Can GIS Be Agile?

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What is Agile?

Agile 101

Swift Delivery!

- 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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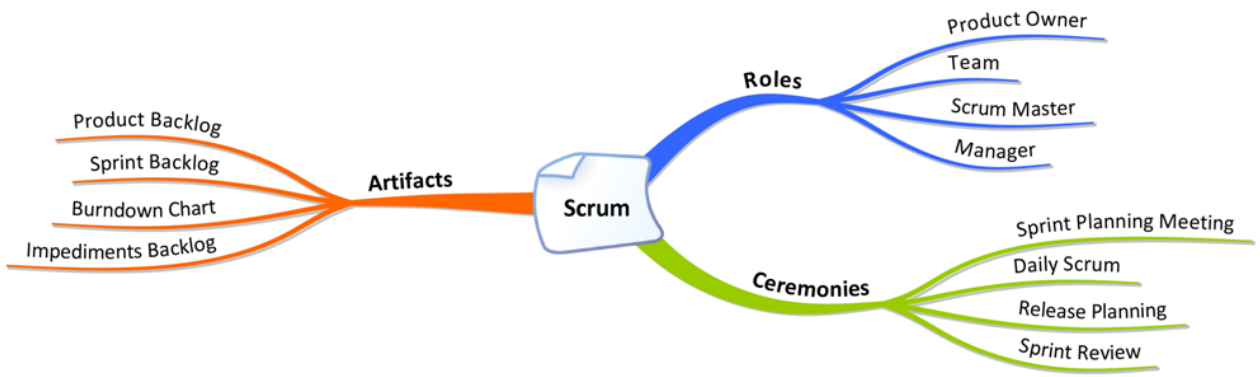
Scrum



Source: IT-Xynergy.com

Scrum

Ceremonies

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

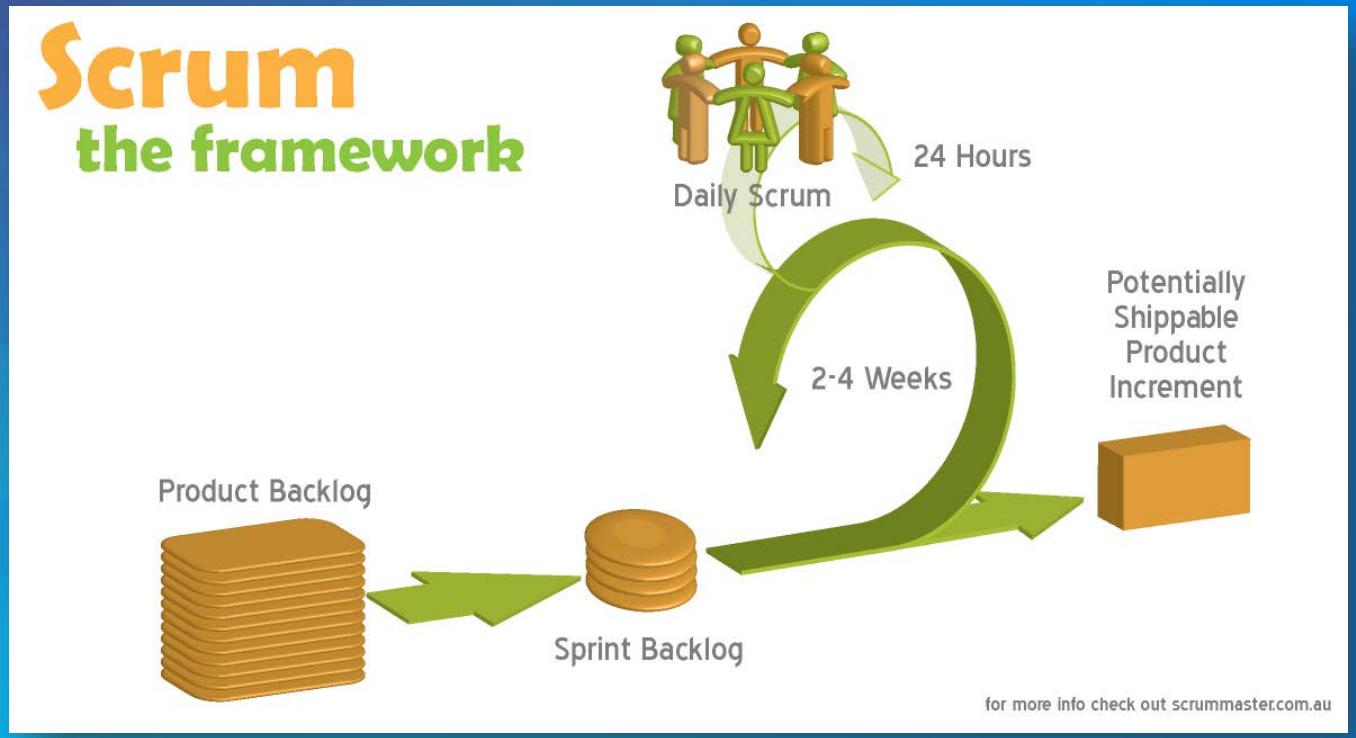
Artifacts

- Product Backlog
- Sprint Backlog
- Sprint Burndown

Roles

- Product Owner
- Scrum Master
- Development Team

Source: Scrum.org



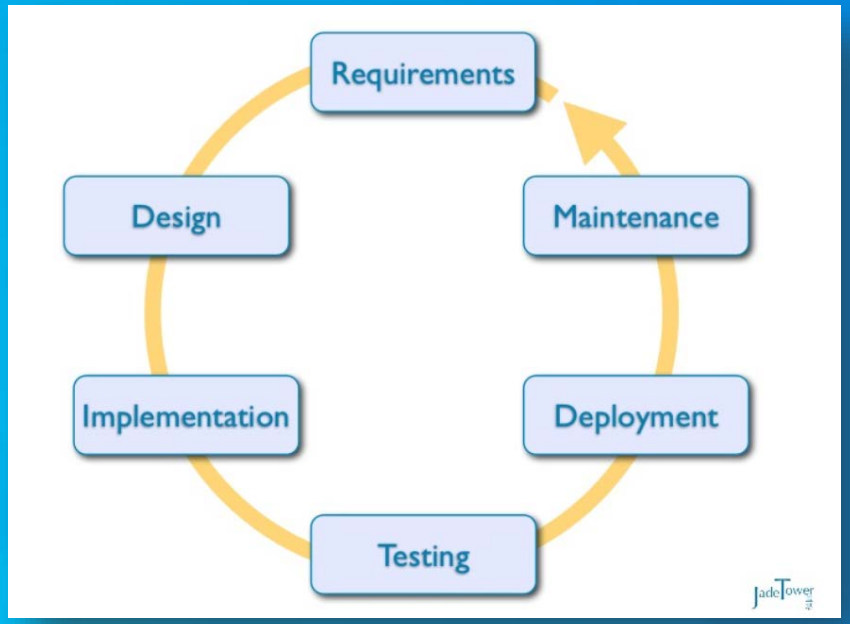
Easy to Understand
Difficult to Implement

What does this have to do with GIS?

Projects are Projects

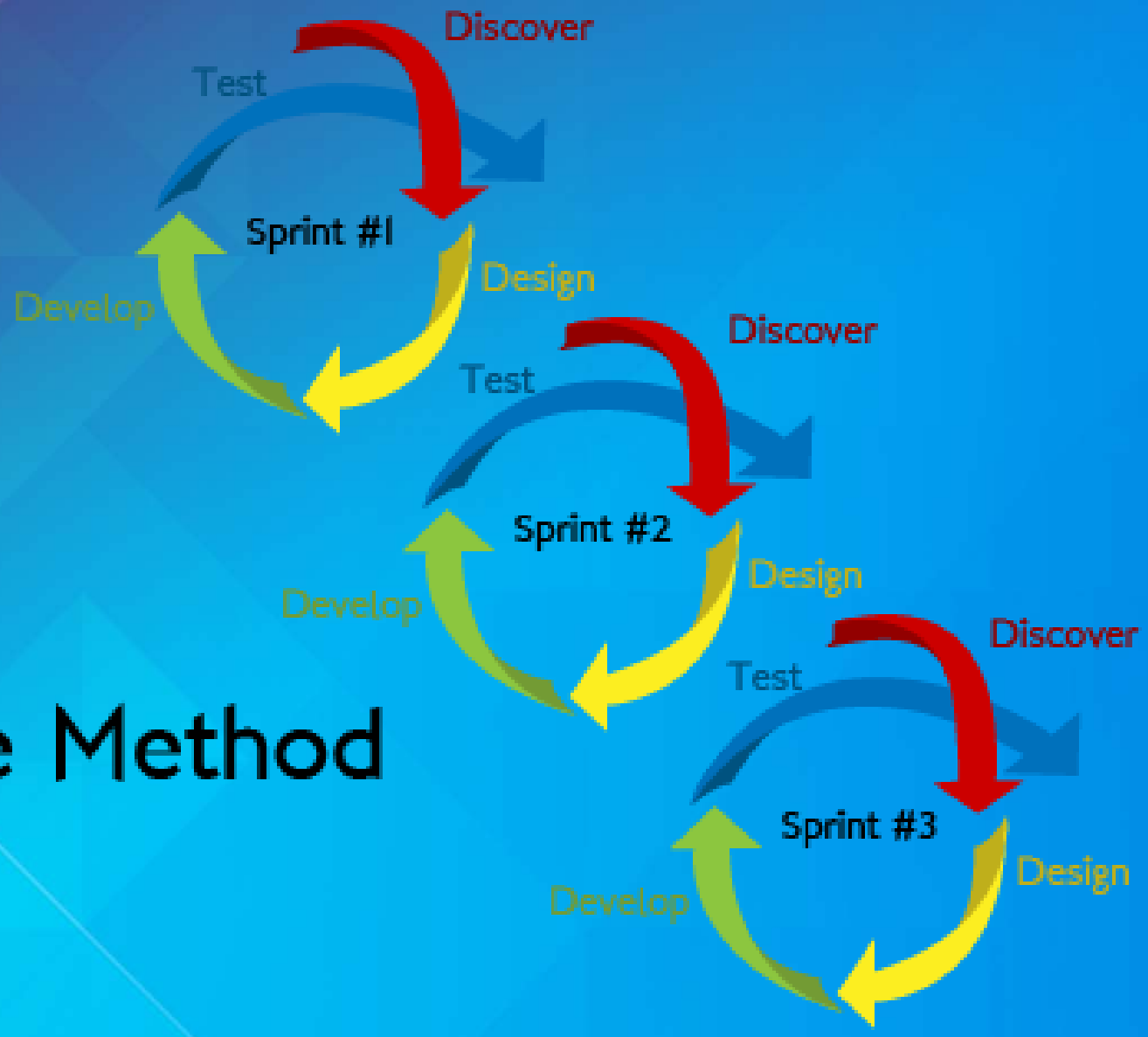
- Requirements
- Design
- Implementation
- Testing
- Deployment
- Maintenance

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



GIS is no different!

Agile Method



Michael Reich, 2012

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 for get 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

April

Mon	Tue	Wed	Thu	Fri
1	2	3	4	5
	Sprint 01 Ends	**Sprint 01 Review** **Sprint 01 Retro** **Sprint 02 Planning**	**Start Sprint 02**	
8	9	10	11	12
Sprint 03 Refinement				
15	16	17	18	19
	Sprint 02 Ends	**Sprint 02 Review** **Sprint 02 Retro** **Sprint 03 Planning**	**Start Sprint 03**	
22	23	24	25	26
Sprint 04 Refinement				
29	30	1	2	3
	Sprint 03 Ends	**Sprint 03 Review** **Sprint 03 Retro** **Sprint 04 Planning**		

Product Backlog - 2015-20

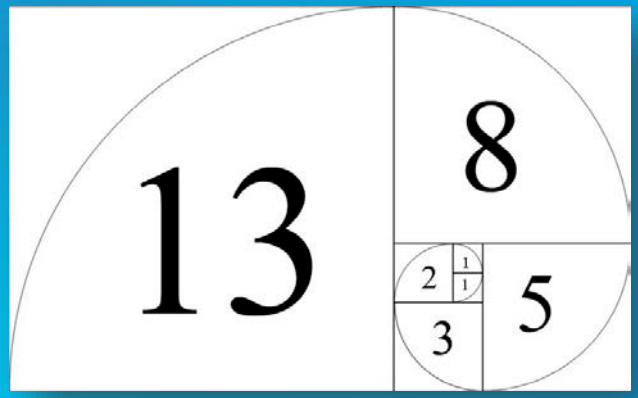
Title	ID	Owner	Priority	Estimate Pts.	Project
15-0110 AGS 10.3.1 Migration	S-01678			13.00	Product Backlog
15-1000 Load Roads	S-01676			8.00	Product Backlog
15-1400 AGS - Set Up the WM Database Replication	S-01679			5.00	Product Backlog
15-9999 Ad hoc	S-01680				Product Backlog
15-9999 Presentation Slides for Judicial Infrastructure	S-01674			5.00	Product Backlog
15-9999 Split Voting Precincts	S-01675			5.00	Product Backlog
15-9999 Weston Mailout Redeux	S-01677			5.00	Product Backlog
15-0100 Resolve/Choose Webserver Config	S-01632			8.00	Product Backlog
15-0300 IT-ArcGIS Image Extension for Server	S-01583				Product Backlog
15-0400 Responsive Design Interactive Maps	S-01572				Product Backlog
15-0700 e911 Service Areas	S-01574				Product Backlog
15-0710 Add ESNs to Service Areas - Fire District using Topology	S-01069			13.00	Service Areas
15-0715 Update Compression Script - Tune up	S-01660			8.00	Product Backlog
15-0800 Healthcare Mapping	S-01575				Product Backlog
15-0900 HLS Nearest POD	S-01576				Product Backlog
15-1000 GIS DB Clean-up (Epic)	S-01577				Product Backlog
15-1100 MSAG Clean-up (Epic)	S-01578				Product Backlog
15-1102 MSAG Compare & MSAG Errors	S-01440			13.00	Product Backlog
15-1200 Replace JSAPI Sites (Epic)	S-01579				Product Backlog
15-1300 GeoDocs - Building Permits	S-01580				Product Backlog
15-1400 Replicate our GIS GeoDBs to the Local Gov't Model	S-01581				Product Backlog
15-1500 HLS Data Warehouse Mapping (Epic)	S-01582				Product Backlog

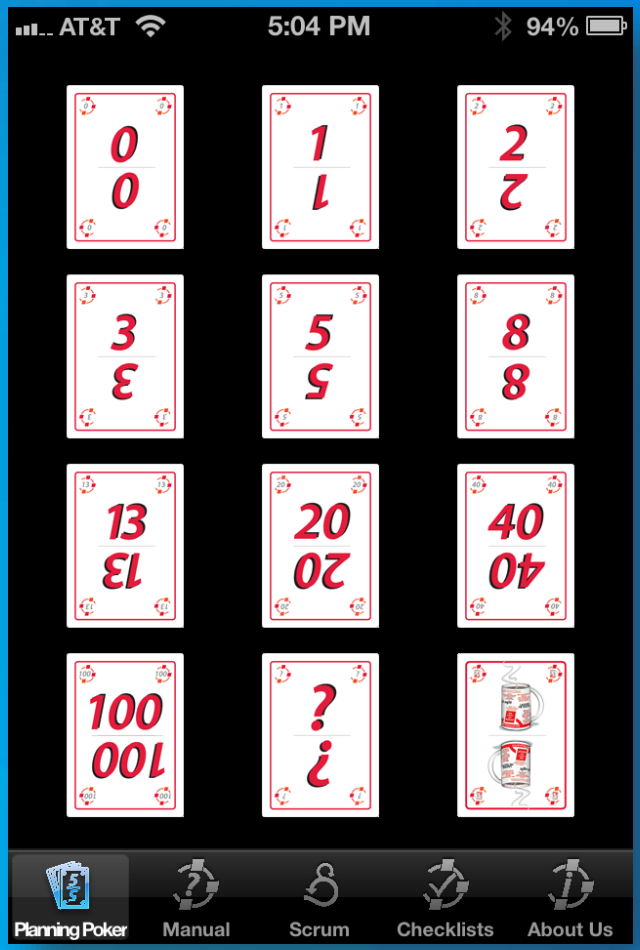
User Stories

- **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*.**
- **<u>Acceptance</u>: 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


5
5
8

To Do… **Doing…** **Done…**

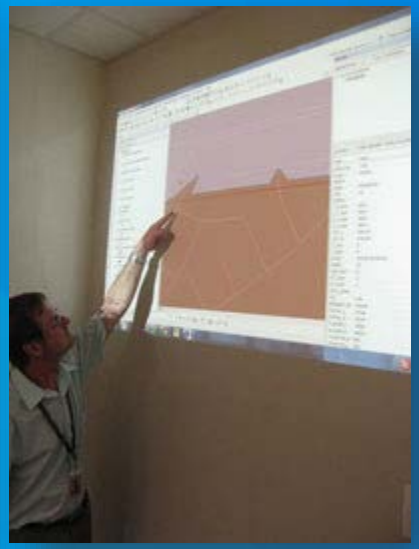
Daily Scrum (Stand-ups)

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



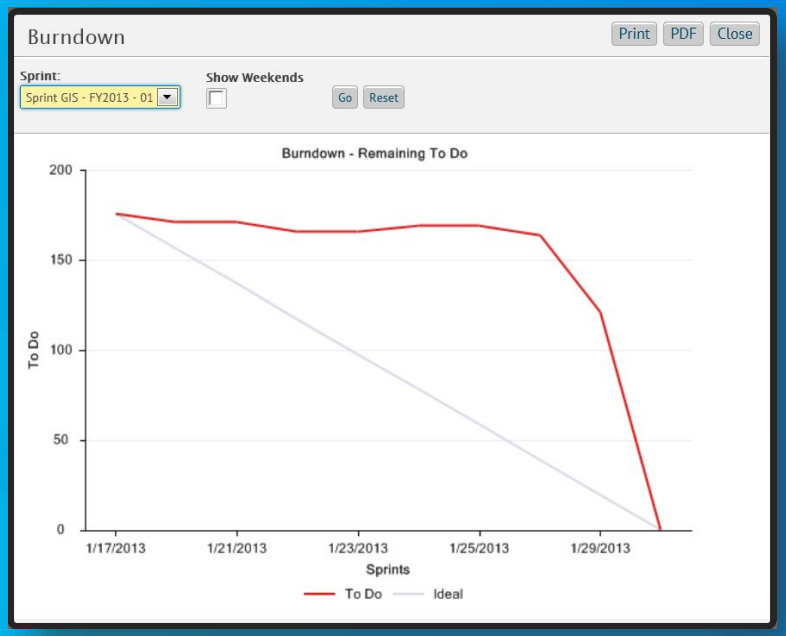
Sprint Retrospective

- 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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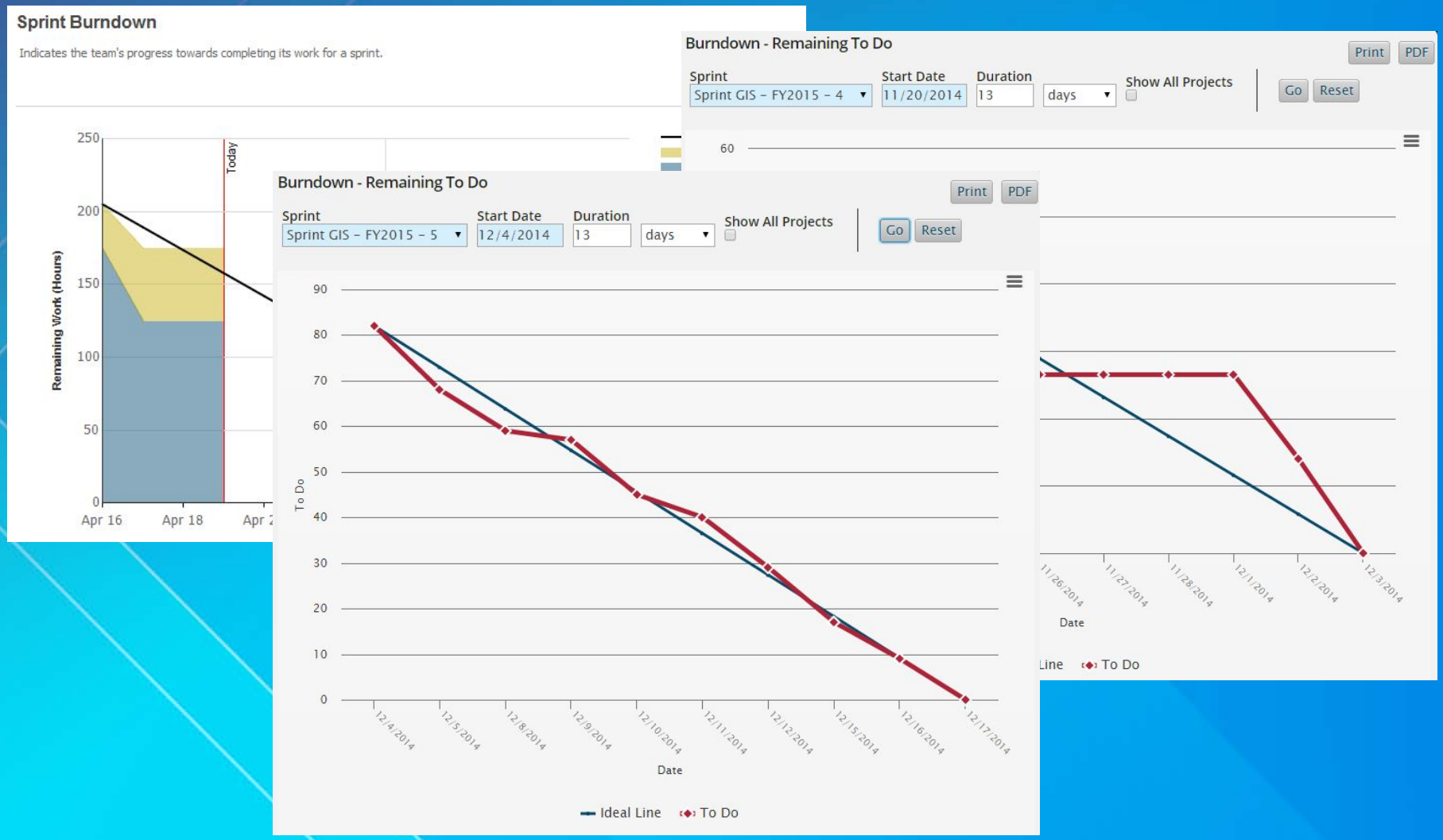
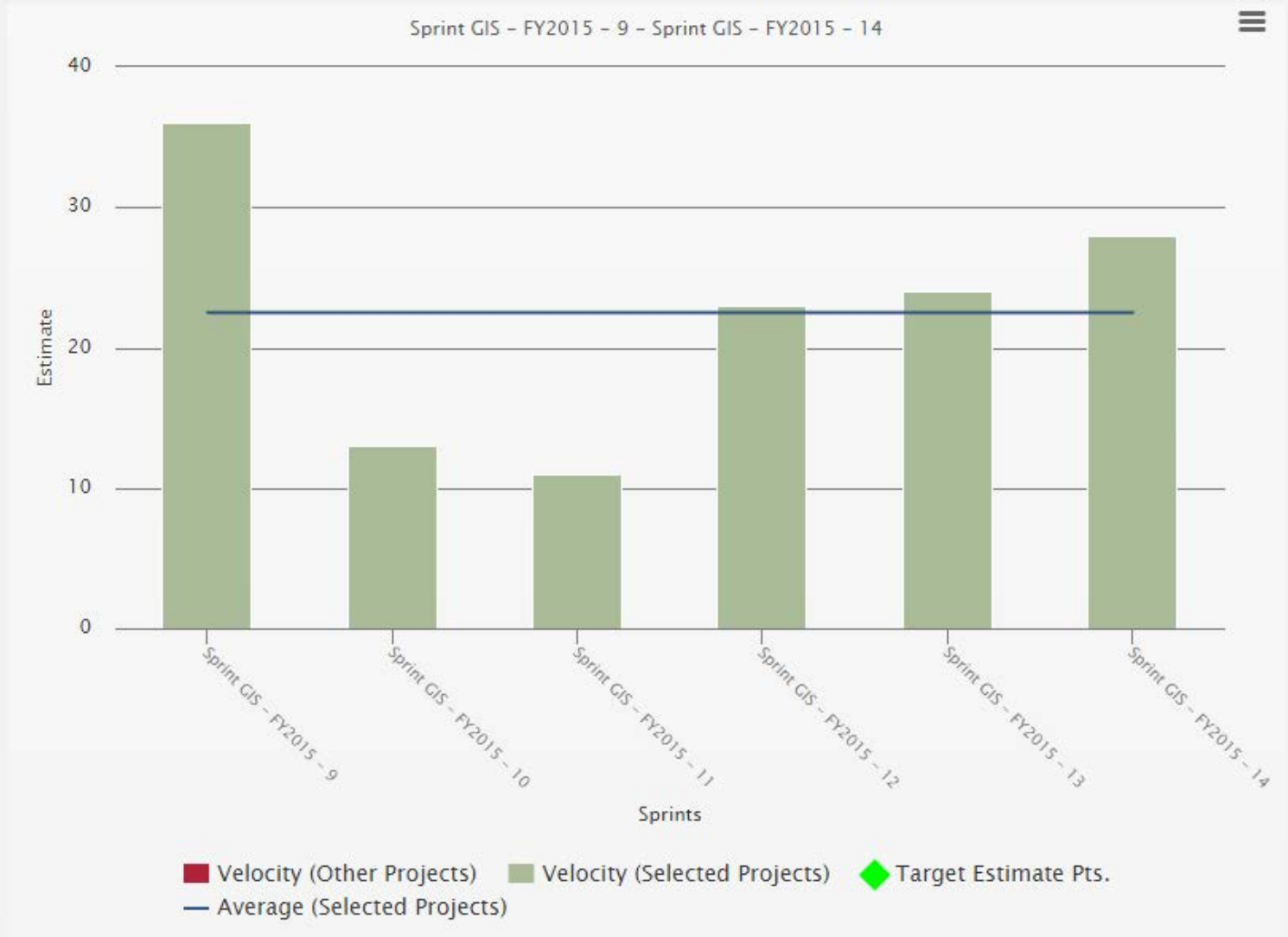
I DARE YOU

Metrics – Burndown Charts



Metrics – Burndown Charts

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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