# Agile in 160B Gallons

# WHEN AGILE PRINCIPLES OCCUR DURING A DISASTER

Drew Shefman @dshefman

During a disaster, like a flood, natural tendencies gravitate toward a more agile approach; not waterfall.

Without intentionality,
key agile practices might get
overlooked.

# The Plan

- 1. Agile concepts with a flood metaphor
- 2. Highlighting critical missing agile practices
- 3. Personal flood lessons related to agile

#### Waterfall



The waterfall model is a sequential design process in which progress is seen as flowing steadily downwards (like a waterfall) through the phases of conception, initiation, analysis, design, construction, testing, production, and maintenance.

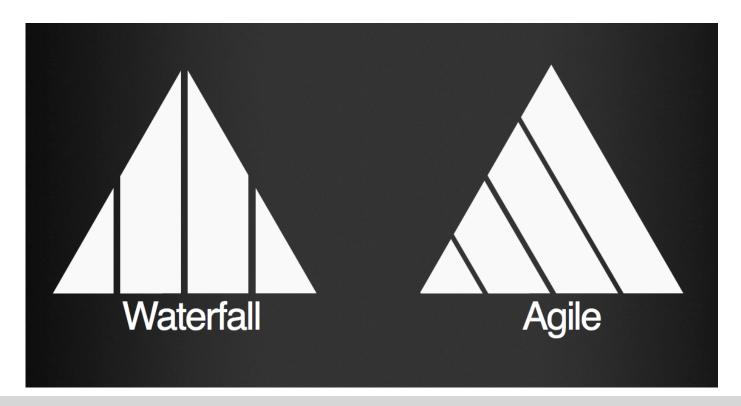
# Agile



Agile software development describes a set of values and principles for software development under which requirements and solutions evolve through the collaborative effort of self-organizing cross-functional teams.

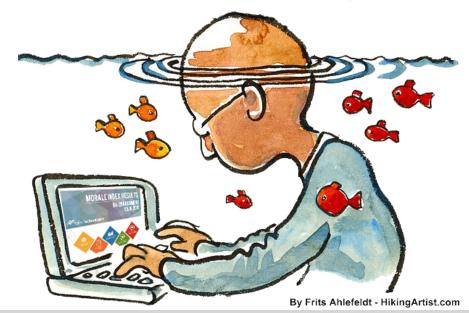
### Waterfall vs Agile

There is no way to know if a house will flood, or how high the water will rise.



#### **Drew Shefman**

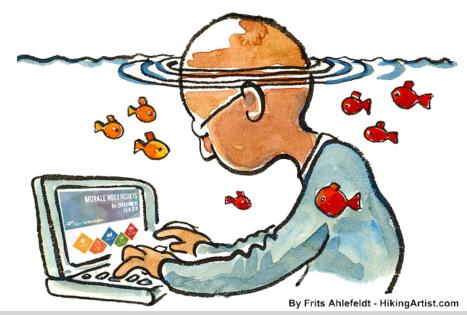
- 27" Memorial Day 2015 (162 Billion Gallons)
- 13" Tax Day 2016 (240 Billion Gallons)
- -5" Harvey 2017 (9 Trillion Gallons)
   (Elevated house 1 day before)
- 22 years software development
- 18 years as an Agile Advocate



#### **Drew Shefman**

Each time it flooded we got better...

- Luck
- Planning
- Experience
- Introspection



#### **Flood Stories**

Everyone I've talked to has a flood story.

And every story is completely different.



### Survey

Have you been personally impacted by a flooding event?



### Survey

How many people experienced rising water in or around your home?



### **Flooding Context**

Just so we are all on the same page... Here are some home flooding images...

**Trigger Warning** 

















# Survey

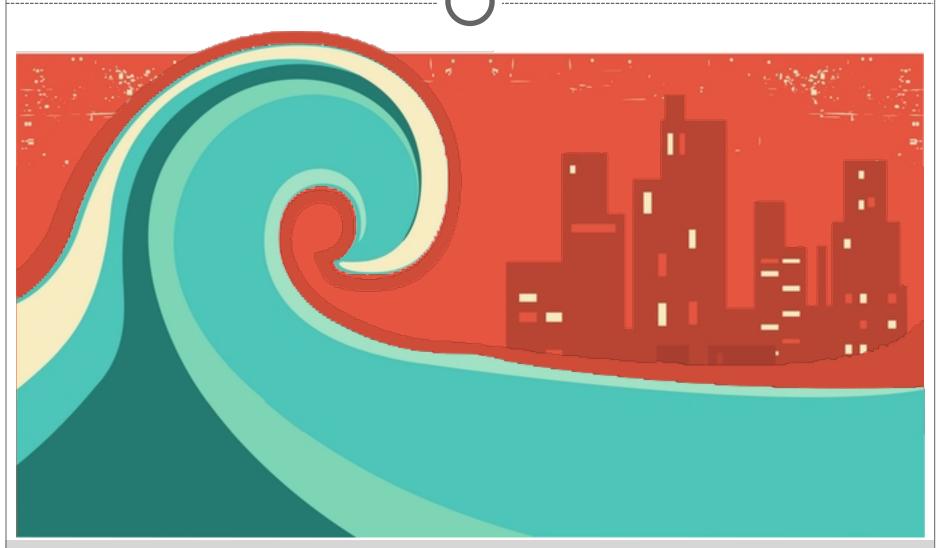
If you flooded, or can imagine these images as your house, what would you do during a flood?

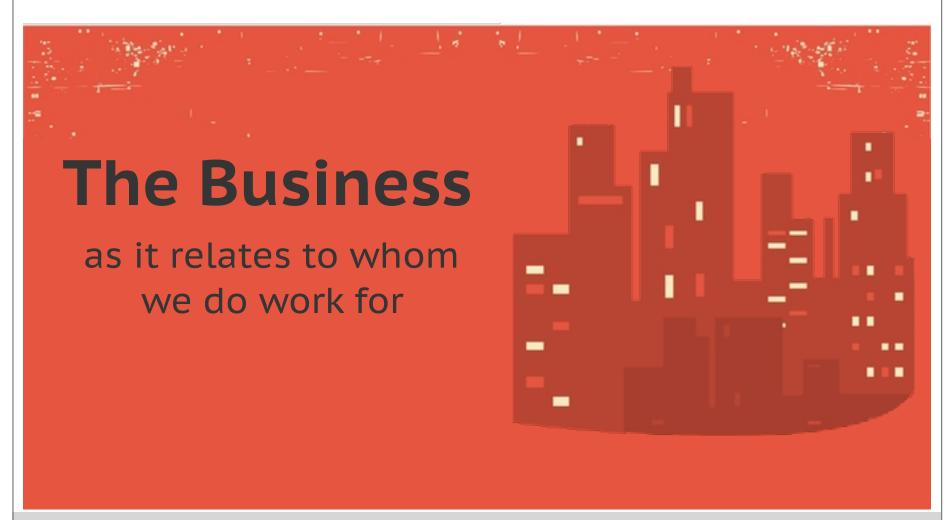


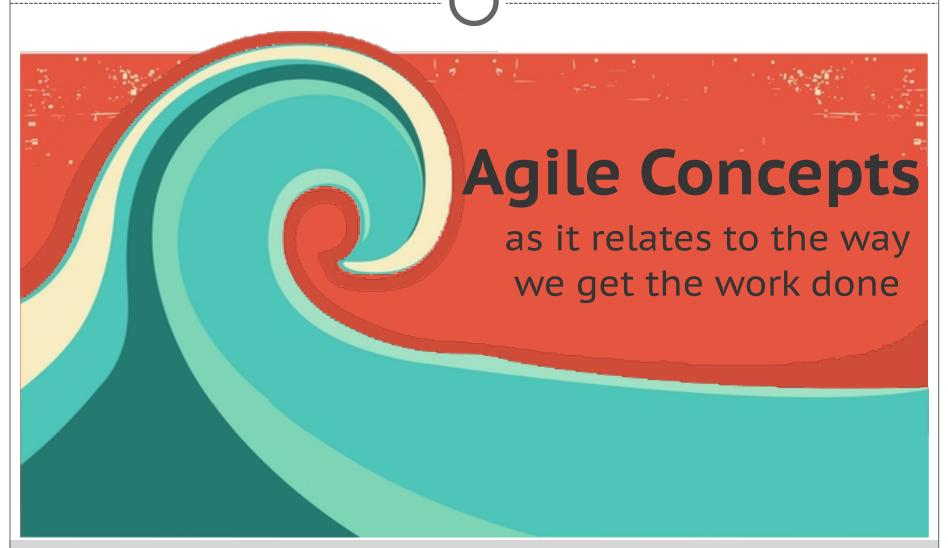
# Agile Concepts with Flood Metaphor

- NATURALLY OCCURRING
- PARTIALLY PRESENT
- RARELY APPLIED

**DURING A DISASTER** 





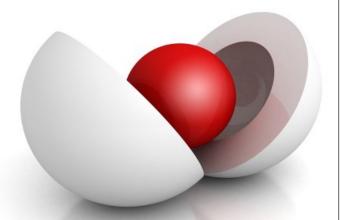






#### My House

My house's core function is to be my home





# Should support the core of the business

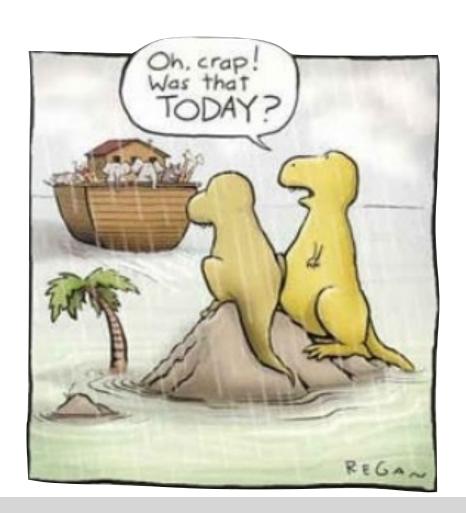
The product during a flood is to preserve the items that support my home's purpose:

- Sleeping
- Eating
- Working
- Relaxing
- Security
- Storage



#### Deadline

#### Water is in the house





How high the water will rise?

The product is only as good as its planning for variability.



### **Naturally Occuring Concepts**

- Backlog
- Prioritized Backlog
- YAGNI
- Frequent Team
   Communication



# Backlog

A backlog is a list of features or tasks which the team maintains and which, at a given moment, are known to be necessary to complete a project



# For me, rising water means that I prepare to Save Our Stuff





#### Backlog

How would you attack a backlog of your household items during a flood?





# How could you order a backlog?

- Floor -> Counters
- Irreplaceable -> Common
- Expensive -> Cheap
- Useful -> Unnecessary
- Nearest -> Farthest
- Front of House -> Back of House



# How should you order a backlog?

Highest Value



Lowest Value



# Be aware of implicit and explicit prioritization





#### **Implicit Priority**

Ordering the backlog correlated toward easiness or convenience.



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#### **Explicit Priority**

Ordering the backlog correlated with the value it delivers to the business.



# Prioritized Backlog

#### **Explicit Priority**

Ordering the backlog correlated with the value it delivers to the business.

- Irreplaceable -> Common
- Expensive -> Cheap
- Useful -> Unnecessary



### You Aren't Gonna Need It

It is a mantra that some capability that could be built for the future should not be done now because "you aren't gonna need it" (yet).



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It is a mantra that some capability that could be built for the future should not be done now because "you aren't gonna need it" (yet).

There were some things that were not worth saving.

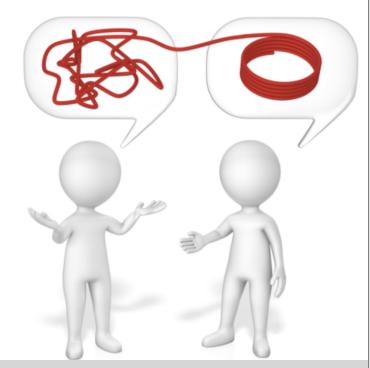




# Frequent Team Dialog

"Standup"

Frequent and regular communication about work accomplished, immediate goals, and blockers.

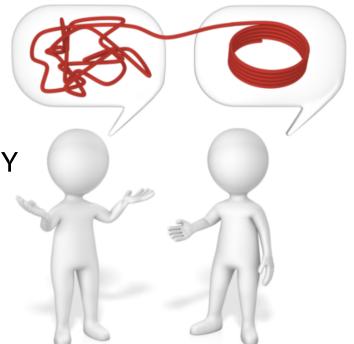


# Frequent Team Dialog

"Standup"

Frequent and regular communication about work accomplished, immediate goals, and blockers.

- X is done
- I'm cleaning up Y
- I need help moving the Z



## **Partially Present Concepts**

- Self Organized Cross Functional Team
- Iterations



# Self-Organized

Cross Functional

Team

#### Self Organized

A group of motivated individuals, who work together toward a goal, have the ability and authority to make decisions, and readily adapt to changing demands.



# Self-Organized Cross Functional Team

#### Self Organized

For us, our kids worked with very little guidance.

We defined priorities, then let them take care of their rooms and their stuff.



# Self-Organized Cross Functional Team

#### Self Organized

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We defined priorities, then let them take care of their rooms and their stuff.

Caution: This only works if the goal of the product and how it supports the business, is well defined and understood

# Self-Organized

# Cross Functional

Team

#### **Cross Functional**

Cross-functional just means that the team as a whole has all skills needed to build the product, and that each team member is willing to do more than just their own thing.





# Self-Organized

### Cross Functional

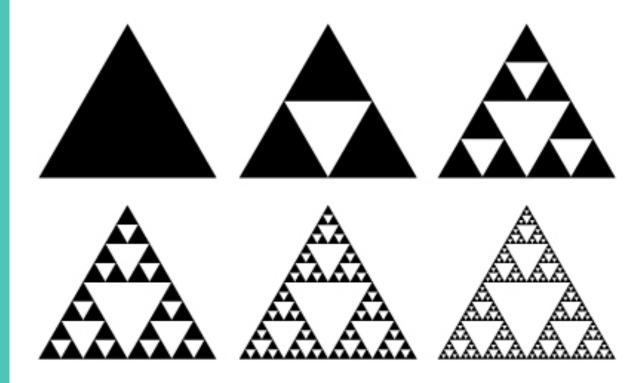
Team

#### **Cross Functional**

For us, we have two people strong enough and tall enough to put things up high.

Our kids are also expert fort builders and can stack and climb if needed

A repeating set of work to get done before reflecting on the progress, objectives, and external influences





### Produce Potentially Releasable Products

It doesn't mean that the product is going to be released at each iteration, but it is at a done enough state that it could be and it would have value.





### Produce Potentially Releasable Products

At an indeterminate deadline, the most valuable items are complete and the product is "released" by that time.





### Produce Potentially Releasable Products

If more iterations happen a better product with even greater value is created, but the understanding is that each iteration could be the last one.





### Produce Potentially Releasable Products

When water is in the house, the most valuable items from the prioritized backlog are saved.

#### Iterations: Concrete example

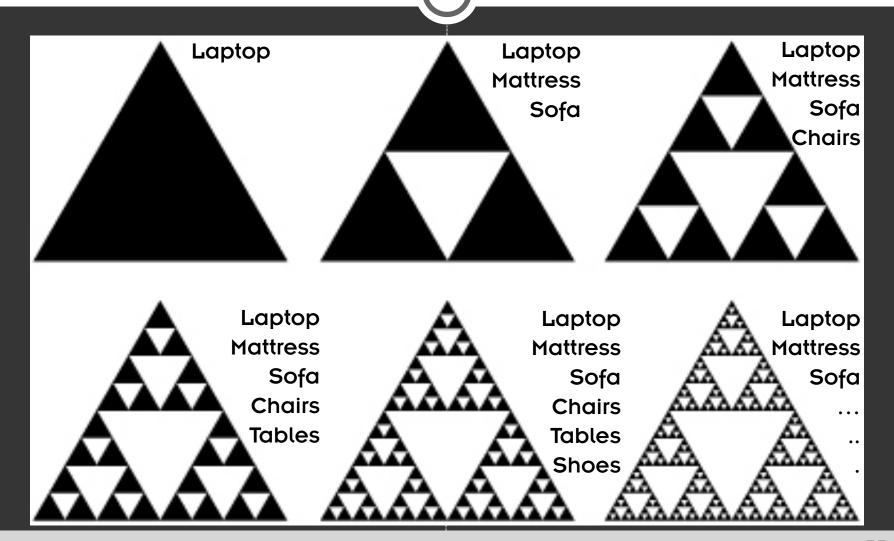
# Prioritized Backlog (Usefullness)

- Working
- Sleeping
- Sitting
- Eating
- Clothing
- Art

#### <u>Iterations</u>

- Laptops, cell phones, chargers
- Mattresses
- Chairs and sofas
- Tables
- Other furniture
- Shoes
- Floor statues

#### **Iterations: Concrete example**



### **Rarely Applied Concepts**

- Demo
- Sprint Planning
- Retro

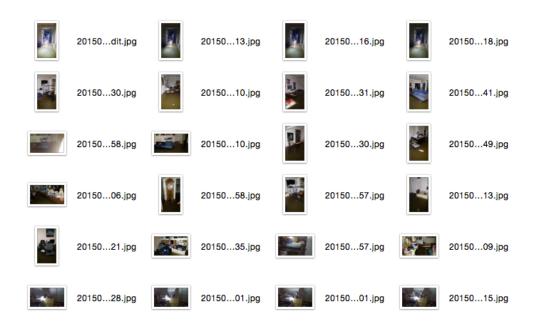


An activity at the end of an iteration where the completed (done) product backlog items are demonstrated with the goal of promoting an information-rich discussion between the team and other stake holders.





At the end of each iteration was our chance to take photos and assess the house to see if we missed anything that should have been in that round of "saving"





During flooding, the demo is also a chance to post to social media.

It wasn't our intention but we got lots of feedback during the process which was helpful.



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"Call insurance"

"Start calling apartments"

"I know a good contractor"

# Sprint Planning

A time-boxed meeting where the next highest priority items are reviewed and the team commits to which items are going to be finished during the sprint





# Sprint Planning

Determine the plan based on data



#### Determine the plan based on data

- Radar
  - Current
  - Future
- Rain accumulation
- Bayou water levels
- Visual checks
- Social media updates



# Sprint Planning

Determine next round of work



#### Determine next round of work

- Does it need to be saved?
- How is it going to be saved?
- Where was it going to go?
- Is refactoring involved (moving already positioned furniture to accommodate next sprint)?
- Anything require 2 (or more) people?

During the retrospective meeting, the team reflects on what happened in the iteration and identifies actions for improvement going forward.





Issue: We are running out of high spaces to put things.



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Solution: Bring in outside furniture to use as supports, then create platforms using interior doors.



Issue: Dining room table is huge and will keep a lot of things up high, but legs will be in the water.



Issue: Dining room table is huge and will keep a lot of things up high, but legs will be in the water.

Solution: Trash bags and duct tape around the legs.

# Agile: The Critical Practices

WHY ARE THE DEMO, RETRO, AND SPRINT PLANNING CRITICAL PRACTICES?

13.30



Retro

Planning

# Summarizing agile broadly comes down to:

- Transparency
- Inspection
- Adaptation



# WHY ARE THESE CRITICAL?

Demo

Retro

Planning

During a crisis or critical deadline, I found from informal polls, that most often the immediate task remain exclusively in focus.

- Decisions / outcomes frequently lacks inspection
- Constraints / challenges
   frequently lacks adaptation



"Am I doing the right task?"

Demo

Retro

Planning

Should I be saving all the things on the floor first, or are there more important things to save?



"Am I doing the task right?"

Demo

Retro

Planning

The countertops had existing clutter, therefore there was minimal elevated space to save the next iteration of things



"Can I do this task better?"

Demo

Retro

Planning

I can save countertop space, if the couch spans from the sink to the island



"How do I adapt to a challenge?"

Demo

Retro

Planning

The kids can't lift furniture; have them on documentation (take pictures of everything)



"How do I navigate a constraint?"

Demo

Retro

**Planning** 

Running out raised real estate; bring in outside chairs and use doors for make-shift tables



"What should I do next that adds the most value?"

Demo

Retro

**Planning** 

Maybe I should pack a "to-go" bag incase I can't stay at my house.



# WHY ARE THESE CRITICAL?

Demo

Retro

Planning

No matter the crunch of the deadline, time needs to be taken to inspect and adapt

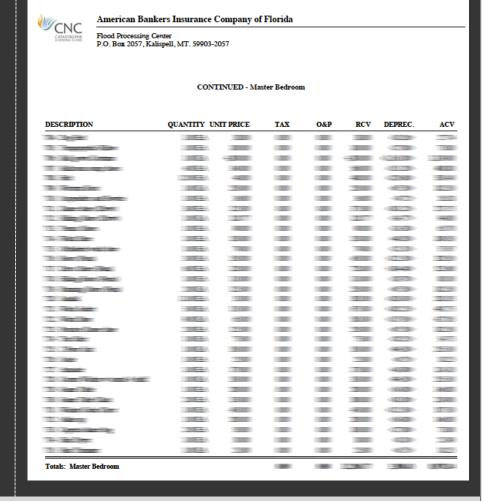
## Personal Lessons Learned

- WATERFALL VS AGILE
  STRUGGLE
- SELF ORGANIZED VS NON-ENROLLED TEAMS
- EXPLICIT PRIORITIZATION
- FOLLOW THE PLAN 19 39



#### Everything is equally important

Trying to save everything without priority (waterfall), meant that failure was certain.



#### Non-enrolled team

The whole team did not understand or support the goal of the product.

In 2015, we didn't get to a self-organized state.

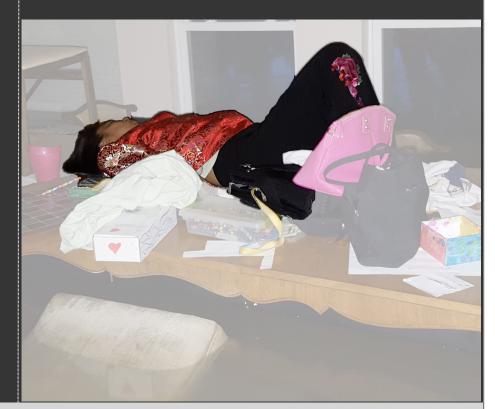


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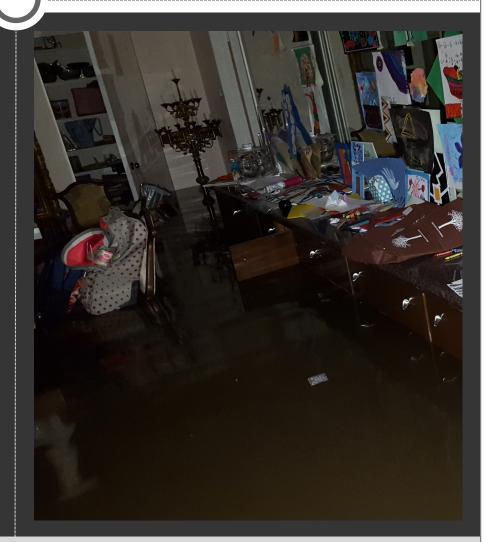
Exchange teacher sleeping on table



#### Implicitly prioritized backlog

Prioritizing from from the floor up, failed to deliver the MVP.

We saved legos, homework, and backpacks when we should have been saving beds, chairs, and shoes.



#### Follow the Plan

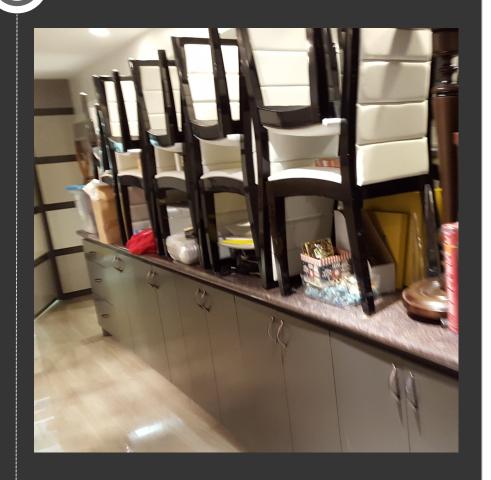
Once established, follow the plan. Adapt it at the iteration boundaries.

Phase 1: Clean

Phase 2: Prep

Phase 3: Lift

Phase 4: Deadline



#### Follow the Plan

Watch out for siren songs.... follow the plan



## **Final Thoughts**

During a tight deadline, remember to be intentional with all the agile practices



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- Demo provides transparency
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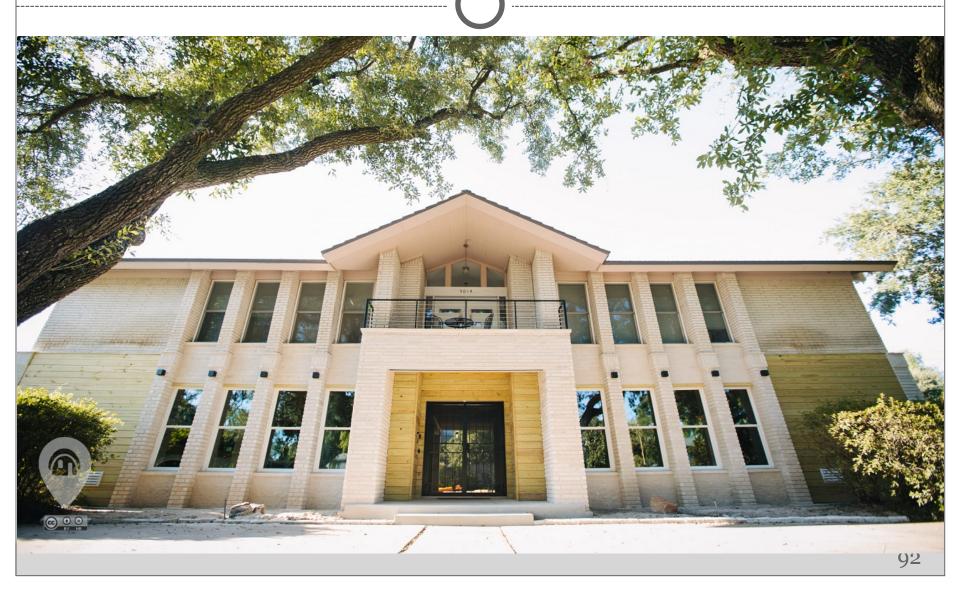


## **Always improving**

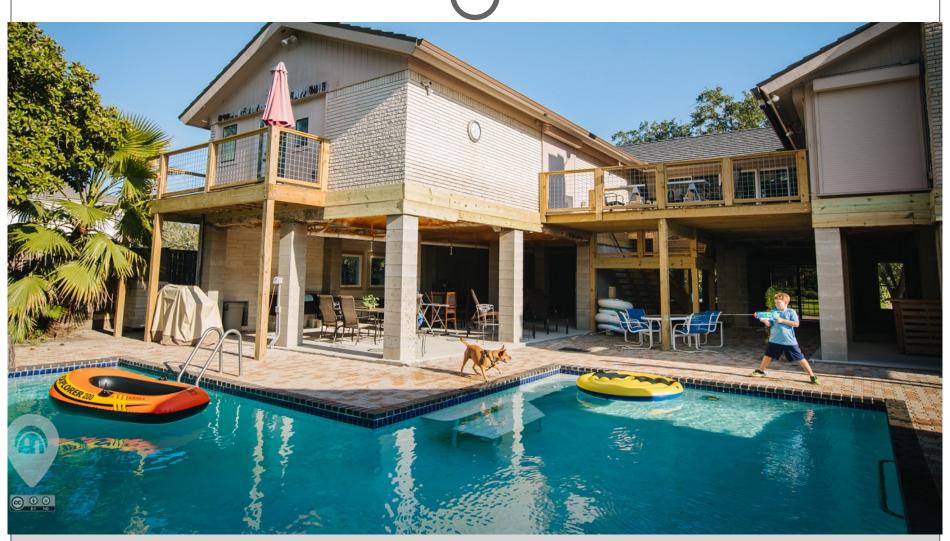


2-day timelapse, separated by 1 month: 1 day before & 1 month after Harvey

## House 9/29/2018



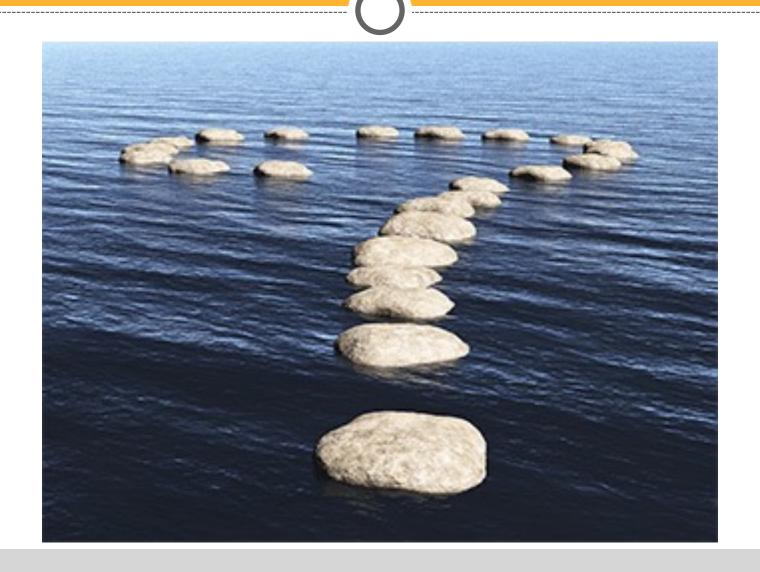
## House 9/29/2018



## The universe was in agreement



## Questions



#### Questions

Q. Why do I still choose to live here?

A. In this context:

Product is all or

nothing - You don't

leave work, you

improve it.

#### Questions

Q. What about prioritizing risk first? The idea where you do the most risky or most unknown work first.

A. Totally agree. In this context that is the biggest and most functional furniture. If we can get the bed, sofa, and chairs up, then the rest is easy.



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