



Extending Into the Community



Paraphernalia in community

During the walk



Engaging people with information in everyday life

QR Codes in Nature

Co-production of murals about stormwater

After the walk



Ideas for engaging communities with stormwater data

Education Students



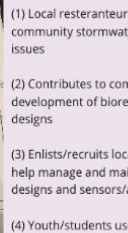
Notes: Representatives from key stakeholders: UMD Facilities; Riverdale Park; University Park; Berwyn Heights, College Park, North Brentwood; Brentwood; Cheverly; Laurel; PGC-Council; PGC-DPW&T; M-NCPPC; Green consulting businesses; non-profit community orgs (Greenbelt Homes Coop; Metamorphosis; Joes Stream Team)

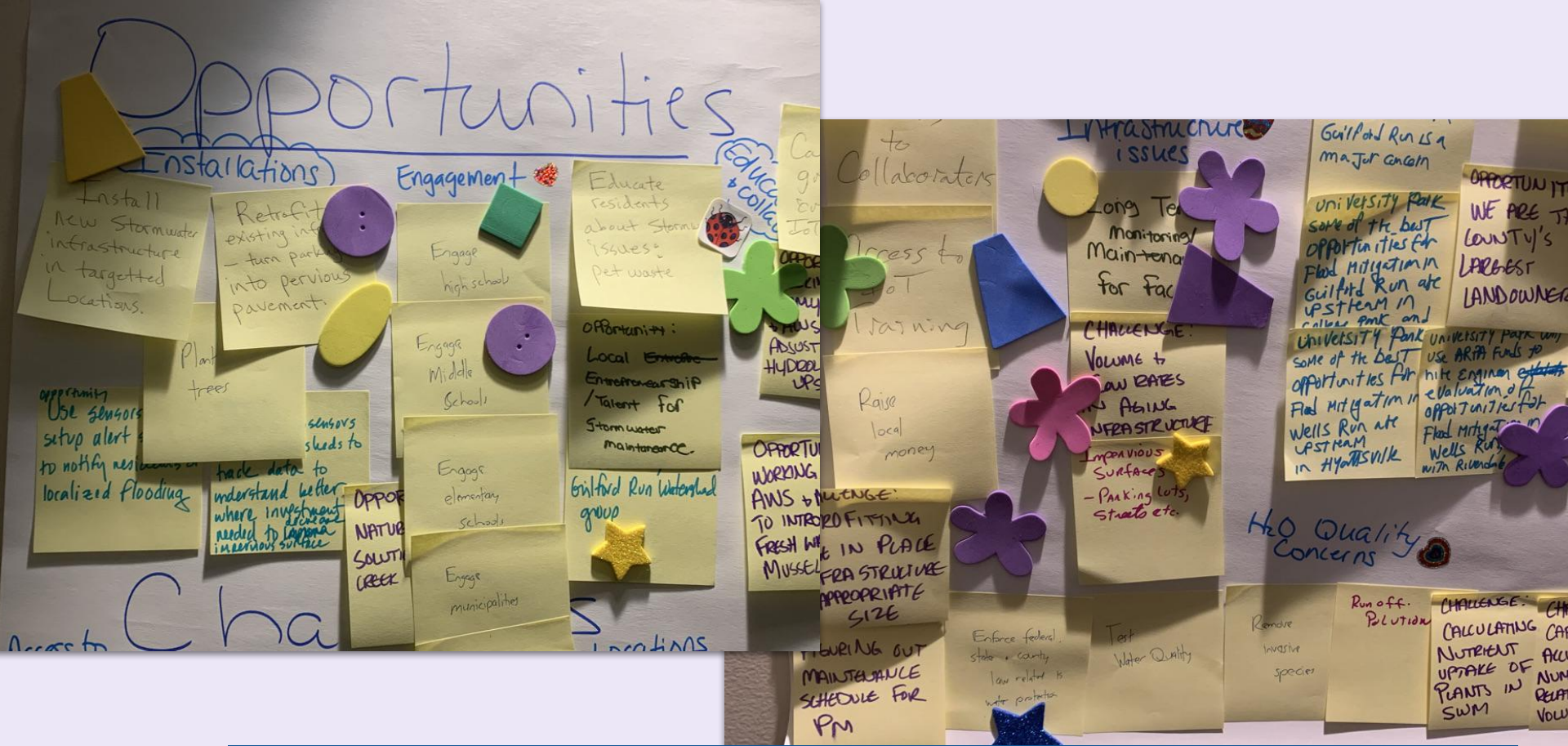
Representatives from
key stakeholders

Community participants

Share local observations & concerns

Community Co-Design





Community Challenges & Opportunities

WATER-RELATED OBSERVATIONS, CHALLENGES, OPPORTUNITIES, LOCATIONS !!



Community Challenges & Opportunities



Recent Storms

Stormwater Infrastructure
& Drainage Issues

Litter & Trash in Catchment
Areas

Community Concerns



September 2020 Flash Flood

Community Concerns



BIG IDEAS/THEMES

Jason / Tony
umb Facilities Clark
Army Corps of Eng.

Understanding + mapping
water movement
(challenges)
↳ Funding for this is
hard
Drainage, quantity +
quality
Stormwater assessments
+ analysis

Amanda, Bill, John,
Frank + Charles
Former Mayor Univ. Park
Graham (PGC)

Stormwater man. in University
Park
How they were solving probs. in
Berwyn Heights?
(wandered)
Standards in diff. properties
are different based on
when they were developed
↳ Probs. for downstream
communities.

Larry, Laura, Brian, Peter
Davis

Mr. Bubba Gump calls to open
business in Riverdale sees flooding
Local high school students call
too
Bioretention designs developed
Bubba gets local students to do
↳ long-term maintenance
↳ use IoT sensors
Bubba-neers

Enn, Kevin, + Heather
Meyer, McNeil
Zero Stream Team

Zero waste in Anacostia River (goal)
↳ one goal is next to umb
Experience exploring stormwater systems/brains
around litter streams
↳ observed litter spots washing into
storm drains -> poor the quality
Litter prevention + identification
Neighborhood litter watch + Neighborhood
cleanups
Campaign to raise awareness + change
behavior
Getting out + walking
PG Litter app
Difficulty prioritizing infrastructure

Ryan
Chelton

Storm that devastated homes
(Wells Run, 410)
Measuring current stormwater
precautions/procedures
Survey to find from community
where they are seeing water issues

Danielle, Andy, Michael, + univ. Park
Glauns, Fellows, Dickson

Wells Run + Guilford Run projects
Small teams that need addl. staffing
↳ Periodic flooding
Bring together partners + stakeholders from
each watershed
Place sensors in key locations to
identify hyperlocal projects
Advance to early alert system to
notify residents
↳ not impending flood, what to
do
Informing more planning + dev.
Quantity Real-time data +
Quant. results

BIG IDEAS AND NEXT STEPS

Jason (UMD) and Tony C. (Army Corps of Engineers)

- The core of our story is tied to the community understanding and learning about
- (1) how to understand the flow of water/water movement in your particular neighborhood
 - drainage, quantity, quality
 - (2) how to have the tools in place to understand where your neighborhood/community is in terms of knowing what the issues are
 - stormwater assessments

University Park's Group (former mayor/John Tabori, Amanda, Bill, Frank, Charles Griffith)

- Focus on questions of whether flooding issues have been ameliorated or not
- Considered Berwyn Heights experience
- Longstanding issue (>20 years) Stormwater management standards are often different depending on when they were developed - (do we need more coherent standards across the board?)
- Understanding how these variable standards have an effect downstream

Team/Room 3 - Stream Team focus - reducing litter/trash clutter in storm drains

- Kevin, Heather, Erin Meyer
- Anacostia River goal: trash-free river / "Zero Waste" in Anacostia
 - One of their sites is close to UMD
 - Exploring litter traps around the streams / water entry ways
 - Litter prevention and identification
 - Campaigns to address
 - Can we address some of the "clogging" of these litter traps and storm drains in order to ensure better flow into the streams entering larger waterways (e.g., NE branch of Anacostia)
 - Instantiating "Neighborhood Litter Watch"
 - Awareness of the Litter App

Team 4: Ryan

- Remembering the storm that devastated homes (Wells Run)
- Measure current stormwater precautions/procedures
- Conducting a survey to encourage community members to share these water issues to raise awareness @ UMD and municipalities

In-person groups

Larry, Laura, Brian, Peter

- Story of Bubba Gump Shrimp restaurant
- Bubba notices that there is periodic flooding in Riverdale Park, where his restaurant is
 - He helps community set up bioretention designs
 - He collaborates with local youth (high school students) to maintain these designs
 - The students use IoT sensors as part of their maintenance
 - Introducing the "Bubba-neers"

Wells Run and Guilford Run Watershed group (University Park in-person team)

Facing periodic flood challenges with small teams that need additional staffing

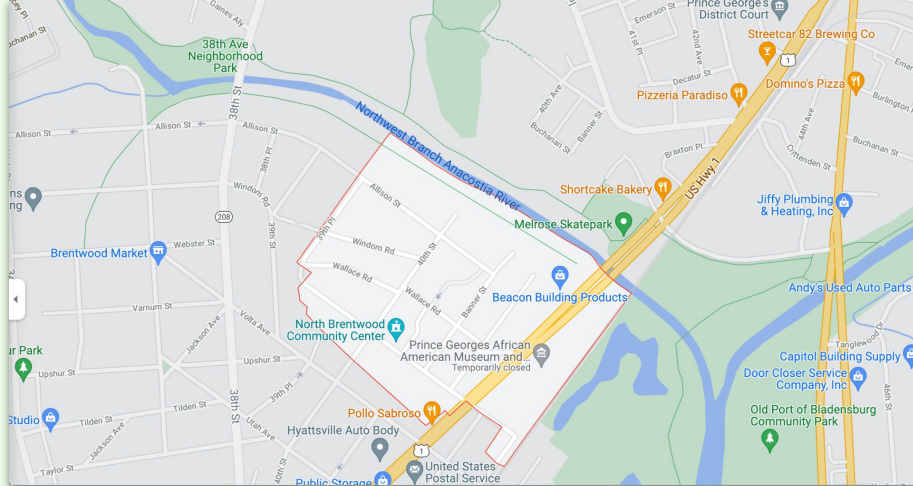
- Bring all the stakeholders together => partners and stakeholders from each watershed area
- By collecting the data real-time, would have enough to prioritize hyperlocal actions, projects, locations
- If we can prioritize these sensors in hyperlocal areas, we can:
 - (1) Implement "hyperlocal alerts" for early warning system that notifies residents
 - (2) Quantify real-time data with quantifiable results (e.g., impending flood)
 - (3) Inform planning/mitigation responses that target these hyperlocal areas more personally and show up for the residents who are most impacted

Additional Big Ideas.... (major themes related to all teams' stories)

(1) Having a means for sharing these stories more often to help coordinate resources and networking and developing *stewardship* groups

(2) viewing the network of communities interested in these issues as connected as we view the waterways / watersheds that are around us

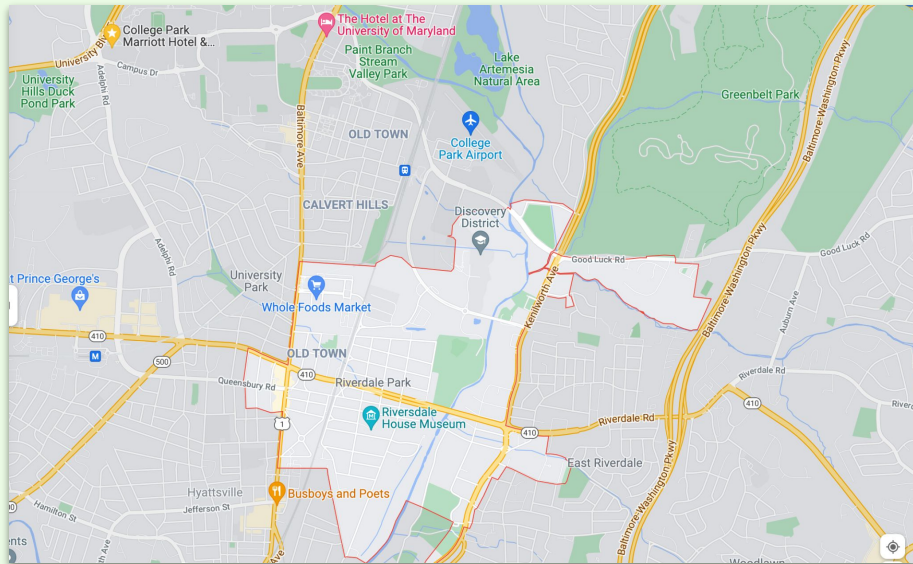
Key Take-aways



Water movement/flow
& water build-up

Litter & trash locations

Community projects



Community Mapping



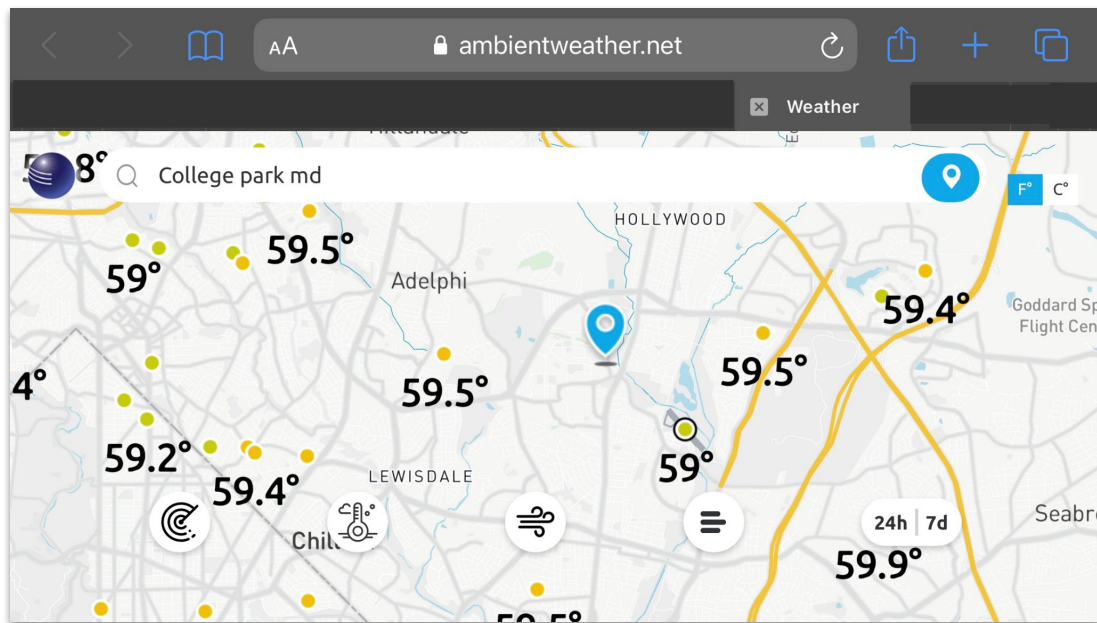
Bioretention designs
for infrastructure

Early alert systems

Sensor-driven policies

Visualizations

Building tools, technologies, & resources



Bioretention designs
for infrastructure

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Storyboard Wells Run Watershed — Guilford Run Watershed		
Bring Wells Run Watershed together all the way to NE Branch	Placement of sensors in key locations to understand quantity identify targeted flood mitigation projects	Early hyperlocal alert system for residents alert on what to do in a flood
caption/text:	caption/text:	caption/text:
Implementation hyper-local watershed flood mitigation projects based on data collected	Continue gathering data + pivoting to inform planning + development	Sensors quantify realtime data and demonstrate mitigation of flooding
caption/text:	caption/text:	caption/text:

- (1) Bring Wells Run Watershed together all the way to NE Branch
- (2) Place sensors in key locations to understand, quantify, identify targeted flood mitigation projects
- (3) GATHER DATA
- (4) Early hyperlocal alert system for residents -- alerts on what to do in a flood
- (5) Implementation of hyperlocal watershed flood mitigation projects based on data collected
- (6) Continue gathering data and pivot to inform planning/development
- (7) Sensors quantify realtime data and demonstrate mitigation of flooding

Building tools, technologies, & resources



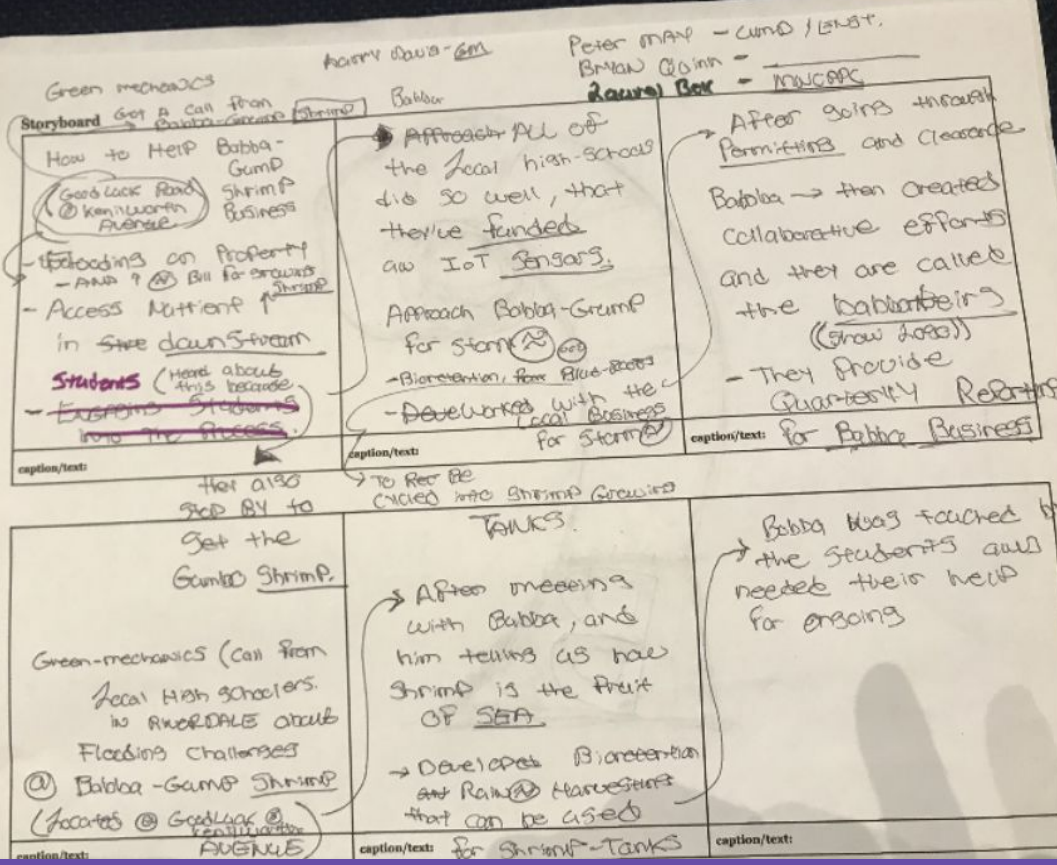
A map of Riverdale, Maryland, showing various schools and parks. The map includes labels for 'College Park Marriott Hotel &...', 'University of Maryland', 'Paint Branch Elementary School', 'College Park School Closed', 'Park Airport', 'Greenbelt Park', 'Baltimore-Washington Pkwy', 'Good Luck Rd', 'Auburn Ave', 'Kenilworth Ave', 'Georgetown Hill Early School Closed', 'Parkdale High School Closed', 'William Wirt Middle School Closed', 'Riverdale Hills School', 'Wildercroft School', 'Beacon Heights Elementary School Closed', 'Saint Bernards School', 'Riverdale Elementary School Closed', 'Chelsea School Closed', 'Riverdale Park', 'OLD TOWN', 'Queensbury Rd', 'East Riverdale', and 'Templeton'. There are also icons for schools and parks.

Watershed management programming
in schools, youth clubs

Monitoring neighborhood sensors

Sustainable stewardship

Engaging community youth



- (1) Local restaurant notices local community stormwater runoff issues
- (2) Contributes to community development of bioretention designs
- (3) Enlists/recruits local youth to help manage and maintain these designs and sensors/activities
- (4) Youth/students use IoT sensors

Engaging community youth

The "Bubbaneers!"

Continue sharing stories

Neighborhood Network of IoT
sensors & visualizations

Funding opportunities

Next steps ...

