Successful Disaster Recovery Using the Community Capitals Framework

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Breckenridge, MN – Flood recovery

- 2014 population 3,340.
- Red River, confluence of Otter Tail and Bois de Sioux Rivers at Wahpeton/Breckenridge.
- Spring flood of 1997; largest flood on record.
- Since then, major flooding occurred 10 times.
Breckenridge 1997 Flood Recovery

Mayor & City Officials

County Disaster Services director

CERT groups formed

Red Cross & Salvation Army

EM plans written

Breckenridge 1997 Flood Recovery

State and federal aid; grants

Good relations with legislators

Improvements to roads and infrastructure

Mayor, County, City Officials

Otter Tail River Diversion

Levees and flood walls

Pumps and water plant upgrades

York Manor and Park Manor renovated

New housing developments: Tangin, Gewalt, and Prairie View additions

Home repair

Mutual aid agreements; joint law enforcement

Collaborative relations with Wahpeton

Wilkin Co. Sheriffs pose formed

New City Hall

Newspaper, media

Breckenridge 1997 Flood Recovery

Grants and contributions from individuals, banks, businesses, foundations

Volunteerism and civic engagement

Emergence of local leaders

Service organizations active: projects, volunteers, contributions

Cleaner residential area; fewer dilapidated buildings

Lend-a-helping-hand organization

Decline in service organization membership

Breckenridge 1997 Flood Recovery

Landscaping and aesthetics
Breckenridge 1997 Flood Recovery

River and parks cleanup

Art - renovation

Featured artists: Fritz Scholder, Woody Keeble, Louise Erdrich, Shaun McCann

Clean, beautiful, green space by rivers

Parks expanded

Zoo landscaped

A "river culture"

Transition for culture

Helping neighbors to culture

Investing in community

Becoming an "arts community": murals, galleries, stores

More tribal connections

Breckenridge 1997 Flood Recovery

Some courthouse services temporarily relocated in a church

St. Francis Hospital and nursing home relocated

Public elementary school grades temporarily relocated to churches

Church, school, professions officials as leaders

Courthouse renovated

Public elementary school remodeled

St. Francis Hospital and nursing home demolished

Some businesses closed or moved away

Parking lots where businesses were

Decline in business

Tax base

Declining/stable population base

Joint United Way and Chamber of Commerce

Some business stayed

Breckenridge Port Authority

State and federal aid; grants
Number of Effect Topics, by Circle

<table>
<thead>
<tr>
<th>Circle</th>
<th>Initial recovery “triggers”</th>
<th>Intermediate recovery processes</th>
<th>Long-term impact</th>
<th>TOTAL</th>
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</thead>
<tbody>
<tr>
<td>Built Capital</td>
<td>Circle 1 2 3</td>
<td>Circle 2 5 2</td>
<td>Circle 3 2 4 2</td>
<td>6 22 24</td>
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<tr>
<td>Cultural Capital</td>
<td>2 4</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Financial Capital</td>
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<tr>
<td>Human Capital</td>
<td>2</td>
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<td>7</td>
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<tr>
<td>Natural Capital</td>
<td>2 3</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Political Capital</td>
<td>2 4 2</td>
<td></td>
<td></td>
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<tr>
<td>Social Capital</td>
<td>2 7 1</td>
<td></td>
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</tbody>
</table>

**Pilger, Nebraska**

- On June 16, 2014, twin tornadoes (EF-4) destroyed nearly three-fourths of this rural northeast Nebraska community.
- Population at that time 352
- [Omaha World Herald Damage Map](#)

**Social Capital**

- Volunteer hours equated to over $2 M in hours, machinery use, etc.
- Annual clean-up day and Arbor Day are still going on
- St. Peter’s has coffee 3 times a week
- The convenience store and community center are anticipated areas for people to gather
Heartland Center convened a series of town hall meetings designed to gather community input on Pilger's reinvention. Seventy people at the first visioning meeting and 150 attended the first town hall meeting in Wisner.

Task Forces created which initially included:
- Community Center (Natural)
- School/Pre-School (Built, Cultural)
- Sustainability/Trees (Natural)
- Bar/Restaurant/Coffee Shop (Built, Financial, Social)
- Recreation (Natural, Social)
- Communications (Built)
- Community Clean-Up (Built, Social)
- People Attraction/Branding (Social, Cultural, Financial)

Human Capital
- 212 people
- Reinvent Pilger helped create eight task forces that provided opportunities for volunteerism and leadership
- A lot of outside help (NEMA, Heartland Center for Leadership Development, Ferguson Development Resources, civic organizations, etc.)
- Clergy have had a strong role behind the scenes
- New resources and more people willing to help
- More knowledge/new knowledge
- Young people involved
- Book published by LaRayne Topp, Eighty-One Seconds: The Attack and Aftermath as Tornadoes Hit Pilger, Stanton, Wakefield and Wisner, Nebraska
- Statewide collaboration with Nebraska chapter of APA to update comprehensive plan

Political Capital
- New opportunities for leadership
- “Reinvent Pilger” process helped with creating a shared sense of vision
- Attendance at meetings is up
- Zoning Board
- Comprehensive plan being created with volunteer help from the Nebraska Chapter of the American Planning Association and the University of Nebraska-Lincoln College of Architecture
- The community had the ear of the legislature for some time
- Fewer volunteer firefighters
- 1 Village Board person moved
Built Capital
- Loss of 73 homes
- Debris pile clean up (cost of $1M)
- 16 new homes (Declusion of the price of these new homes, it will not take too many more to equal the tax loss of the 73 homes)
- New bank, village office convenience store, co-op
- New street signs, highway signage and street lights
- Library remains intact
- Safe rooms for new construction
- New and expanding businesses
- Loss of school
  - Community Center
    - Increased social capital
    - Educational programming
    - Support entrepreneurship

Natural Capital
- Trees being planted (275)
- Parks survived
  - Pool was able to stay open due to corporate funding
  - Playground and basketball court gone
- Opportunities for kayaking and tanking that will lead to increased traffic at the convenience store
- The RV park co-located in the village park added four new hook-ups for a total of 8
- Discussions among entrepreneurs about utilizing the neighboring Elkhorn River

Cultural Capital
- St. John’s are rebuilt
- A “Grand Reopening” on the two year anniversary of the storm
- Although the community center is not complete, several venues such as the school reunion have booked dates
- A lot of grand openings going on
- There is talk about other community-wide events
Financial Capital

- Midwest Bank was one of the first to state they would rebuild, completed June 2016
- Businesses rebuilt/expanded
  - GoJo Trucking
  - Lampan Tire and Towing
  - Oswald Farm Supply
- Coop followed suit and had bins in place by fall harvest
- Numerous donations
  - Private donation $25,000 to keep pool open
  - Federal Home Loan Bank of Topeka JOBS grant
  - $50,000 from the Nebraska Corn Board
  - Rotary Club of Nebraska donated $11,000 for new community center
  - $300,000 from USDA to fund the community center construction (October 2016)

Tracking Drought Perspectives: A Rural Case Study
Theresa Jedd, Deborah Bathke, Duane Gill, Bimal Paul, Nicole Wall, Tonya Bernadt, Jake Petr, Tony Mucia, Milan Wall

Why drought?
Drought is a serious hazard

<table>
<thead>
<tr>
<th>Drought</th>
<th>Billion Dollar Events by Effect on U.S. From 1980 to 2016 (7PM Adjusted)</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>Agriculture</td>
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<tr>
<td>Pooling</td>
<td>24</td>
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<tr>
<td>Winter</td>
<td>36</td>
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<tr>
<td>Shaved</td>
<td>35</td>
</tr>
<tr>
<td>Harvest</td>
<td>14</td>
</tr>
<tr>
<td>Winter</td>
<td>17</td>
</tr>
<tr>
<td>Total</td>
<td>283</td>
</tr>
</tbody>
</table>

NOAA National Centers for Environmental Information (NCI)
U.S. Billion-Dollar Weather and Climate Disasters (2017)
https://www.ncdc.noaa.gov/billions/
Why 2012?

NATIONAL DROUGHT MITIGATION CENTER

65.5 Percent
$32.4 Billion
123 Deaths
9.2 Billion Acres
#1 Temperature Rank

Drought in 2012

Drought Spatial Extent and Severity

Why McCook?
Rural communities are especially at risk

NATIONAL DROUGHT MITIGATION CENTER
Sample Impacts and response

Community residents noticed several changes:
- Cornfields became crunchy as plants were stressed.
- Irrigators noted a reduction in water supply.
- Dirt and smoke clouded the air.
- Increased hay and feed prices.
- Pheasant population declined with the reduction of cool season alfalfa grasses.
- Tourism numbers down as hunting opportunities declined.

The town residents responded to these changes:
- Farmers and ranchers took note of soil conditions and moved livestock or reduced herd size.
- City council and water manager coordinated with fire chief to monitor risk and made public radio announcements.
- Youth organizations (4H and FFA) held programs on drought impacts.
- Health Department conducted mosquito census for West Nile virus.

Results

Drought Impacts 2012-2014

Drought Coping Responses 2012-2014
Results

• Natural Capital was affected most. Human capital formed the bulk of the response.

• Pre-existing community structures contributed to the town’s recovery, including: a municipal drought plan, coordinated city agency configuration, and proactive public health systems. These were bolstered by strong human and social capital.

Human and Social Capital:
Strong leadership tradition

“McCook has a reputation of having governors and senators from here. Part of that stems from participatory democracy, there is a collective wisdom in that. If we have a problem, we solve it with hands-on participation.”

- Community historian & McCook Gazette Columnist

Conclusion: Disasters happen.
Defining resilience

Resilience was originally defined by Holling (1973) as “a measure of the persistence of systems and of their ability to absorb change and disturbance and still maintain the same relationships between populations or state variables” (p. 14).

Resilience ≠ Persistence

At a basic level, the classic definition tells us it is the ability of a system to absorb shocks and maintain functionality.

Updated thinking. Resilience requires positive transformation that allows communities to function better than they did in their prior states.

The cases show that community resilience has a strong social dimension.
Grit is the stubborn refusal to quit.
- Jonah Lehrer, Author

Crisis triggers learning and knowledge generation.
Resilience is having the capacity to expect the unexpected and absorb it.
Surprise and crisis create the space for reorganization and renewal. (Folke et al. 2005)

Resilience and disaster recovery
- When damaged infrastructure is rebuilt, a community comes back to life.
- Therefore, a baseline measure of recovery should include a consideration of the amount of time that it takes for a community to return to its prior state.
- Sometimes the community response to the secondary and tertiary impacts of a natural hazard event can leave the community better positioned to deal with future events, as well as more socially connected.

Hazards as catalysts
Recovery programs can transform the community into something new as the resources and institutions are built up after a disaster.
Example: rethinking forestry practices in light of water availability.
Nebraska Forest Service Guidelines during drought:
Prioritize watering zones -
1. trees; 2. shrubs; 3. perennials and ornamental grasses; 4. turf. (Replant turf as needed.)
Resilience as “Institutional Capital”

Institutions: principles, rules, norms, and decision-making procedures that structure interactions. Simply, “rules or habits” that people live by.

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