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We Developed a Smart Phone App on Flooding and Then the Hard Work Began

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Wetlands Watch

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WE DEVELOPED A SMART PHONE APP ON FLOODING AND THEN THE HARD WORK BEGAN
Overview

• More complete, more detailed, broader coverage of flooding events and locations is needed

• Information must be delivered to people when they need it

• Information must be detailed enough to be useful to the targeted individual/organization

• Information and network need to be part of an integrated adaptation strategy

• Collection and dissemination of information must be affordable and sustainable
Overview

• Broader public engagement on adaptation needed = people in addition to a retired population that comes to public meetings
  
  • Millennials
  • Young Families
  • Participants who do not want to “join”
Coastal Flood Advisory from 9/8/2014 5:18 PM to 9/9/2014 12:00 AM EDT for City of Norfolk

Address/Location
City of Norfolk, VA Public Safety
3661 East Virginia Beach Boulevard
Norfolk, VA 23502

Contact
Emergency: 9-1-1
Non-emergencies: 757-441-5600
RAIN FLOODING - SEPTEMBER 8, 2014

Virginian Pilot
Crowdsourcing Offers Better Options

• Aggregate “native knowledge” about critical flooding points

• Engage public in a practical solution (or at least a process leading to a solution)

• Work outside of linear, incremental institutional approaches to problem solving (while informing those traditional processes)
First Order Concept

“Lets Build a Phone Mapping App on Which People Can Record Flooding Information”
"SEA LEVEL RISE" SMART PHONE APP
Hard Part Starts After the App is Developed

“Lets Build a Phone Mapping App on Which People Can Record Flooding Information”
User Needs Have to be Defined

“Flooding Information”

• Who is end user?
  • City Council member
  • Researcher/modeler
  • Emergency manager
  • Transportation Manager
  • Etc.

• What Level of Detail, How Accurate, and How Timely?

• Longitudinal/constant and consistent data needs?
User Needs Define Architecture and Operation of Crowdsourced Network

“People”

- Higher precision/detailed data = greater people management needs
- Human factors issues become major focus – recruitment, training, retention, management
## Data Demands Related to Network Management

<table>
<thead>
<tr>
<th>Data Needs</th>
<th>People Needs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Periodic Flood Photo (any location)</td>
<td>“Passive” recruitment and management</td>
</tr>
<tr>
<td>Coordinated Data/Photo Collection</td>
<td>Actively recruited and maintained network</td>
</tr>
<tr>
<td>Consistently Collected, across a Broad Area, Reliable Flood Data, Longitudinal</td>
<td>Actively recruited, trained, managed, maintained network</td>
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## Data Demands Related to Adaptation Phases

<table>
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<th>Adaptation Needs</th>
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<td>Periodic Flood Photo (any location)</td>
<td>Greater public awareness</td>
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<tr>
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<td>Implementation of adaptation solutions</td>
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</tbody>
</table>
Adaptation Phases Related to Public Advocacy

**Advocacy Needs**

- “Passive” recruitment and management
- Actively recruited and maintained network
- Actively recruited, trained, managed, maintained network

**Adaptation Needs**

- Greater public awareness
- Planning and Assessment of Flood Impacts
- Implementation of adaptation solutions
DISTRIBUTED DATA COLLECTION NETWORK

“Manager” App Certificate

“VIP” App Certificate

“Champion” App Certificate
DISTRIBUTED DATA COLLECTION NETWORK
First Order Concept....

“Let's Build a Phone Mapping App on Which People Can Record Flooding Information”
Evolving Into a Dynamic System

Build a Phone Mapping App

People

Flooding Information
FINANCIAL SUSTAINABILITY OF EFFORT
WHO ELSE IS INTERESTED IN PAYING FOR INFORMATION ON FLOODING?
Next Steps?

Find new users, define information needs, and develop IT and human factors elements for new networks

Test networking in different communities and regions

Find new collaborations – academics, private sector, local government
Conclusions

Smart Phone App can be part of a number of adaptation solutions – short and long term – if it is integrated into a broad strategy.

Smart Phone App network architecture makes management of more complex data collection possible.

Feedback from App users/network can be used to refine and specialize app.

Smart Phone App system, property designed and marketed, can become self-sustaining.
QUESTIONS?

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