economic**
   - Wage of living, tourism, local business health

Extreme Weather Scenarios

These scenarios were based on historic extreme climate data for Fayetteville, AR from 1892 to present.

- Heat Stress
- Drought
- Flooding

Strengths

- The key stakeholders identified aspects of the City of Fayetteville that make the city more resilient to the three extreme climate scenarios
- **The most significant strengths were:**
  - Land Conservation
  - Topography
  - Community
  - Beaver Lake

Vulnerabilities

- The discussion within the stakeholder meetings identified vulnerabilities within Fayetteville if no actions were taken to bolster city resilience.
- These vulnerabilities were drawn upon to construct narratives of what Fayetteville would be like in the face of Extreme Heat, Drought, or Extreme Precipitation.
- The most significant vulnerabilities were:
  - Water infrastructure damage potential
  - Water supply, water quality, single source
  - Recreation impacts
  - Political climate
  - Electrical distribution

Survey

- A survey was developed to select what the key stakeholders viewed as the **most significant strategies** that could be used to cultivate community resilience.
- Question topics included:
  - Water supply
  - Land use
  - Agriculture
  - Infrastructure
- Stakeholders evaluated and ranked proposed strategies

Identified Strategies for Increased Community Resilience

1. Improvement of **Land Conservation** and Protection Practices
   - Identify and implement Best Management Practices for affected areas
2. Implementation of **Stormwater Management** Practices
   - Install Low Impact Development Features which encourage stormwater capture
3. Development of a **Wildfire Prevention** Plan and Burn Ban Communication Strategy
   - Amplify community engagement
   - Encourage prescribed fires on publicly held lands to reduce future wildfire risk
4. Improvement of **Energy Conservation and Generation** Programs
   - Energy conservation incentives
   - Develop and deploy renewable energy generation facilities

Conclusions

- Started conversation regarding climate resilience
- Identified strategies to prepare Fayetteville for extreme weather conditions and ensure economic, natural, physical, health, and social resiliency within the community
- Climate Resilience Assessment Report

Looking Forward

- Identify more stakeholders
- Further develop actionable steps and implementation plan