City of New Braunfels Leverages Solutions for ArcGIS to Improve Flood Response

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GIS Manager, City of New Braunfels
The Problem
Problems

- Frequent flash flooding
- Reactive process for handling events
- Lacked historical data for predictive modeling and proactive responses
- Lacked response plans that incorporated GIS data, analysis, technology to prepare, mitigate, respond or recover from events
The Solution
Solutions

• Proactive approach to flood management
• Utilize flood inundation polygons to model where horizontal and vertical outreach of the flooding affected residents and businesses
• Create response plans for the different flood stages (action, flood, moderate, major)
• Assign tasks for each group in the EOC 3-6 hours in advance of the flooding (road closures, rescues, shelter openings, early warning notifications, damage assessment for recovery efforts)
• Use the inundation modeling for outreach programs
• Recovery assistance for economic centers to limit local employees out of work or tax dollar revenue streams
Early Warning System
Response Plan

- EOC Activation (Partial or Full Rollout)
- Road closures (Workforce to Assign to Crews)
- Activate Detours
- Residential Evacuations (Workforce to Assign to PD)
- Nearest Shelters to Open
- ICS Protocols (staging areas, helipad locations, etc.)
**Detailed Report**

<table>
<thead>
<tr>
<th>Category</th>
<th>Count</th>
</tr>
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<tbody>
<tr>
<td>Child Care Facility</td>
<td>1</td>
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<tr>
<td>Elderly Care Facility</td>
<td>0</td>
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<tr>
<td>Vulnerable Facility</td>
<td>2</td>
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<tr>
<td>RV Parks</td>
<td>1</td>
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<tr>
<td>Apartment Complex</td>
<td>4</td>
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<tr>
<td>Mobile Home Parks</td>
<td>0</td>
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<tr>
<td>Medical Facility</td>
<td>0</td>
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<tr>
<td>Economic Center</td>
<td>1</td>
</tr>
<tr>
<td>Nearest Shelter</td>
<td>2</td>
</tr>
</tbody>
</table>

- Child Care Facility: 1
  - A Hill Country School House
- Elderly Care Facility: 0
- Vulnerable Facility: 2
  - Hill Country Community Mental Health Center
  - River City Mental Health Consumers
- RV Parks: 1
  - Landa RV & Campgrounds
- Apartment Complex: 4
  - Landa Apartments
  - Landa Place Apartments
  - Laurel Heights Apartments
  - Landmark Lofts
- Mobile Home Parks: 0
- Medical Facility: 0
- Economic Center: 1
  - New Braunfels City Hall
- Nearest Shelter: 2
  - Church Hill Middle School
  - New Braunfels High School
# Workforce & Collector for Road Closures

<table>
<thead>
<tr>
<th>Label</th>
<th>Name</th>
<th>Assignment</th>
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<tbody>
<tr>
<td>GA</td>
<td>Guillermo Altamirano</td>
<td>13</td>
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<tr>
<td>GS</td>
<td>Gregory Schwedtfeger</td>
<td>5</td>
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<tr>
<td>BG</td>
<td>Bernie Gutierrez</td>
<td>7</td>
</tr>
</tbody>
</table>

[Map of New Braunfels showing road closures]
Workforce & Collector for Evacuations
Workforce Damage Assessment (Dispatcher)

Assignments

Evaluate Structure
Damage Assessments TDEM
Medium Priority | Due March 23, 2017 10:00 AM | Created March 22, 2017
ASSIGNED | Greg Brown

339 Wood Rd

Attachments
Add an attachment using drag and drop or by selecting a file.
Workforce for Damage Assessment (Mobile Worker)

- Mobile workers receive assignments in the field
- New assignments or changes communicate through app to the Dispatcher
- All work can be tracked and reported
Collector for Damage Assessments

- Feature layers configured to mimic TDEM damage assessment forms
- Workforce project for damage assessment is configured to launch Collector for mobile workers
- Data is synchronized with database instantaneously. No more paper forms.
Preliminary Damage Assessment

- Crowdsourcing for public consumption
- Public can notify OEM of house(s) that require official damage assessment visit
- Feeds into Workforce for Task generation
Operations Dashboard (Recovery)

15 Assessments

Damage Structure Details
Damage Assessments TDEM: < 1 of 2
Affected

Assessment Summary

Business Losses
50
Minor Damage (less than 40%)

Business Losses
25
Major Damage (greater than 40%)

Business Losses
$1750000

Debris Clearance
1
Debris Clearance: (Number of Sites)
Homes Isolated

Economic Impact

Municipality Chart

Cert 1 Lisa Rubey
Working

Cert 2 Lon Patterson
Not Working

Cert 3 Michael Webb
Working

Greg Brown
Not Working

Jeff Kelley

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