Through a public private partnership, the City of Annapolis and their Weather It Together initiative partnered with Michael Baker International’s Planning Innovation Lab to deliver an exceptional GIS based, outreach and engagement product to residents, stakeholders, local officials, and the national resilience community.
City of Annapolis URISA Single Process System Award Submission

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A. System

1. Name of System and ESIG™ Category

- **Name**: Landmark at Risk: Protecting the Historic Seaport of Annapolis, Maryland Story Map
- **Category**: Single Process System
2. Letter from the Executive Administrator

City of Annapolis
Office of the City Manager
180 Duke of Gloucester Street
Annapolis, MD 21401-2517

Teresa O. Sutherland, City Manager
TSutherland@annapolis.gov • 410-268-7030 • Fax 410-216-9264 • TDD use MD Relay or 711 • www.annapolis.gov

May 30, 2018

Dear Sir/Madam,

On behalf of The City of Annapolis I am pleased to authorize and support the submission Landmark at Risk: Protecting the Historic Seaport of Annapolis, MD for the URISA’s E SIG Award in the Single Process System Category.

Annapolis has a very special relationship with water that has shaped its history and current economy. Over the last 30 years however flooding is becoming more and more common. Communicating with residents and business owners on this complicated and often overwhelming topic can be difficult. This project provides information in an engaging and visual way that helps provide education and strategies on how to learn to live with water for their properties and businesses.

The project is a living document that will continue to change and update as the City adopts different plans and strategies.

Thank you for considering the City of Annapolis for the URISA E SIG award.

Sincerely,

Teresa Sutherland
City Manager
City of Annapolis
3. Summary of the System

- The historic district of Annapolis is recognized as the home of the U.S. Naval Academy and for its unique and rich heritage resources reflecting one of the first planned cities in the United States, represented by the largest concentration of 18th century brick buildings. However, with rising sea levels and increasing days of nuisance tidal flooding, Annapolis is now recognized as one of the most at-risk cities facing the effects of climate change.

- To address this risk and reduce the vulnerability of Annapolis’s historic district, the City of Annapolis has embarked on developing a Cultural Resource Hazard Mitigation Plan (CRHMP) through its Weather It Together initiative. The plan, using FEMA guidance, aims to protect and preserve its historic seaport from high tide flooding and rising sea levels, while adapting and improving the resilience of the City’s historic resources.

The Planning Innovation Lab of Michael Baker International collaborated with the City of Annapolis’s Weather It Together team to develop an interactive resource that highlighted the city’s efforts to address local flooding impacts through proactive hazard mitigation planning for its cultural resources. The story map entitled “Landmark at Risk: Protecting the Historic Seaport of Annapolis, Maryland” is the go-to resource, not only for the citizens of Annapolis, but for other communities facing the challenges of flooding. Residents and users can click, zoom, or scroll through the diverse media in this interactive product. Using an Esri story map as a platform allows the city and its residents/stakeholders to actively engage with each other and the issues through geospatial data, social media, and crowdsourcing opportunities. The platform also enhanced the city’s planning initiatives by providing an improved understanding of constituent needs and helping the city communicate their vision of an economically flourishing, resilient community.
4. User Testimonials

June 8, 2018

To Whom it May Concern:

Thank you for the opportunity to provide a testimonial in support of Landmarks at Risk: Protecting the Historic Sobor of Annapolis, Maryland for the URISA’s ESIG Award in the Single Process System Category. This project offers a valuable resource to the community to educate citizens and business owners about how flooding affects our historic city and what they can do to make their properties sustainable.

Annapolis is one of the oldest port cities in America and has evolved significantly over time from a watermen and fishermen village and state capital to today—an economic engine of tourism and a place where gorgeous waterfront communities protect fiercely their National Historic Landmark status. The idea of how to protect our city and properties from the effects of flood waters is a complicated and daunting issue. This story map breaks the issue into understandable and manageable pieces. The visual aspect of the project provides a unique communication tool that puts information in a centralized location.

The project also allows users to contribute to the project through a survey and photo gallery to load pictures that help users feel a part of the solution. This evolving technology will help the City of Annapolis in the future, allowing our town to continue to thrive while dealing with our changing relationship with water.

If you should have any regarding this endorsement or the project, please do not hesitate to contact me directly at 410-263-7997 or sobrien@annapolis.gov.

Sincerely,

Susan O’Brien
Communications Officer
June 1, 2018

Re: Landmark at Risk: Protecting the Historic Seaport of Annapolis, Maryland

To Whom It May Concern:

Explaining flood risk to the public is an extremely difficult task. There are different frequency storm events, hurricanes, Nor'easters, varying amounts of precipitation, different sea level rise projections, etc. In addition, every community’s flood risk is unique based on its geography, population, cultural resources, buildings, infrastructure, etc. that are at risk.

Boiling all that technical information down into something understandable, while still highlighting what’s important in the community, is difficult to do. Two-dimensional maps don’t tell the whole story of what’s at risk. This map application helped me not only learn what’s at risk in Annapolis, but also helped me explain their story.

It’s my pleasure to recommend the City of Annapolis for this award.

If you have any questions, please contact me at 301-689-1495 or kevin.wagner@maryland.gov.

Sincerely,

[Signature]

Kevin G. Wagner
Community Assistance Program Manager
State NFIP Coordinating Office
June 4, 2018

To Whom It May Concern:

Please accept the brief testimonial concerning the City of Annapolis’ “Landmark at Risk: Protecting the Historic Seaport of Annapolis, Maryland” story map.

The City of Annapolis’s “Landmark at Risk: Protecting the Historic Seaport of Annapolis, Maryland” is an amazing example of how geographic information systems (GIS), specifically a story map, can simplify mountains of social, historic and technical information together in a single platform that informs, engages, and encourages participation from a broad spectrum of participants: citizens, scientists, politicians and staff. As a sister municipality, I always cite this application as an example of how we could better utilize story map technology to express our initiatives to a larger audience. Additionally, I have shared this site with a number of communities across the country that are attempting to convey similar messages to their communities. One of the things I like best about the site is that all of the content is assessable through a “single-portal” and the user is not bounced around to a lot of different websites (e.g., Landmark at Risk tab, Defining the Risk page, NOAA Sea Level Rise Viewer).

Sincerely,

[Signature]

Douglas M. Adams, GISP
GIS Program Manager
Department of Public Works
June 1, 2018

To Whom it May Concern:

On behalf of Historic Annapolis (HA), I am pleased to nominate the City of Annapolis/Michael Baker 'Landmark at Risk' Story map for a URISA award.

The 'Landmark at Risk' Story map is an excellent resource management tool. Over the past several years, we have gained a deeper understanding of the impact of sea level rise and its effects on historic properties in the Annapolis Historic District. As this is a complex issue, the story map is a great illustrative tool to convey information in a digestible, organized, and easy-to-use format. Led by Shawn Wampler of the City of Annapolis and Bradley Dean of Michael Baker International, the story map uses historical information to plan for our future and establishes a framework for understanding the complexity of our landmark at risk.

HA was honored to grant the “Weather It Together” (WIT) program a HA Preservation Award in 2017, and the story map is an essential component of the WIT program. This program is regarded as a model for other communities who are working to assess the impacts of sea level rise, flooding, and subsidence on cultural resources. Further, this story map has inspired HA to plan for “History Walk,” a public education tool for managing historical information about the properties that we manage on behalf of the state.

Sincerely,

Karen Theimer Brown
VP of Preservation
B. Jurisdiction

1. Name of Jurisdiction
   - City of Annapolis, Maryland

2. Population Served by the Organization/Agency
   - 38,394 (2010 Census)

3. Annual Total Budget for the Jurisdiction
   - $106,000,000

4. Chief Elected and/or Appointed Official
   - Mayor Gavin Buckley, 160 Duke of Gloucester St, Annapolis, MD 21401

5. Contact Person for System
   - Shawn Wampler
     Geographic Information Systems Coordinator
     160 Duke of Gloucester St, Annapolis, MD 21401
     410-263-7945, no fax
     swampler@annapolis.gov
C. System Design

1. Motivation for System Development
   - The City of Annapolis Weather It Together initiative had a need for an additional platform for outreach and engagement to inform residents, stakeholders, and local officials of the inherent risks to cultural resources from climate change and flooding. The catalyst for the resource development was Michael Baker International’s Planning Innovation Lab initiative which approached the City to provide in kind services to develop the story map resource.

2. Improving Services
   - The system improves communication between the City staff, of various departments (Management Information Technology, Planning, Emergency Management, etc.) with residents. The goal was to develop a platform which not only provided valuable information about City initiatives to improve resilience but also to establish additional pathways for resident and stakeholder input through surveys and crowdsourced geospatial data in the form of flooding pictures.

3. Unexpected Benefits
   - The most unexpected benefit was the support the product has received from others in the Mid-Atlantic region and across the country. The GIS, resilience, and historic preservation communities have truly rallied behind this product and is hailing it as a best practice in natural hazard risk communication supplementing the City as a national leader.

4. Overcoming Design Problems
   - The biggest design issue was trying to establish a template that could share copious amounts of data and education material in a digestible, approachable way. The Weather It Together initiative was three years’ worth of work. Consolidating that down into one summary resource was incredibly difficult and played the key role in resource design. As a result, the story map is actually comprised of 17 ArcGIS Online applications embedded throughout the product. This story map was one of the first examples of how to leverage multiple ArcGIS online applications into one unified resource.
   - Collaboration was critical to the success of the project. This challenge was quickly overcome by providing access to the Annapolis ArcGIS online system for each collaborator. This ultimately led to an added benefit because rather than the resource being designed outside of the Annapolis Enterprise System, the resource was built through their platform allowing for any necessary long-term maintenance to be provided by the City in the future if required.
   - An additional hurdle was how the resource would be shared and where it would live on the City of Annapolis website. The primary way to access the Landmark at Risk story map is through the Weather It Together page. A social media campaign also coincided with the official release at the 2017 Keeping History Above Water Conference.

5. What Makes the Story Map Exemplary?
The City is one of few jurisdictions in the nation that has examined hazards from a historic preservation perspective. Through the development of the story map resource, this project excels at communicating the very unique and complicated issues that revolve around flooding and historic structures. This product was one of the first examples of how to use story maps to develop a comprehensive outreach and engagement product by leveraging multiple story maps in one package. The product uses 17 ArcGIS online applications in one story map resource.

D. Implementation

1. Project Phases

- **Initial Engagement:** Prior to the story map resource project, Michael Baker International and the City of Annapolis Office of Historic Preservation held a meeting to identify interest in development and collaboration. Realizing this effort could supplement their *Weather It Together* initiative, it was agreed to move forward.

- **Brainstorm and Initial Design:** The most important project phase was brainstorming an initial design. It was critical to the success of the team to illustrate and draw out the story map layout and how the content would be organized.

- **Primary Development:** Both the City of Annapolis and Michael Baker International benefitted from the support of Rebecca Ramsay, a US ICOMOS Fellow from New Zealand who could support development of the resource. Everyone played a key role in telling the story of Annapolis’s journey to develop their Cultural Resources Hazard Mitigation Plan. The content was subdivided into tabs, each representing a key piece of the overall story.
• **Subject Matter Expert Review:** Prior to delivery, the resource was reviewed and evaluated by many subject matter experts from partner organizations. Historic preservationists, historians, architects, scientists, planners, and GIS staff all contributed to the outcome.

• **Delivery and Dissemination:** The City of Annapolis Information and Technology Office along with the Office of Historic Preservation coordinated with the City’s Public Information Officer and the Mayor to formulate an official press release to the community. In addition, there was an official unveiling at the 2017 Keeping History Above Water Conference.

2. **Modifications to the Original System Design**

• Since the product release there has been one modification to the *Annapolis History in Brief* Map tour in the first tab. Esri recently released an update to their “Map Tour” template which resulted in a higher quality, more refined story map. As a result, the team modified this piece of the story utilizing the updated template.

E. **Organizational Impact**

1. **User Community**

• The goal of the story map resource truly was to provide a valuable resource to residents, local stakeholders, public officials, and the greater resilience community nationally. By launching a go-to resource for residents discussing flooding and cultural resources information, combined with sharing opportunities to directly communicate with City staff, the team established an avenue to obtain valuable insight into the needs of residents.

2. **Improving Decisions/Operations/Services throughout the System**

• No public servant can adequately or appropriately act on the needs of their constituents without first acknowledging the concerns of community residents and stakeholders. The Landmark at Risk story map created a resource which encouraged valuable 2-way communication between residents and City staff. This direct input, combined with the outreach and engagement from the *Weather It Together* events assisted in local decision making surrounding cultural resources and flooding issues across the Annapolis

3. **Impacts of the System**

• Quantitative: The resource has received over 5,300 views since its release in November of 2017.

• Qualitative: The product has brought additional national exposure to the City of Annapolis, firmly planting them at the forefront of addressing climate change, cultural resources hazard mitigation, and the utilization of GIS based systems to inform and engage residents and stakeholders on City initiatives. Additionally, this resource has become a model for story map best practices for other agencies and organizations across the country and particularly in the Chesapeake Bay region.
4. Increasing Productivity
   - By designing a resource which is highly accessible (through its online presence and residence on the City of Annapolis website) it allowed city staff to acquire valuable information on the needs of residents by incorporating surveys. Additionally, the resource dramatically magnifies the outreach and engagement voices of staff and local officials as they address priority needs for the City.

5. Other Benefits
   - The City of Annapolis Landmark at Risk story map received national recognition from Esri at their 2018 Public Sector User Conference in Philadelphia when during their plenary, entitled “Making a Difference with ArcGIS” Adam Carnow, Daniel Wickens, and Sarah Scher placed the story map alongside such initiatives as 100 Resilient Cities and Resilient Communities for America.
6. Improving How Business is Conducted

- The most impactful engagement with residents and stakeholders will always be first person interactions however, the use of highly accessible, online resources is becoming relied on more and more as society’s focus turns digital. This resource brought to light the robust capabilities of the City’s GIS system and is paving the way for more projects like this in the future.

F. System Resources

1. Hardware Components

- The only hardware components used to implement and deliver the Landmark at Risk story map were a virtual server and Esri’s ArcGIS Online server.

2. Software Components

- The system resides is on ArcGIS Online which is a cloud based GIS system. Using ArcGIS story maps the City and Michael Baker used a combination of media to create the final product. Below is a breakdown of the different components:
  - ArcGIS Online Feature Data sets - this online storage option was how the City served data for the different maps in the story map.
  - ArcGIS Online Web Maps - this online mapping application allowed the city to create the maps.
  - ArcGIS Story Maps - this online application allowed the City to put together all the story maps and text into a visually pleasing and informative format.
- Esri ArcGIS Online story map applications was used and there was no custom code written for this application only some minor HTML to change the style of the template.

3. System Data

- A major priority during the Landmark at Risk story map was to leverage available data created by the City of Annapolis GIS department, often in concert with Weather It Together partners. Specifically, the following datasets and data resources in the story map include:
  - Annapolis History story map tour highlighting historic sites across the City
  - City of Annapolis Parking ArcGIS Online Map Layer
  - City of Annapolis Historic Districts ArcGIS Online Map Layer
  - City of Annapolis and US Army Corps of Engineers Historic property survey
  - City of Annapolis and US Army Corps of Engineers Historic elevation survey (10ft elevation threshold)
  - Weather It Together Georeferenced flooding feature layer
  - Keeping History Above Water georeferenced photo feature Layer
City of Annapolis URISA Single Process System Award Submission

Landmark at Risk

Annapolis History

Annapolis, located on the Severn River just off Chesapeake Bay, was settled in the mid-17th century. The present city and site according to Governor Francis Nicholson's 1690 survey plan, is centered on State and Church Circles, creating a unique sense of history and place, enhanced through the juxtaposition of land and water. These connectors played a major role in the City's development and establishment as a significant port for travel, trade, and communication.

As the City grew, it became the political, social, cultural, and economic center of Maryland. Historic Annapolis homes include residences of all four Maryland signers of the Declaration of Independence: Samuel Chase, William Paca, Thomas Stone, and Charles Carroll of Carrollton. The city also served as the nation's first permanent capital and, at the request of the Continental Congress in 1781, was the site of the ratification of the Treaty of Paris ending the American Revolution in 1783.

The establishment of the U.S. Naval Academy in 1949 underscored Annapolis's connection to the water. The Academy is a key to the City's prosperity following the development of Baltimore as the state's primary port and still brings a wealth of visitors to the area.

At its core, Annapolis contains the country's largest concentration of 18th century buildings and as such has become a focal point of national and local historical importance.

Conference Photos

Conference Survey

Explore Annapolis

Travel and Accommodations

Parking in Annapolis

Annapolis is an incredibly pedestrian-friendly city with great historic sights, shopping, food and more just steps away from the conference location. If you need to park, please utilize this interactive map to identify your best option.
Landmark at Risk

Annapolis Historic Districts

The architectural and historical significance of Annapolis has been recognized both locally and nationally, based upon its "exceptional value in terms of integrity in illustrating or interpreting the heritage of the United States," a distinction of the National Historic Landmarks Program. As such there are three layers of heritage protection over the city:

1. 1965 Colonial Annapolis Historic District, National Historic Landmark District - U.S. Department of the Interior, National Park Service
2. 1994 Expanded Historic District, National Register of Historic Places
3. 2010 Annapolis National Treasure, National Trust for Historic Preservation

Today the historic context is under threat, with rising sea levels and increasing awareness of testate flooding. Action must be taken to create resilient plans for current, past and future generations.

Defining the Risk

The Chesapeake Bay has seen sea level rise over a foot in the last century, the highest rates of warming the experiment along the Atlantic coast, and almost twice the global average since 1980, the level has never before fallen faster, which means a futi Annapolis Historic Resources since 1985 the city has seen a $500 million investment in national historic significance, including the buildings that have been a part of its history.

A Strategic Approach

Phase 2: Assess Risk

Phase Two outlines the process of conducting risk assessments of historic properties and cultural resources within the defined study. This phase is broken down into four primary steps:

1. Identify the hazards that can affect your community.
2. Profile hazards to determine hazard prone areas and magnitude of each hazard.
3. Inventory historical/cultural resources to assess vulnerability and establish preservation priorities.
4. Estimate the associated amount of potential losses.
4. Staff Resources
   - The City was very fortunate to receive in kind services from Michael Baker International and to have a US/ICOMOS Fellow working on an exchange program for the summer. There were many volunteers to help review and evaluate the story map as well. The ESRI story map format was included in the City’s enterprise license agreement so there was no additional cost for software or hosting.
     - Lisa Craig, Chief of Historic Preservation, City of Annapolis: 0.05 FTE
     - Shawn Wampler, GIS Coordinator, City of Annapolis: 0.15 FTE
     - Rebecca Ramsay, Archeological Fellow, US ICOMOS: 0.1 FTE
     - Bradley Dean, Coastal Scientist, Michael Baker International: 0.15 FTE

5. Unusual Resources
   - None