Can GIS Be Agile?

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What is Agile?
Agile 101

- Agile was coined in 2001 by software development leaders
- **Agile Manifesto**
- Iterative & Incremental
- Light-weight
- People-based not plan-based
- Popular Methodologies:
  - **Scrum**, Extreme Programming (XP), Lean
Agile Manifesto

• Individuals and interactions **over** processes and tools

• Working **software** **over** comprehensive documentation

• Customer collaboration **over** contract negotiation

• Responding to change **over** following a plan

Source: AgileManifesto.org
12 Principles behind the Manifesto

1. Rapid delivery
2. Welcome changes
3. Working software is delivered frequently
4. Working software is the principal measure of progress
5. Sustainable development
6. Daily co-operation between business and developers
7. Face-to-face conversation (Co-location)
8. Projects are built around motivated individuals, who should be trusted
9. Continuous attention to technical excellence and good design
10. Simplicity
11. Self-organizing teams
12. Regular adaptation

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Source: AgileManifesto.org
Scrum

**Ceremonies**
- Sprint Planning
- Sprint Review
- Sprint Retrospective
- Daily Scrum
- Grooming Session

**Artifacts**
- Product Backlog
- Sprint Backlog
- Sprint Burndown

**Roles**
- Product Owner
- Scrum Master
- Development Team

Source: Scrum.org
Scrum
the framework

24 Hours
Daily Scrum

2-4 Weeks

Potentially Shippable Product Increment

Product Backlog

Sprint Backlog

Easy to Understand
Difficult to Implement
What does this have to do with GIS?
Projects are Projects

- Requirements
- Design
- Implementation
- Testing
- Deployment
- Maintenance

- Agile = rapid delivery
- Loopy, not linear
- Often at the same time

GIS is no different!
Getting Started

**People**

- Identify roles
  - Scrum Master
  - Product Owner
  - Scrum Team

**Schedule Ceremonies**

- Daily Scrum
- Sprint Planning
- Sprint Review
- Sprint Retrospective
- Story Refinement

**Objects**

- Prioritized To-Do list
- Wall space
- Sprint Info
  - Team name
  - Duration
  - Ceremonies
- Index cards
- Tacks …can’t forget tacks
Name: Spatial Needs Group
Sprint: FY 2015/20
Duration: 07/02 – 07/14
Sprint Review: 07/15 @ 2:00p
Daily Scrum: 10:00a
Velocity: 19.2 pts (last 5 Sprints)
Last Sprint: 29pts
Forecast: 33pts
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User Stories

• As a <role> I want <goal/desire> so that <value>

• As a GIS’r, I want to use the city boundaries and roads to create the ESNs for the Service Area layer so that our Service Area layer will be as accurate as possible.

• Acceptance: Demonstrate accuracy during Sprint Review. Must successfully replicate with our local Council of Governments.
Estimating Effort

- Planning poker
- Fibonacci sequence
Sprint Refinement

- Release Planning
- Look Ahead, Forward
- Estimates for 2-3 Sprints
- Points “in the Oven”
Sprint Planning

- Prioritize Backlog
- Develop Stories/Tasks
- Acceptance Criteria
- Estimate Effort
To Do...  Doing...  Done...
Daily Scrum (Stand-ups)
Must Answer Me These Questions Three

- What did I do yesterday?
- What am I doing today?
- What is in my way (impedances)?
Sprint Review

- Discuss Story Status
- Acceptance Criteria Met?
- Close/Split/Bounce Stories and Tasks
- Demos
Sprint Retrospective

- Good, Bad, Ugly
- **Sprint Starfish**
  - Keep doing
  - Stop doing
  - Start doing
  - More of
  - Less of
- Be Better than the Last Sprint
- Continuous Improvement
- *No Management !!!*
- *No Customers !!!*
Our 1st Sprint (Jan 2013)
Our 1st Sprint

- Stories Too Big → Epics
- Undersized
- Incomplete
- Not Enough Commitment
- Sprint vs Other Work
Continuous Improvement
Metrics – Burndown Charts

**Sprint Burndown**
Indicates the team's progress towards completing its work for a sprint.

**Burndown - Remaining To Do**
- **Sprint**: Sprint GIS - FY2015 - 4
- **Start Date**: 12/4/2014
- **Duration**: 13 days

**Burndown Chart**
- **Date Range**: 12/4/2014 to 12/28/2014
- **Lines**: Ideal Line and To Do
Metrics – Burndown Charts

Sprint Burndown

Indicates the team’s progress towards completing its work for a sprint.
Metrics – Velocity
Early Analysis

- Not as smooth as expected
- Many ways to do the same thing
- Trouble reaching consensus
- Too many Ad hoc requests
- Reactive, not Proactive
- Difficult to plan
- Culture
- Definition of done
Observations

- More work than expected – Management
- Visualize Progress – Customers
- Focus - Team
Encouragement

- Don’t let perfection be the enemy of good
- “Next Sprint”
- Clear & Concise direction
- Daily praise & gratification
- Completing work daily
- Daily progress
Questions/Comments

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