Montgomery County Resiliency Workshop Report

July 23rd, 2019
# Table of Contents

<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>WORKSHOP ATTENDEES</td>
<td>2</td>
</tr>
<tr>
<td>EXECUTIVE SUMMARY</td>
<td>5</td>
</tr>
<tr>
<td>EDUCATION AND PARTNERSHIPS</td>
<td>6</td>
</tr>
<tr>
<td>EDUCATION AND PARTNERSHIPS CONT.</td>
<td>7</td>
</tr>
<tr>
<td>CHARM</td>
<td>8</td>
</tr>
<tr>
<td>CHARM MAPS</td>
<td>9</td>
</tr>
<tr>
<td>CHARM MAPS CONT.</td>
<td>10</td>
</tr>
<tr>
<td>CHARM MAPS CONT.</td>
<td>11</td>
</tr>
<tr>
<td>COMMUNITY FINDINGS</td>
<td>12</td>
</tr>
<tr>
<td>COMMUNITY FINDINGS CONT.</td>
<td>13</td>
</tr>
<tr>
<td>COMMUNITY FINDINGS CONT.</td>
<td>14</td>
</tr>
<tr>
<td>STATISTICS</td>
<td>15</td>
</tr>
<tr>
<td>NEXT STEPS</td>
<td>16</td>
</tr>
<tr>
<td>NEXT STEPS CONT.</td>
<td>17</td>
</tr>
<tr>
<td>MAP OF MONTGOMERY COUNTY</td>
<td>18</td>
</tr>
<tr>
<td>APPENDIX A</td>
<td>19</td>
</tr>
<tr>
<td>APPENDIX B</td>
<td>20</td>
</tr>
<tr>
<td>APPENDIX C</td>
<td>21</td>
</tr>
<tr>
<td>APPENDIX D:</td>
<td>23</td>
</tr>
</tbody>
</table>
Workshop Attendees

29 Local Officials, Municipal Staff, and Stakeholders

Workshop hosted in Partnership with:

Report Prepared by:

Workshop Date and Location

July 23, 2019
Montgomery County Texas A&M AgriLife Extension
Tom LeRoy Education Building (Meeting Space)
9020 Airport Rd
Conroe, TX 77303
# List of Workshop Staff and Partners

<table>
<thead>
<tr>
<th>Organization</th>
<th>Name</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>TAMU/TCWP</td>
<td>Steven Mikulencak</td>
<td>Extension Program Specialist, Planning Programs</td>
</tr>
<tr>
<td>TAMU/TCWP</td>
<td>Valeria Keese</td>
<td>Program Coordinator, Planner</td>
</tr>
<tr>
<td>TAMU/TCWP</td>
<td>Amanda Ashcroft</td>
<td>Program Coordinator, Planner</td>
</tr>
<tr>
<td>TAMU/TCWP</td>
<td>Celina Gauthier Lowry</td>
<td>Program Coordinator, Planner</td>
</tr>
<tr>
<td>TAMU/TCWP</td>
<td>Md Yousuf Reja</td>
<td>Geospatial Analyst</td>
</tr>
<tr>
<td>TAMU/TCWP</td>
<td>Timothy Little</td>
<td>Program Coordinator, Planner</td>
</tr>
<tr>
<td>TAMU/TCWP</td>
<td>Mario Reyna</td>
<td>Media Specialist Intern</td>
</tr>
<tr>
<td>TAMU/TCWP</td>
<td>Madeline Jones</td>
<td>Extension Assistant</td>
</tr>
<tr>
<td>TWDB</td>
<td>Larry Voice</td>
<td>Engineer</td>
</tr>
<tr>
<td>FEMA Region 6</td>
<td>Yi Chan</td>
<td>Flood Outreach Specialist</td>
</tr>
<tr>
<td>USACE</td>
<td>Lisa Marshall</td>
<td>Project Manager</td>
</tr>
<tr>
<td>GLO</td>
<td>Colin Nickells</td>
<td>Research Specialist</td>
</tr>
<tr>
<td>TAMU AgriLife</td>
<td>April Fagan</td>
<td>Administrative Manager</td>
</tr>
<tr>
<td>TAMU AgriLife</td>
<td>Amy Ressler</td>
<td>County Extension Agent</td>
</tr>
<tr>
<td>Bayou Land Conservancy</td>
<td>Becky Martinez</td>
<td>Conservation Director</td>
</tr>
</tbody>
</table>

29 Local Officials, Municipal Staff, and Stakeholders attended the workshop.
Executive Summary

On July 23rd of 2019, the Texas A&M AgriLife Extension project team conducted the Montgomery County Resiliency Workshop supported by resources provided by the Federal Emergency Management Agency (FEMA).

29 local officials and stakeholders throughout Montgomery County attended the half day workshop and learned how urban planning and development decisions can influence disaster risk.

AgriLife Extension worked closely with FEMA and Texas A&M AgriLife at Montgomery County to coordinate the workshop. Several state and local partner groups gave presentations during the workshop on best practices in hazard mitigation, principles of resilient place making, and how each of their organizations can support local hazard mitigation efforts.

The majority of the workshop was dedicated to using the CHARM GIS mapping platform, developed by AgriLife Extension’s Texas Community Watershed Partners. The platform allows communities to digitally draw different growth and development scenarios on a map of their community and see the implications, in real time, which these scenarios will have for increasing or decreasing disaster risk.

The AgriLife Extension project team utilized its existing state-wide network of county agents to establish strong community relationships, leading to over twelve pre-workshop coordination meetings with local officials.

Post-Workshop survey results found that the vast majority of participants learned something they would apply in their work or future decisions that can help them advance mitigation in their communities.
The AgriLife Extension Resiliency Workshop brought together a diverse group of participants and speakers to communicate and educate participants about risk, resilience building, and partnering opportunities with local, state, and federal entities. State and federal agency partners also maintained their own booths and engaged participants during CHARM activities.

**County Judge Mark Keough**

Before the day’s events unfolded County Judge Mark Keough thanked all who attended the workshop, Texas A&M AgriLife and Texas Community Watershed Partners for developing the workshop. “It’s great to see the enthusiasm this county has to be resilient in the face of adversary.”

*To learn more about the County Judge go to: mctx.org*

---

**Texas Community Watershed Partners (TCWP): Steven Mikulencak, AICP- Planning Programs Specialist**

Steven Mikulencak with TCWP presented on the concept of resilience, characteristics of resilient entities based on established hazard mitigation research, case studies indicating why some entities were resilient to hazards as opposed to others, and specific planning and development initiatives that communities can do to reduce risk.

*Email: smikulencak@tamu.edu*

---

**TCWP: Valeria Keese- Program Coordinator**

Valeria Keese with TCWP presented to the group regarding the availability of Base Level Engineering Data for east Montgomery County. The presentation discussed what is Base Level Engineering, where can it be acquired, and how can it be used for risk reduction activities.

*Check out BLE data in your area: [https://webapps.usgs.gov/infrm/estBFE/](https://webapps.usgs.gov/infrm/estBFE/)*

*Email: valkrdz@tamu.edu*

---

**General Land Office: Colin Nickells-Research Specialist**

Colin Nickells with General Land Office discussed how GLO is the responsible entity for developing the State Community Development Block Grant Disaster Recovery Program (CDBG-DR) Action Plan. The State Action Plan identifies activities for long-term recovery and restoration of housing, infrastructure, planning, and economic development in areas affected by disaster. Currently, GLO is awaiting HUD rule approval for $4.3 billion in mitigation funding that could be provided to counties affected by 2015, 2016 floods and Hurricane Harvey.

*For further information, go to recovery.texas.gov*

*Email: cdr@recovery.texas.gov*
Texas Water Development Board: Yi Chan - Flood Outreach Coordinator

Yi Chan with Texas Water Development Board (TWDB) presented on the various programs and grants TWDB can offer communities. She went into great detail discussing their National Flood Insurance Program, their Community Assistance Program, and the benefits of communities entering into a Community Rating System. She also discussed their Flood Mitigation Assistance Planning Grants, Projects Grants, and Cooperating Technical Partners program.

For further information on these programs and grants, go to twdb.texas.gov
Email: yi.chan@twdb.texas.gov

Bayou Land Conservancy: Becky Martinez – Conservation Director

Becky Martinez with Bayou Land Conservancy (BLC) an accredited land trust, presented on the different types of projects their organization has conducted in the past and the benefits gained by conserving lands. By protecting land along streams it can provide control for flood waters, clean water, and preserve area for wildlife. BLC partners with developers, local governments, and private land owners to preserve or enhance their greenspaces.

To partner with Bayou Land Conservancy or learn more about their programs, go to bayoulandconservancy.org
Email: bmartinez@bayouland.org

United States Army Corp of Engineers: Lisa McCracken - Project Manager

Lisa McCracken from United States Army Corp of Engineers (USACE) discussed the different partnerships opportunities USACE offers. They currently provide Flood Plain Management Services to address use changes, flood risk, and flood hazards to state, regional or local governments. They also offer Planning Assistance to States and a Continuing Authorities Program.

To learn more about these programs and opportunities, go to swg.usace.army.mil/
Email: Lisa.m.mairs@usace.army.mil

Montgomery County: Diane Cooper Certified Flood Plain Administrator

Diane Cooper the Flood Plain Administrator for Montgomery County discussed the ongoing San Jacinto Regional Watershed Master Drainage Plan. Once the Plan is complete, it will identify the regions vulnerabilities to flood hazards, develop approaches to enhance public information, evaluate flood mitigation strategies, and provide a comprehensive Flood Mitigation Plan. The report is expected to be completed by fall 2020.

To learn more email diane.cooper@mctx.org

Note: To get a copy of the power point presentations please contact Valeria Keese at valkrdz@tamu.edu
Following introductory presentations, Steven Mikulencak introduced workshop participants to the CHARM mapping tool. CHARM, which stands for Community Health and Resources Management, helps communities see how planning decisions made today will impact tomorrow’s environment and community. With over three dozen indicators for assessing planning decisions, CHARM gives local officials, stakeholders, and citizens the power to map and analyze hypothetical growth with real-time feedback.

Participants were assigned to different tables, with each exercise being facilitated by a trained staff member. Each facilitator took time to explain the mapping software, basic tools, layers, and indicators. Following the introduction, participants took direct control of the software and began to digitally “paint” development scenarios on the map itself.

Participants were tasked with doubling their population and doing so in a way that incorporated principles of resiliency. Participants engaged in a discussion with one another, as other staff members, including state and federal partners cycled from table to table to further explain different flood data sets in the mapping application.

After two hours of using CHARM, each table facilitator engaged participants in a debrief conversation. Each table discussed guiding hazard mitigation principles and priorities, hazard risk, and how communities can implement what they learned at the workshop on the ground level.

Following the table debrief, AgriLife Extension facilitated a room debrief, in which images of each table’s completed map were shared with the room, with table representatives presenting on different characteristics in their map.
Each CHARM Table was comprised of a diverse set of participants - from city council members to residents. Each table developed a map with different hypothetical scenarios for future growth in their communities. The images on this page are the maps that each group produced. The diversity of each map indicates there are a variety of ideas on how the area could develop, with some scenarios reducing risk while others create it. The diversity of these maps fostered a robust discussion of risk and hazard mitigation. Color variations on the maps indicate different types of development, such as suburban, residential, mixed use, etc. (Note: Tables were labeled different colors to divide participants into a tables.)
CHARM Maps Cont.

City of Conroe (Blue Table)

City of Conroe (Yellow Table)
CHARM Maps Cont.

East Montgomery (Green Table)

City of Patton Village (Pink Table)
Community Findings

At the end of the mapping activity, AgriLife Extension staff facilitated a debrief conversation with participants. Questions and results from these conversations are included in this section.

What principles were used to guide the development of your scenario?

City of Conroe (Orange Table)
- Existing Developing Patterns
- Mitigation Efforts
- Support Volunteer Organizations Active in Disaster Response, Retirement Homes, etc.
- Respecting floodplain boundaries

City of Conroe (Blue Table)
- Project future growth in a smarter way
- Conservation Efforts
- Open space mitigation
- Respecting floodplain boundaries

City of Conroe (Yellow Table)
- Existing Developing Patterns
- Respecting floodplain boundaries

East Montgomery (Green Table)
- Creating Profit
- Explore different building scenarios
- Greed without consciousness

City of Patton Village (Pink Table)

What were the key takeaways that you gained from this exercise? Did you learn anything new?

City of Conroe (Orange Table)
- Visualization is critical to planning
- How quickly green space disappears
- Population age and income levels

City of Conroe (Blue Table)
- Planning ahead
- Limiting developments in risk areas
- Disaster preparation and identifying at risk populations
- Planning and mitigating flood risk
- Table top is useful for emergency planning

City of Conroe (Yellow Table)
- High density development will be critical to reaching future population targets
- Aging Infrastructure

East Montgomery (Green Table)
- Use of available data
- Importance of collaboration and stakeholders
- Need for political support

City of Patton Village (Pink Table)
- Identifying resources
- Acquiring available land for growth
- BLE and Flood Maps displayed the large extent of the risk for the City.
Community Findings Cont.

In the next 1-3 years, what near term actions could help your community become more resilient?

City of Conroe (Orange Table)
- Creation of more detention areas
- Education
- Flood Planning with community leaders
- Filling

City of Conroe (Yellow Table)
- Education on flood insurance
- Messaging on flooding risk to change.
- Buyouts
- Apply for CDBG Grants
- Implementing higher standards

City of Conroe (Blue Table)
- Public Involvement
- Flood Planning with community leaders
- Collaboration with different entities
- Public education

East Montgomery (Green Table)
- CHARM Workshops
- Changes in Building Codes

City of Patton Village (Pink Table)
- Flood Planning with community leaders
- Public Education workshops
- Collaboration with agencies, organizations
- Buyouts
- Future studies
What support does your community need to become more resilient?

City of Conroe (Orange Table)
- Additional staff
- Upgrade to modern technology

City of Conroe (Blue Table)
- Funding
- Public Education Workshops
- Technical support for emergency planning

City of Conroe (Yellow Table)
- Support of elected officials
- Citizen involvement
- Find equitable solutions for city and citizens

East Montgomery (Green Table)
- Social Capital
- Public Participation

City of Patton Village (Pink Table)
- Internal Communication
- Local Support
- Peer Review
- Procedures to be standardize
AgriLife Extension conducted a post workshop survey. A sampling of the survey results are included on this page.

- 29 local and county officials and stakeholders attended the workshop
- 93% agreed that participating in the event was a good use of their time
- 100% had an increase in their understanding of linking planning and land use with long term risk reduction strategies
- 93% learned something they would apply in their work or future decisions
Next Steps

The AgriLife Extension Montgomery County Resiliency Workshop provided a forum to help communities better understand their risk and make sound development decisions. It also provided a platform for members of different organizations within the county to discuss what the needs of the county are. Based on the discussions gained throughout the workshop the following needs were identified.

- Flood prevention planning for the entire county
- Partnerships, collaboration, and communication between entities
- Technology, data, future studies
- Funding and additional support

While each individual community is unique, the needs expressed are not uncommon. Below is a list of a few programs that are available to your community to remedy the issues.

Resiliency Technical Assistance Program

The aim of TCWP is to provide resources for communities to develop and grow towards becoming a more resilient community. As part of that effort TCWP established a program comprised of planners, GIS analysts, and specialists to provide technical assistance to communities in need of additional resources.

This form of assistance is custom tailored to fit the needs of each individual community and planning priorities towards mitigating risk. Types of assistance available but are not limited to:

- GIS technical support
- Planning support for comprehensive and long-range land use plans
- Identify funding and grant opportunities
- Risk communication
- Scenario based planning exercises

To receive technical assistance, complete the form located in Appendix D, and submit to Valeria Keese at Valkrdz@tamu.edu or Timothy Little Tlit@tamu.edu
Next Steps Cont.

Texas Citizen Planner Program

Each workshop participant is further invited to participate in AgriLife Extension’s Texas Citizen Planner program.

This program provides elected and appointed officials the knowledge and skills necessary to make informed land use decisions that lead to long-term hazard management, natural resource conservation, and improved quality of life.

Instruction by planners, researchers, and other leaders from across Texas will provide local officials with the knowledge and skills to make informed community choices. Participants may begin with a multi-class Planning Foundation course that covers legal authority, policy tools, and best practices. Specialty tracks covering flood mitigation, stormwater management, and plan integration are also offered.

For further information, go to citizenplanner.tamu.edu
Email: Celina Gauthier Lowry at celina.lowry@tamu.edu

Green Infrastructure for Texas Program

Green Infrastructure for Texas (GIFT) is a program of the Texas A&M AgriLife Extension Service through the Texas Community Watershed Partners.

GIFT enables citizens of Texas to build resilient cities adaptable to economic, social, and environmental change; to more efficiently use their resources by minimizing losses due to misguided design, construction and planning practices; and to minimize misuse and abuse of natural resources. We provide on-the-ground demonstration projects, applied research, and education.

For further information go to agrilife.org/gift/
Email: Charriss York at cyork@tamu.edu
Map of Montgomery County
## Appendix A
### Agenda

<table>
<thead>
<tr>
<th>Time</th>
<th>Session</th>
</tr>
</thead>
<tbody>
<tr>
<td>8:30</td>
<td>Sign-in</td>
</tr>
<tr>
<td>9:15</td>
<td>Introduction, Opening Remarks, &amp; Base Level Engineering</td>
</tr>
<tr>
<td>10:00</td>
<td>CHARM Table Exercise: Current Risks, Mitigation Strategies &amp; Base Level Engineering</td>
</tr>
<tr>
<td>11:30</td>
<td>Partner Presentations &amp; Lunch</td>
</tr>
<tr>
<td></td>
<td>GLO/TWDB/USACE/Bayou Land Conservancy/Montgomery County</td>
</tr>
<tr>
<td>12:30</td>
<td>CHARM Exercise Continued: Create Your Own Scenarios</td>
</tr>
<tr>
<td>1:30</td>
<td>Room Scenario Debrief</td>
</tr>
<tr>
<td>2:00</td>
<td>Adjourn</td>
</tr>
</tbody>
</table>
**Appendix B**

---

**Evaluation**

**CHARM Resiliency Workshop**

July 23rd, Montgomery County

1. How would you best characterize your profession or organization affiliation?
   - Local Government
   - County Government
   - State Government
   - Federal Government
   - University/Academia
   - Non-profit or Community-Based Organization
   - Private Business
   - Community Member/Citizen
   - Private Sector
   - Media
   - Other (please specify):

2. Participating in this event was a good use of my time.
<table>
<thead>
<tr>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

3. This event increased my knowledge about the applications of CHARM and how it can be utilized for my community.
<table>
<thead>
<tr>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

4. Overall, I would recommend this workshop to colleagues.
<table>
<thead>
<tr>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

5. The presenters were knowledgeable about the topics.
<table>
<thead>
<tr>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

6. The presenters delivered their material well.
<table>
<thead>
<tr>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

7. Did you learn something that you can apply to your work or future decisions?
   - Yes
   - No
   - Maybe
   - Prefer not to answer/Not Applicable

---

**Before Workshop**

- [ ] Yes
- [ ] No
- [ ] Prefer not to answer/Not Applicable

---

**After Workshop**

- [ ] Yes
- [ ] No
- [ ] Prefer not to answer/Not Applicable

---

**Back in Business**

- [ ] Yes
- [ ] No
- [ ] Prefer not to answer/Not Applicable

---

8. Data about risks in your community

9. Risk avoidance principles such as: elevation or relocation

10. The location of critical facilities and their vulnerability to risk

11. Linking planning and land use with long term risk reduction strategies

---

**Thank You!**
Appendix C
Outreach Materials

CHARM
Resiliency Workshop-
MONTGOMERY CO.
www.communitycharm.org
Tuesday July 23, 2019
9 am - 2 pm
Montgomery CO. Extension office
(9020 Airport Rd. Conroe, TX 77303)
RSVP info on the back

AN INTERACTIVE PLANNING TOOL
AICP & CFM CREDITS AVAILABLE

Texas A&M
Agrilife Extension

RSVP via e-mail to Valeria Keese
at valkrdz@tamu.edu

The Community Health and Resource Management (CHARM) platform is an interactive and collaborative mapping tool. It helps communities see how planning decisions made today impact tomorrow’s communities.

CHARM is about ‘Growth in all the right Places’. How many homes are we putting in harms’ way? Are we building resilient communities?

This is a Texas A&M program that uses a low-cost, interactive tabletop interface so people can build their own towns and cities using local data about floods, habitats, critical facilities, and more. It allows over a dozen development styles.

If you have questions, please contact:
Valeria Keese | valkrdz@tamu.edu
Texas Community Watershed Partners | communityCHARM.org | tcwp.tamu.edu
Outreach Materials
Appendix D:
Additional Resources

Resiliency Technical Assistance Program Opportunities

Texas Community Watershed Partners is now available to support communities, counties, and organizations on technical assistance projects for the upcoming cycle year starting September 2019! This technical assistance is free to groups interested in reducing risk and becoming resilient. Partnerships are on a first come first serve basis so inquire quickly!

Kinds of support available are:
(please check any of interest to you or your organization)

☐ CHARM School: Three-day training to teach your GIS staff how to design and create your own interactive mapping exercises and analyses through ArcGIS and Community-Viz Software functionality. This training program is for GIS staff and planners.

☐ Community Resilience Index (CRI) a Community Assessment: A CRI workshop includes working with community leaders across all departments to assess their preparedness for storms and recovery. CHARM platform could be used to identify areas of repeated flooding, road closures, etc. A final report will be delivered after the workshop identifying areas of improvement in plans and community facilities.

☐ Buildout/ Risk Analysis under Current Zoning Regulations: Is your community growing? A build out analysis could be conducted to provide a community with different growth and development scenarios to reduce risk. Could also look at development under existing codes and ordinances to examine risk reduction opportunities.

☐ Buyout Analysis: Identify strategies for potential buyout properties and provide cost benefit analysis using CHARM platform.

☐ Implement Higher Development Standards: Educate and assist communities to develop higher building standards which can include public workshops.

☐ Flood and Risk Awareness Public Education Workshops: TCWP can host public workshops dedicated to educating citizens on flood zones and mitigation efforts.

☐ Plan and Code Assessment: Plan and code revision to identify competing directives and provide gap analysis.

☐ Green Infrastructure Practices and Map Analysis: Interested in applying green infrastructure practices? TCWP will explore and compare several green infrastructure practices for your community to improve water quality and reduce runoff using CHARM.

☐ Other: ____________________________________________________________

If you or your organization is interested in receiving technical assistance from TCWP, please fill out the information below. One of our program coordinators will reach out to you soon!

Name: ___________________________ Organization: ___________________________

Email: ___________________________ Phone: ________________________________

When would you be interested in starting technical activities? (Circle a time period)

THANK YOU!

smikulencak@tamu.edu
www.CommunityCHARM.org