

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



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Skip Stiles
Social Coast 2016



OVERVIEW

- More complete, more detailed, broader coverage of flooding events and locations is needed
- Flood information and collection network need to be part of an integrated adaptation strategy
- Information must be delivered to decision makers when they need it
- Information must be at level of detail to be useful to the targeted individual/organization
- Collection and dissemination of information must be affordable and sustainable



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OVERVIEW

- Broader public engagement on adaptation is needed = not just committed (older) population that comes to public meetings
 - Millennials
 - Young Families
 - Participants who do not want to “join”



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RAIN FLOODING – SEPTEMBER 8, 2014



City of Norfolk, VA Public Safety

Monday September 8th, 2014 :: 05:54 p.m. EDT

Advisory

**Coastal Flood Advisory from 9/8/2014 5:18 PM to
9/9/2014 12:00 AM EDT for City of Norfolk**

Message Expired

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



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RAIN FLOODING - SEPTEMBER 8, 2014



Virginian Pilot



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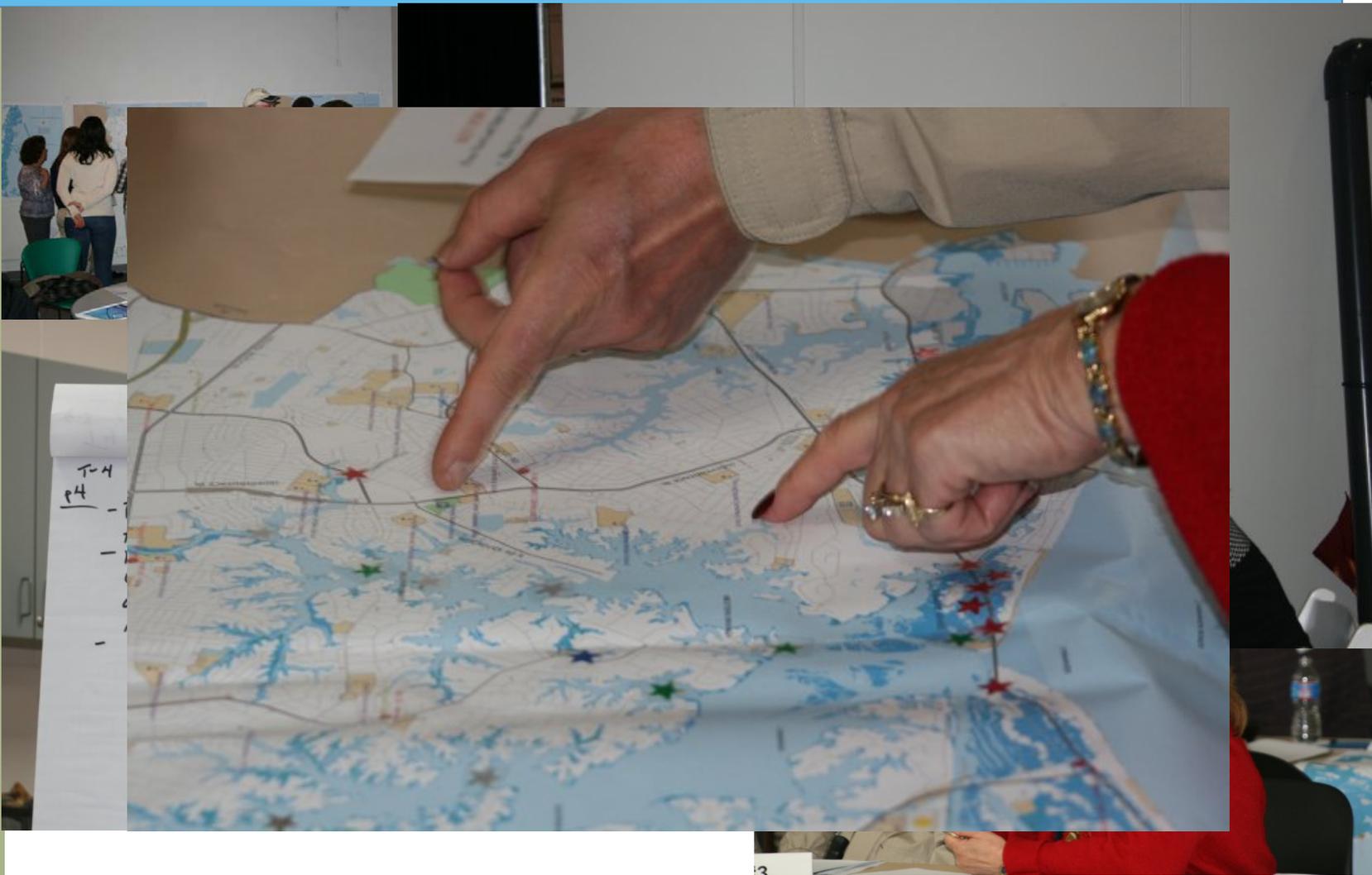
PHONE APP COMES FROM EARLY ANALOG OUTREACH



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LISTENING SESSIONS HELD IN EASTERN VIRGINIA



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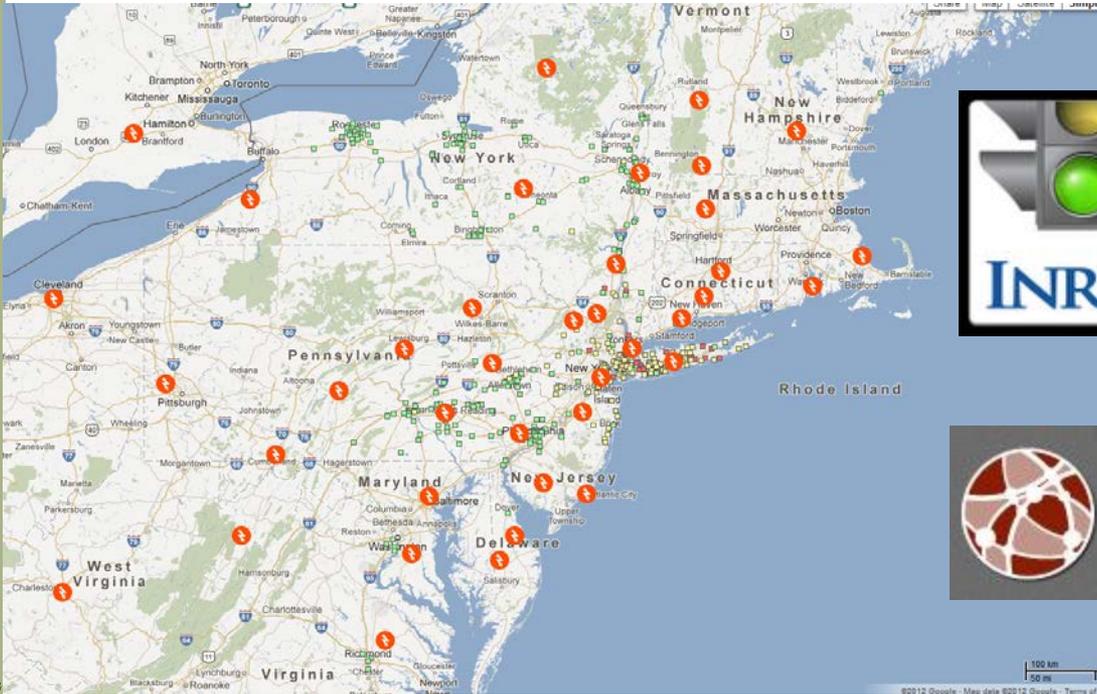
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SANDY SOCIAL MEDIA NETWORKS SHOWED THE WAY



Hurricane Hackers

facebook



OpenStreetMap
The Free Wiki World Map



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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)



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FIRST ORDER CONCEPT

“Lets **Build a Phone Mapping App** on Which People Can Record Flooding Information”

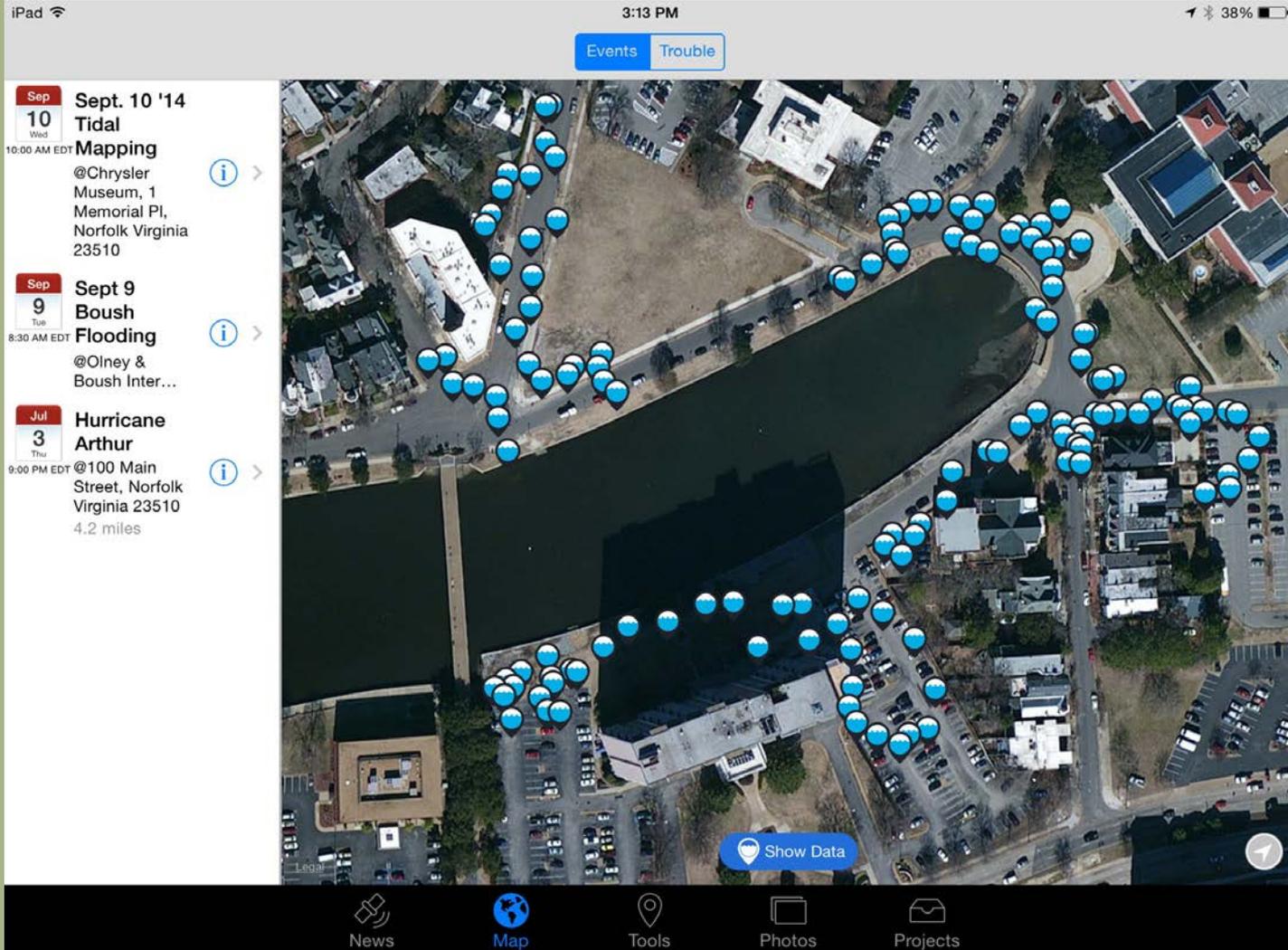
concurisive



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"SEA LEVEL RISE" SMART PHONE APP



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HARD PART STARTS AFTER THE APP IS DEVELOPED

“Lets Build a Phone Mapping App on Which
People Can Record **Flooding Information**”



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USER NEEDS HAVE TO BE DEFINED - WHAT DO YOU WANT TO CHANGE WITH THIS INFO?

“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?



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USER NEEDS DEFINE ARCHITECTURE AND OPERATION OF CROWDSOURCE NETWORK

“People”

- Higher precision/detailed data = greater people management needs
- Human factors issues become major focus – recruitment, training, retention, management



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RELATIONSHIP BETWEEN DATA, ADAPTATION, AND ADVOCACY = NETWORK MANAGEMENT

Adaptation Phase

Raise Awareness of
Problem

Advocacy Needs

Passive Recruitment
and Management

Data Needs

Periodic Flood
Data/Photos

Network Management

Passive Recruitment
and Management



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RELATIONSHIP BETWEEN DATA, ADAPTATION, AND ADVOCACY = NETWORK MANAGEMENT

Adaptation Phase

Planning and
Assessment of
Flood Impact

Advocacy Needs

Actively Recruited
and Maintained
Network

Data Needs

Coordinated Flood
Data/Photos

Network Management

More Training, Higher
Committment, and
Network “Permissions”



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RELATIONSHIP BETWEEN DATA, ADAPTATION, AND ADVOCACY = NETWORK MANAGEMENT

Adaptation Phase

Implementation Of
Adaptation Solutions

Advocacy Needs

Actively Recruited,
Trained, Managed,
Maintained Network

Data Needs

Consistently Collected,
Across A Broad Area,
Reliable Flood Data,
Longitudinal

Network Management

Frequent Contact And
Training, Decentralized
Management Strategy =
More Active
Management

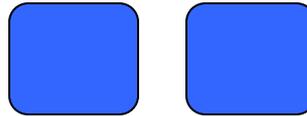
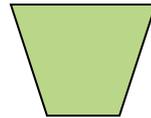


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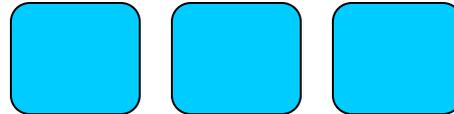
DATA COLLECTION NETWORK MANAGEMENT

“Manager” App
Certificate



“Champion” App
Certificate

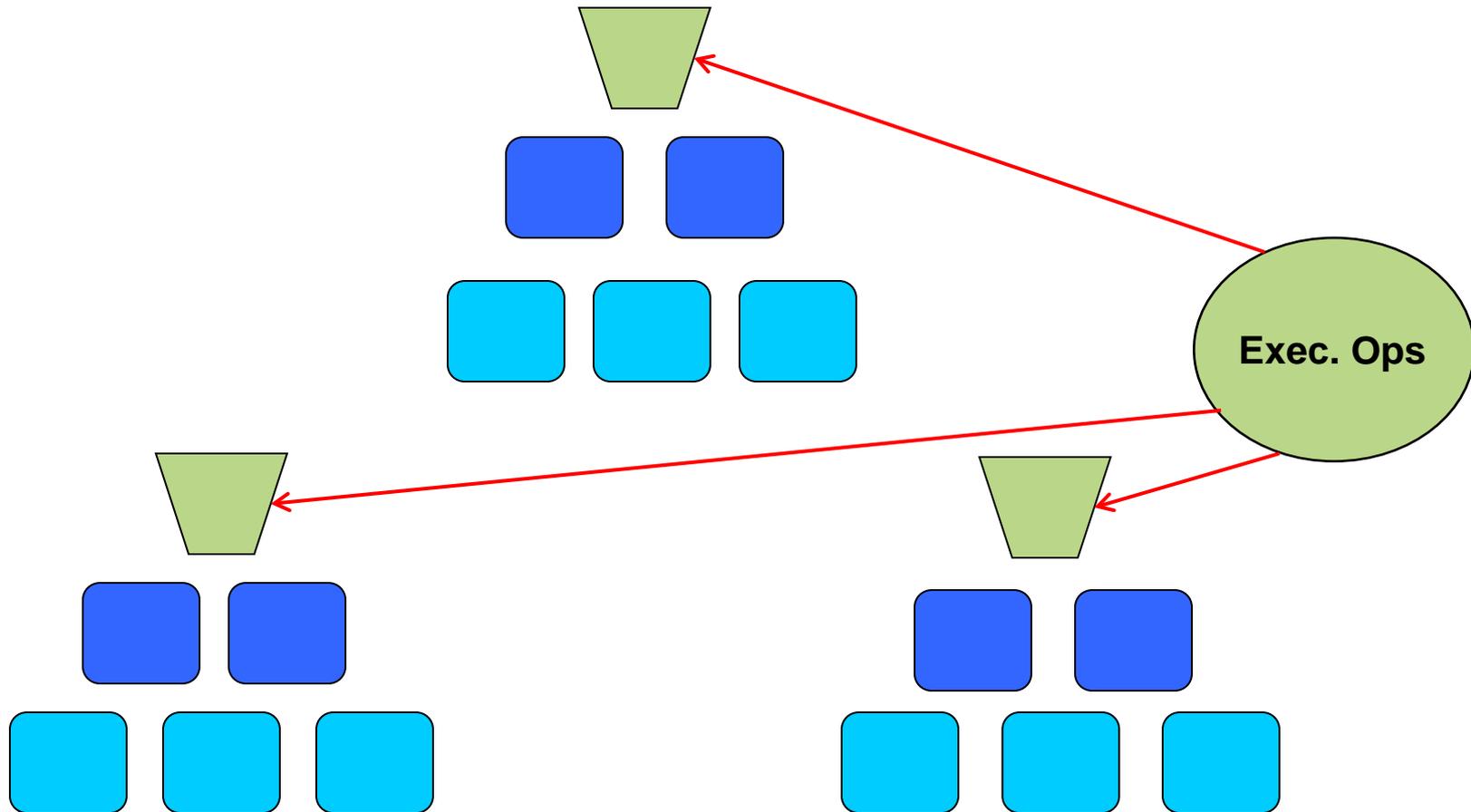
“VIP” App
Certificate



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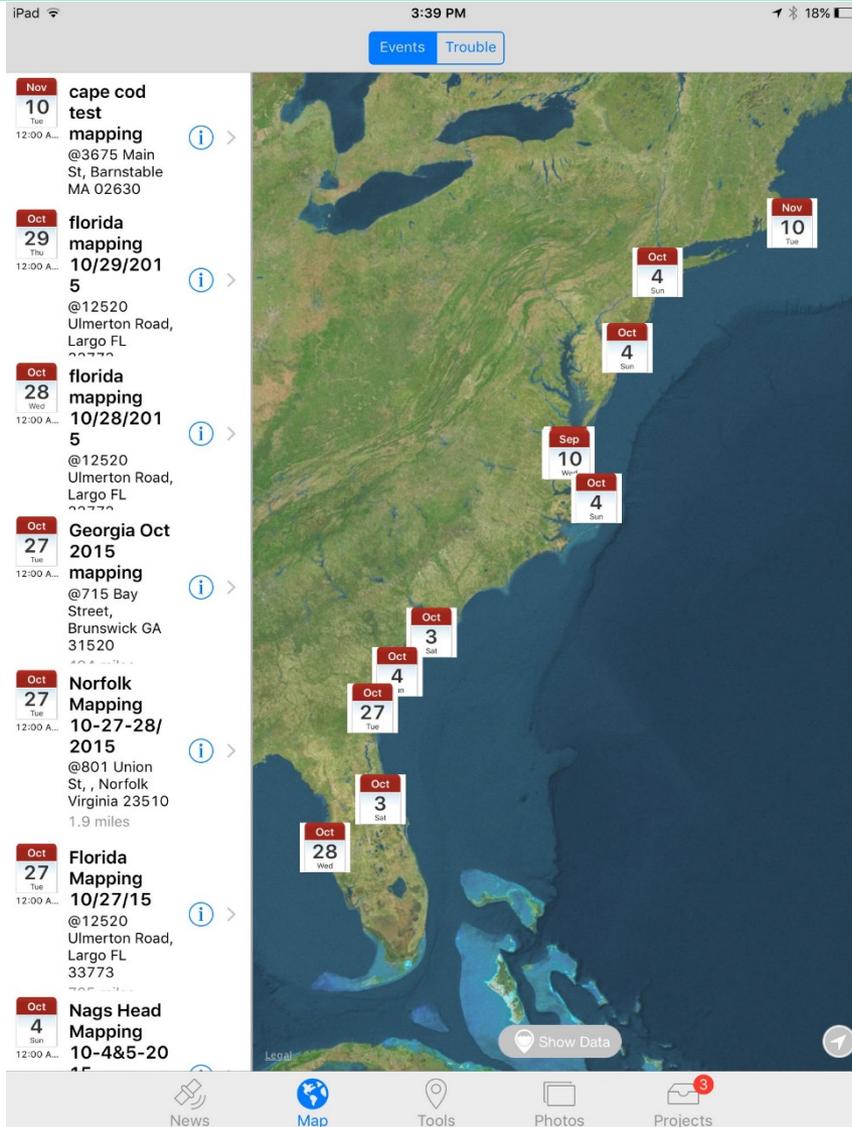
DATA COLLECTION NETWORK MANAGEMENT



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MAPPING EXERCISES ARE EXPANDING - JOAQUIN



Began Running Remote App Test With Hurricane Joaquin – Collaborators in FL, GA, SC, NC, NY

Remote App Testing Helping to Find Flaws, Design V 2.0



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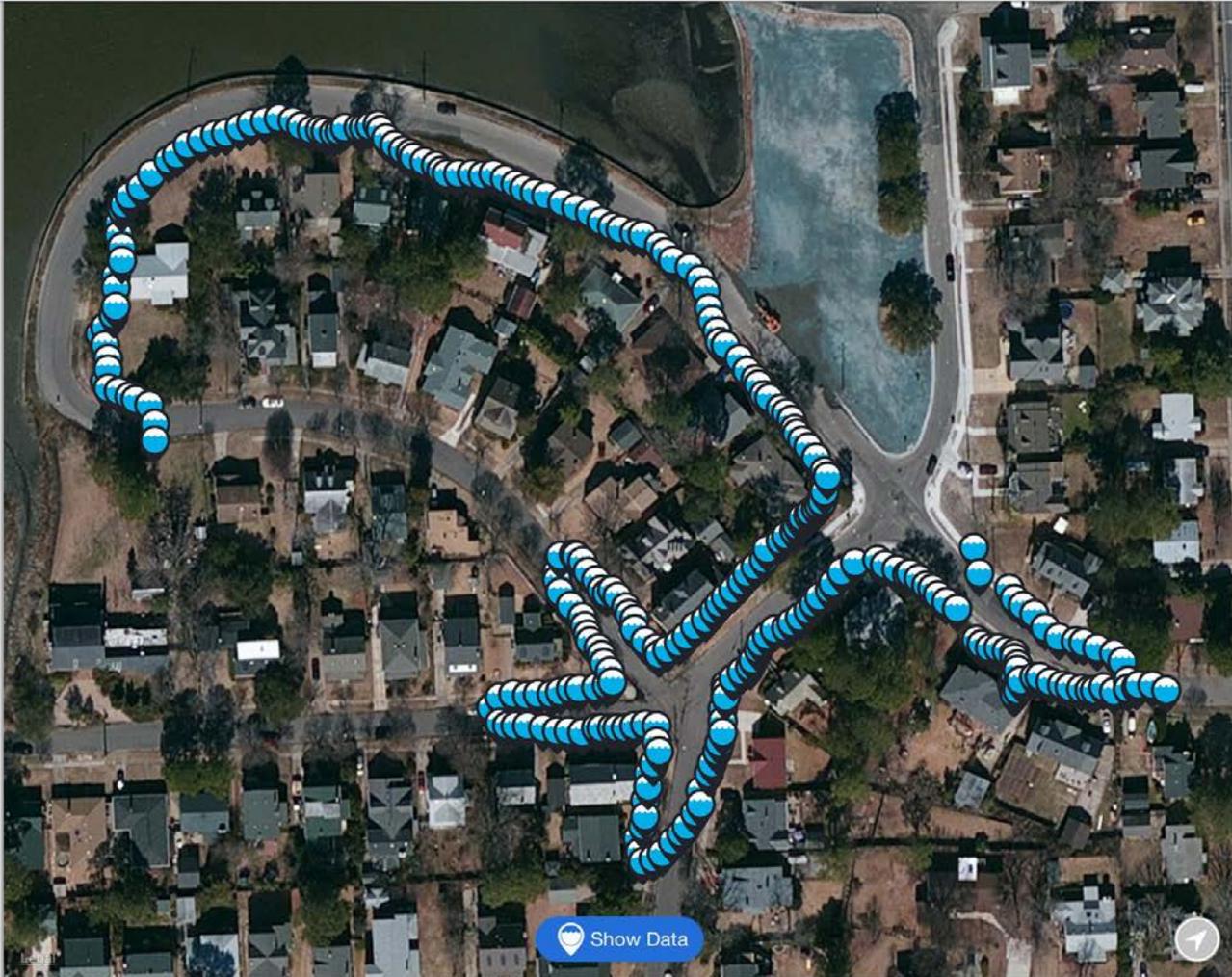
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DATA POINT COLLECTION DURING "KING TIDE"

iPad 12:10 PM 70%

Events Trouble

- Sep 27 Sun 12:00 AM EDT**
Storm Mapping 9-27-15
@810 Union St., Norfolk Virginia 23510
1.9 miles
- Sep 26 Sat 12:00 AM EDT**
Storm Mapping 9-26-15
@810 Union St., Norfolk Virginia 23510
1.9 miles
- Sep 25 Fri 12:00 AM EDT**
Storm Mapping 9-25-15
@810 Union St., Norfolk Virginia 23510
1.9 miles
- Sep 24 Thu 12:00 AM EDT**
Storm Mapping 9-24-15
@1121 Graydon Ave, Norfolk VA 23507
nearby
- Sep 23 Wed 1:20 PM EDT**
Storm Mapping 9-23-15
@728 Pennsylvania



Show Data

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DATA POINTS EXPORTED AS .CSV FOR SHAPE FILE

exported data

FILE HOME INSERT PAGE LAYOUT FORMULAS DATA REVIEW VIEW

Clipboard Font Alignment Number Conditional Formatting Table

R3832

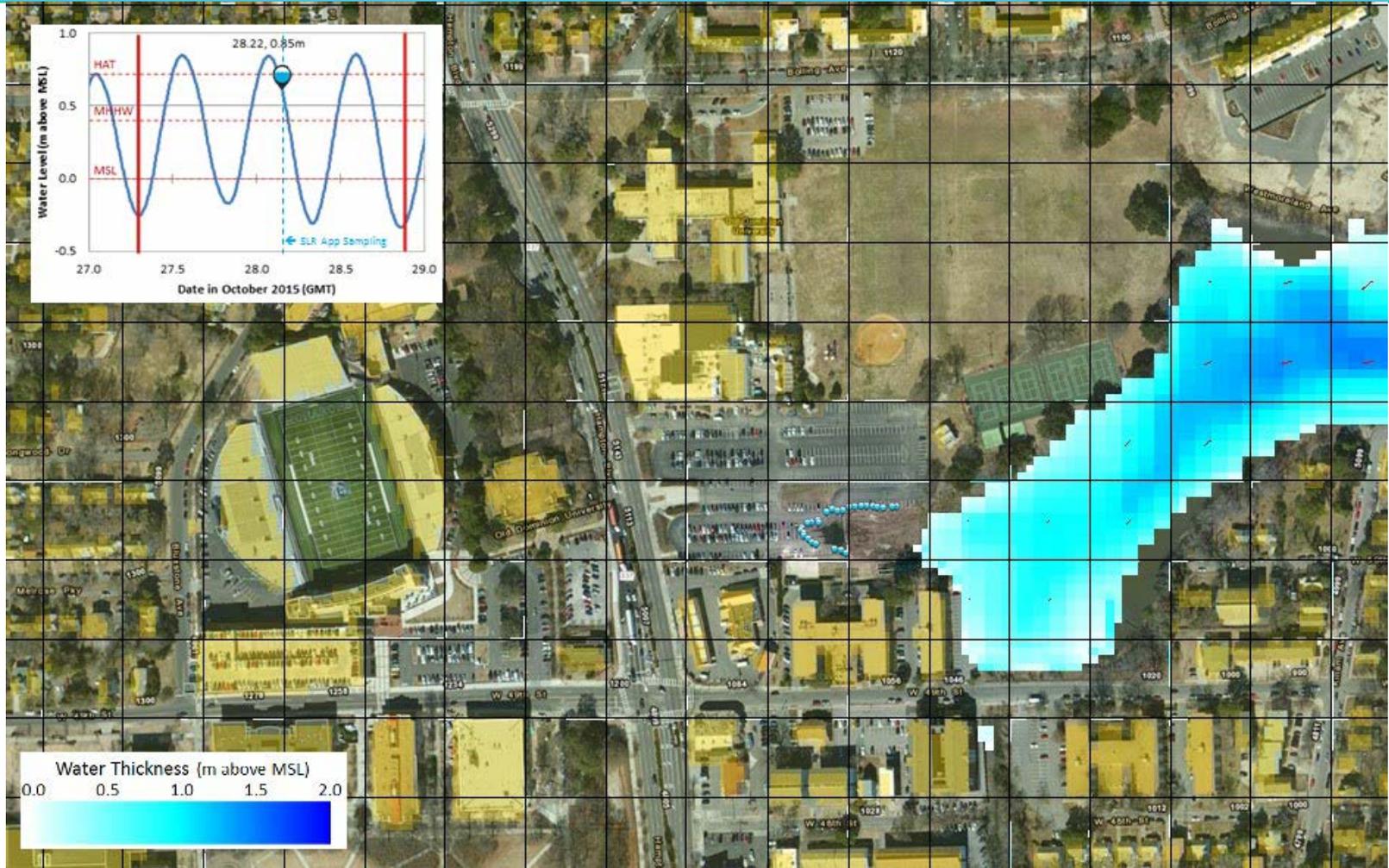
	A	B	C	D	E	F	G
1779	1491	Storm Mapping 9-26-15	687	57:40.9	36.88188934	-76.29395294	
1780	1491	Storm Mapping 9-26-15	687	57:54.1	36.88196564	-76.2939682	
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1782	1491	Storm Mapping 9-26-15	687	58:09.0	36.88204193	-76.29397583	
1783	1491	Storm Mapping 9-26-15	687	58:15.9	36.88208389	-76.29397583	
1784	1491	Storm Mapping 9-26-15	687	58:16.4	36.88208389	-76.29397583	
1785	1491	Storm Mapping 9-26-15	687	58:22.8	36.88210678	-76.29397583	
1786	1491	Storm Mapping 9-26-15	687	58:29.2	36.8821373	-76.29395294	
1787	1491	Storm Mapping 9-26-15	687	58:35.7	36.88217545	-76.29392242	
1788	1491	Storm Mapping 9-26-15	687	58:42.5	36.88223648	-76.29390717	
1789	1491	Storm Mapping 9-26-15	687	58:49.0	36.88224792	-76.29389954	
1790	1491	Storm Mapping 9-26-15	687	58:55.8	36.88228226	-76.29390717	
1791	1491	Storm Mapping 9-26-15	687	59:02.7	36.88231659	-76.29389954	
1792	1491	Storm Mapping 9-26-15	687	59:15.9	36.88234711	-76.29389954	
1793	1491	Storm Mapping 9-26-15	687	59:22.0	36.88237762	-76.29389191	
1794	1491	Storm Mapping 9-26-15	687	59:28.2	36.88238907	-76.29387665	
1795	1491	Storm Mapping 9-26-15	687	59:34.6	36.88241196	-76.29389191	
1796	1491	Storm Mapping 9-26-15	687	59:41.1	36.88243103	-76.29392242	
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1798	1491	Storm Mapping 9-26-15	687	59:53.9	36.88250732	-76.29387665	
1799	1491	Storm Mapping 9-26-15	687	59:59.8	36.88254166	-76.29387665	
1800	1491	Storm Mapping 9-26-15	687	00:06.2	36.88259506	-76.29387665	
1801	1491	Storm Mapping 9-26-15	687	00:12.8	36.88264084	-76.29388428	
1802	1491	Storm Mapping 9-26-15	687	00:19.2	36.88267517	-76.29387665	
1803	1491	Storm Mapping 9-26-15	687	00:25.6	36.88273239	-76.29388428	
1804	1491	Storm Mapping 9-26-15	687	00:32.6	36.88277435	-76.29386139	
1805	1491	Storm Mapping 9-26-15	687	00:38.9	36.88279343	-76.29387665	
1806	1491	Storm Mapping 9-26-15	687	00:45.6	36.88282776	-76.29390717	
1807	1491	Storm Mapping 9-26-15	687	00:52.0	36.88286591	-76.29390717	



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DATA BEING EXPORTED AND USED IN MODELS



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Derek Loftis – VIMS



FINANCIAL SUSTAINABILITY OF EFFORT



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WHO ELSE IS INTERESTED IN PAYING FOR INFORMATION ON FLOODING?



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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

Develop “franchise” scheme to pay for system operation and training



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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, properly designed and marketed, can become self-sustaining



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CONCLUSIONS

Smart Phone App could be part of an advocacy recruitment and networking strategy to push adaptation implementation



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b1uε
moon

FUND

QUESTIONS?



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