Planning for Small Town & Rural Communities, Infrastructure, and Disasters

Environment and Energy Study Institute
Rural Communities Rise to the Challenge of Dual Disaster
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## Thumbnail History:

Rural → Rural / Urban → ~ Rural / Exurban / Suburban

<table>
<thead>
<tr>
<th>Time Period</th>
<th>Approx. Pop (M)</th>
<th>% Pop ‘Rural’</th>
<th>Rural Land (M ac)</th>
<th>% Land Rural</th>
</tr>
</thead>
<tbody>
<tr>
<td>1860</td>
<td>31</td>
<td>~ 80%</td>
<td>~ 1,700</td>
<td>~ 90%</td>
</tr>
<tr>
<td>~1920</td>
<td>106</td>
<td>~ 50%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>~1950s</td>
<td>165</td>
<td>~ 33%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Today</td>
<td>332</td>
<td>~ 20%</td>
<td>~ 1,400</td>
<td>~ 75%</td>
</tr>
</tbody>
</table>

Many, smaller farms
Market towns
A few cities

Industrial cities
Market cities
Rural

Cities
Suburbia
Rural

Cities
Edge cities / suburbs
Exurbia
Fewer, larger farms
Small Town & Rural Coastal Michigan Today

City of Grand Haven

Grand Haven Charter Township

Buildings

Buildable Parcels

Flooding / Coastal Hazard (Frequency / Severity)
High / Low
Mod / Mod
Low / High

(Images Not on the Same Scale)

<table>
<thead>
<tr>
<th></th>
<th>Grand Haven City</th>
<th>Grand Haven Township</th>
</tr>
</thead>
<tbody>
<tr>
<td>Approximate GL Shoreline (mi.)</td>
<td>2</td>
<td>7</td>
</tr>
<tr>
<td>Land Area (sq. mi.)</td>
<td>5.8</td>
<td>28.7</td>
</tr>
<tr>
<td>Approximate Total Population</td>
<td>10,000</td>
<td>15,000</td>
</tr>
<tr>
<td>Population Density</td>
<td>2.7 persons / acre</td>
<td>0.8 persons / acre</td>
</tr>
<tr>
<td>Total Parcels</td>
<td>5,656</td>
<td>6,599</td>
</tr>
<tr>
<td>Avg. Parcel Size (acre / parcel)</td>
<td>0.66</td>
<td>2.78</td>
</tr>
<tr>
<td>Moderate Storm - Parcels at Risk: # (%)</td>
<td>887 (16%)</td>
<td>924 (14%)</td>
</tr>
</tbody>
</table>
Ongoing Challenges: Being Rural

• Business of farming / forestry
• Environmental
• Demographics
• Urbanization pressures
• Higher poverty, unemployment, disabilities
• Lower educational opportunities, diversity
Ongoing Challenges: Planning For Rural Scale

- Per-capita cost of ~ urban infrastructure
  (Roads, water, wastewater, stormwater, broadband)
- Per-capita cost of services
  (Police, fire, EMS, hazard/emergency response)
- Governance (administration, analysis, planning)

Politics / Culture

- Government / regulation
- Property rights / individualism
Case Study: Midland Flood

Credits: MLive.com (photos by Neil Blake and Jake May) and Detroit Free Press – May 20, 2020
Case Study: Midland Flood

Some Numbers:
- 2 dams failed
- 10,000 evacuated
- 3,700 properties damaged
- 2,300 homes damaged
  (only 14% had insurance)
- $190 M in losses
- $55 M response / infr costs
- 2,500 dams state-wide
- 1,061 regulated
- 2 state dam safety inspectors
- 5 dams in critical condition

Credit: Detroit Free Press – May 20, 2020
Vision:
Sustainable & Adaptable Communities & Landscapes

Rural
- Rural: Working + Natural
- Physically Resilient: ↓ hazards
- Economically Resilient: Diverse/green/amenity

Small Town
- Small Town Compact
- Physically Resilient: ↓ hazards
- Economically Resilient: Local/CSAs

Urban (City)
- Urban Dense
- Physically Resilient: ↓ hazards
- Economically Resilient: More global
(Kind of) New Challenges

• New normal
• Disconnects, thousand cuts, & boiling frogs
• Political polarization
• On-size fits all silver bullets (landscape dumb)
• Under-investment in government
• Unfortunate (policy) expectations
• Loss aversion > prudence
New Directions

- Participation before, not after
- Good governance (government)
- Landscape-smart policies
- No-regrets policies
- Learn to live with nature (relocate / adapt, then engineer as last resort)
- Stewardship economics
Questions?