

# NCSHA 2016 Annual Awards Entry Form

(Complete one form for each entry)

**Deadline: Wednesday, June 15, 2016**

Visit [ncsha.org/awards](http://ncsha.org/awards) to view the Annual Awards Call for Entries.

**Instructions:** Type entry information into the form and save it as a PDF. Do not write on or scan the form. If you have any questions contact [awards@ncsha.org](mailto:awards@ncsha.org) or 202-624-7710.

Fill out the entry name *exactly* as you want it listed in the program.

**Entry Name:** \_\_\_\_\_

**HFA:** \_\_\_\_\_

**Submission Contact:** (Must be HFA Staff Member) \_\_\_\_\_ **Email:** \_\_\_\_\_

Please provide a 15-word (maximum) description of your nomination to appear on the NCSHA website.

\_\_\_\_\_

Use this header on the upper right corner of each page:

**HFA:** \_\_\_\_\_

**Entry Name:** \_\_\_\_\_

\_\_\_\_\_

**Select the appropriate subcategory of your entry and indicate if you are providing visual aids.**

Communications	Homeownership	Legislative Advocacy	Management Innovation
Annual Report	Empowering New Buyers	Federal Advocacy	Financial
Creative Media	Encouraging New Production	State Advocacy	Human Resources
Promotional Materials and Newsletters	Home Improvement and Rehabilitation		Operations
			Technology
Rental Housing	Special Needs Housing	Special Achievement	Are you providing visual aids?
Encouraging New Production	Combating Homelessness	Special Achievement	Yes
Multifamily Management	Housing for Persons with Special Needs		No
Preservation and Rehabilitation			

THE NEW JERSEY HOUSING AND MORTGAGE FINANCE AGENCY  
NOMINATES

# IMPROVING THE APPLICATION DEVELOPMENT CYCLE



FOR THE  
NATIONAL COUNCIL OF STATE HOUSING AGENCIES  
2016 ANNUAL AWARDS FOR PROGRAM EXCELLENCE

## **New Jersey Housing and Mortgage Finance Agency (NJHMFA) Improving the Application Development Cycle**

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In 2014, NJHMFA decided to take a new approach to address the ever growing application development requests coming into the IT department. To initiate the process, the Agency decided to move from the traditional waterfall project management approach to a more Agile methodology. This was a new concept to NJHMFA which significantly changed the way projects were managed and implemented.

In addition to the changes to the project management, the Agency also decided to improve the overall application development cycle by utilizing the tools available in Team Foundation Server (TFS). The changes to the project management methodologies coupled with utilizing new technology had a major impact on the overall application development cycle.

### **Agile Project Management**

In the past, NJHMFA used the traditional waterfall method of project management to manage software development. Projects would proceed in a purely linear fashion, specification write-up, user signoff, development, user acceptance testing and production rollout. Many times there were significant oversights in the initial user's requests or a business gap in the solutions provided. As a result, users would become frustrated and abandon the project to revert back to their manual processes.

Agile development is an alternative to traditional project management where emphasis is placed on empowering people to collaborate and make team decisions in addition to continuous planning, testing and integration. Business users are part of the team and decision making process as oppose to just IT. Focus is placed in the rapid delivery of an application in complete functional components.

- Requests are now broken out into smaller chunks or user stories. Whenever possible, IT develops prototypes or mockups of the solutions before the start of development. This helps to manage the user's expectations and promoted additional discussions on the overall business processes.
- Time is broke out in "sprints." Each sprint has a defined duration with a running list of deliverables which is prioritized by the business areas. If all planned work for the sprint cannot be completed, work is reprioritized and the information is used for future sprint planning. As work is completed, it is reviewed and evaluated by the project team.
- Adapting the agile approach changed the dynamics of the user/developer relationship by engaging both parties to actively participate in the requirements gathering and development phases. The IT team would meet with the business areas on a daily basis to ask questions, review challenges and demonstrate the progress of the project.
- Changes requested by the users are now readily accepted and tracked. Users also have a stronger input on the product's look and feel which has helped to keep them actively engaged in the application development cycle.

### **Scrum Meetings**

Each morning at 9:15, the team attends a stand up meeting or online via Skype. These meetings have resulted in a very positive and productive influence on the entire team's dynamics.

- All team members get a chance to speak on what they did the day prior, what they plan to do that day and to identify any impediments to an individual's progress.
- The team has the opportunity to celebrate small victories and to collaborate on challenges encountered on the previous day.
- Team members can volunteer to take on a new tasks to help move the project along or to expand their technical or business knowledge.
- The daily scrums improve communications, eliminate other meetings, identify and remove impediments to development, highlight and promote quick decision making, and improve everyone's level of project knowledge and help to move the project forward.

# New Jersey Housing and Mortgage Finance Agency (NJHMFA)

## Improving the Application Development Cycle

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### **Product Backlog**

The product backlog corresponds to the project plan and roadmap for what your team plans to deliver. Utilizing the TFS product backlog has significantly improved the overall efficiency of the project management activities. All information associated with a work item from the inception to its completion is maintained in one centralized area. Previously information was tracked in separate spreadsheets and word documents.

- Work items and their associated tasks are entered, prioritized, assigned to team members and maintained throughout the entire application development life cycle. The entire portfolio of documents associated with the request is now maintained in one place.
- Mockups or story boards, tasks, test cases, internal communications and supporting documents are centralized. This allows anyone on the team to view the full status of the request at a single click rather than reviewing separate documents and emails.
- New items which are often purely a “concept” with little supporting information are entered as a placeholder to ensure it is not forgotten.
- Following approvals, the work effort is estimated, tasks are assigned and a commitment is made by the team to complete within a certain timeframe or sprint.
- Critical information such as the date the item was requested, who was assigned, when work was started and when it was completed are now automatically tracked rather than logged manually.
- Team members have the ability to update work items with their own feedback, test cases and supporting documents. This provides clarity and transparency to the project management process.

### **Kanban Board**

To help improve the overall productivity of the application development cycle, the Kanban board was introduced to provide a visualization of the flow of work for a project.

- Tracks items from inception, thru the development, testing, integration testing, user acceptance and production stages.
- Helps the team to set and adhere to work-in-progress limits that are set for each stage of the work. These WIP limits help the team to maintain focus on completing what has been started and to identify bottlenecks occurring in their processes.
- NJHMFA utilizes the Kanban boards during our daily scrum meetings. This ensures that the team understands and agrees on the status of a request on a daily basis.

### **Release Management (RM)**

NJHMFA has implemented Visual Studio Team Services “Release Management” to help automate the deployment of software solutions into multiple environments, which has considerably improved the efficiency of the entire application release process.

- Steps which was previously manually performed by IT team are now fully automated. This includes the deployment of application, report and databases changes in each of the environments from development thru production.
- It simplified the process which was often time-consuming and error prone due to the numerous manual steps and coordinated efforts between the Apps and Infrastructure team.
- It added accuracy and consistency to the releases across the environments. By setting up the RM definitions for each environment, the same application builds and scripts are now being automatically deployed.
- Automation has significantly reduced the system downtime required to complete the deployments.

# New Jersey Housing and Mortgage Finance Agency (NJHMFA)

## Improving the Application Development Cycle

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### **Automated Testing**

While adopting the new Agile/Scrum methodologies, it quickly became apparent that NJHMFA had to improve their testing procedures. To address this challenge, Microsoft Test Manager (MTM) was implemented for automated testing.

- With shorter application development cycles, relying on staff to manually perform system tests was no longer feasible or effective.
- System testing ensures all components of the application are still working and is used to verify recent development work hasn't introduced new bugs into functions that were previously working.
- The workload of regression testing increases throughout the life of the project, therefore it needed to be automated.
- MTM offers a fully configurable test runner which captures detailed records of steps performed, behaviors observed, and the status of each test step. The expected results and testing data can be entered and automatically executed. This ensures timeliness, consistency and reliability in the regression testing process.

### **Summary**

**Innovative** – During the past 2 ½ years, IT has embraced changes to both the project management style and technologies used to track, test and deploy software solutions to improve the efficiency in application development.

**Replicable** – With management support, development teams can adapt the Agile principals while improving their planning, testing and deployment processes utilizing newer technologies.

**Respond to management challenge or opportunity** – To address the increasing demands on IT resources, management saw a need to update and improve the application development processes.

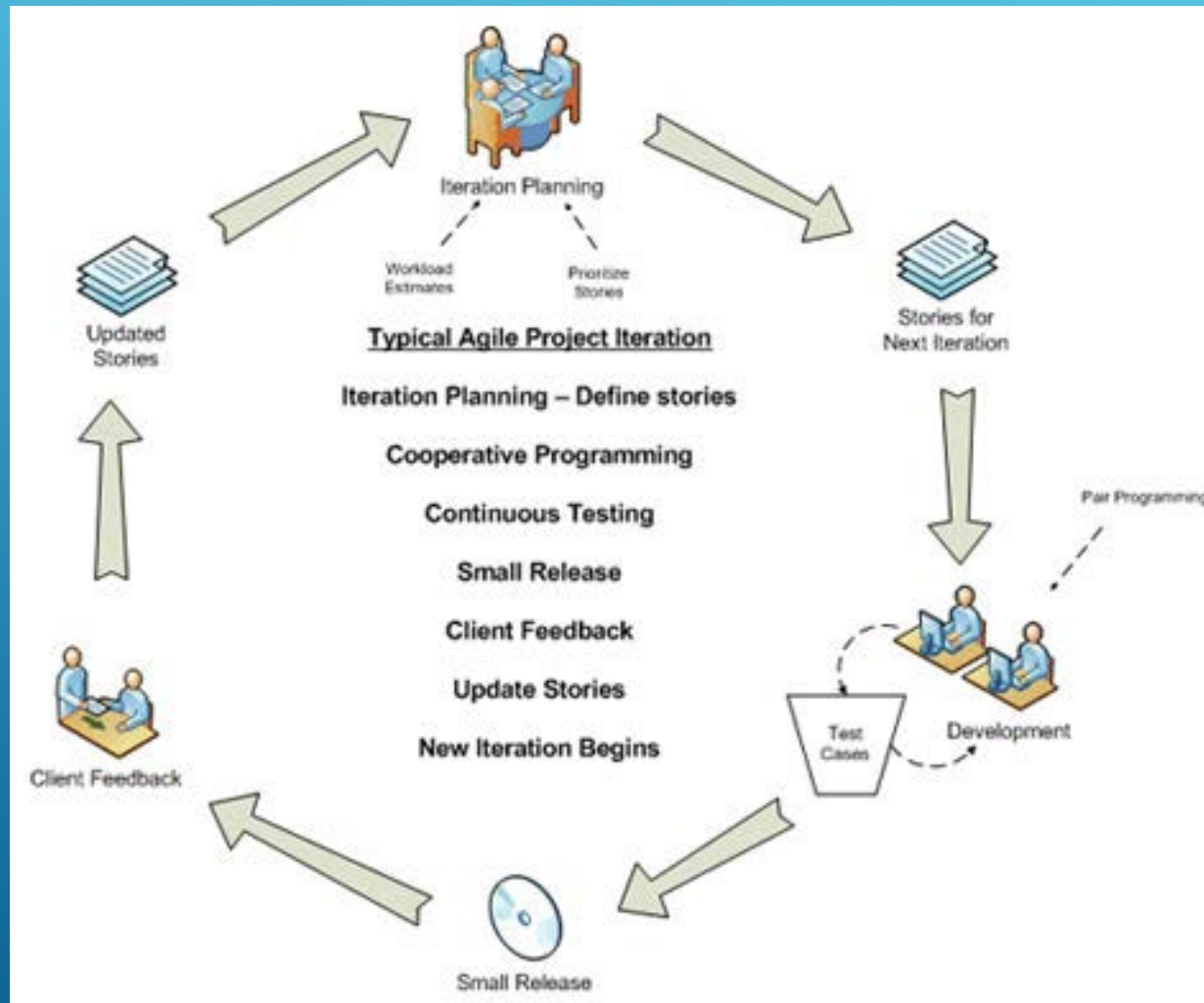
**Achieve measurable improvements in agency operations** – By utilizing these newer technologies, IT has been able to increase its efficiency and significantly reduce the turnaround time on delivering its application solutions. For example, an IT smoke test which previously took several hours to complete manually is now executed in a few minutes.

**Provide benefits that outweigh costs** – The tools used to improve the development cycle come bundled with the Visual Studio Services, which the development team was already utilizing. Skype which is used to share screens and for daily scrum meetings is bundled into Office 365 at no additional cost.

**Demonstrate effective use of resources** – Daily scrum meetings and visualizing the project workflow using TFS has reduced the amount of time the development team spends in meetings and ensures everyone stays on track. The automation of the testing and application deployment processes has increased the team's efficiency and eliminated the human errors associated with performing time consuming repetitive manual steps.

**Achieve strategic objectives** – Adopting the Agile methodologies and using TFS for application development has reduced the development and test cycles while delivering real value to our users on a regular basis.

# AGILE PROJECT MANAGEMENT



- User Stories
- Iteration Planning
- Ongoing User Feedback
- Small Releases

# PRODUCT BACKLOG

Backlog items

Backlog Board

New [Grid Icon] [List Icon] | Create query | Column options | [Envelope Icon]

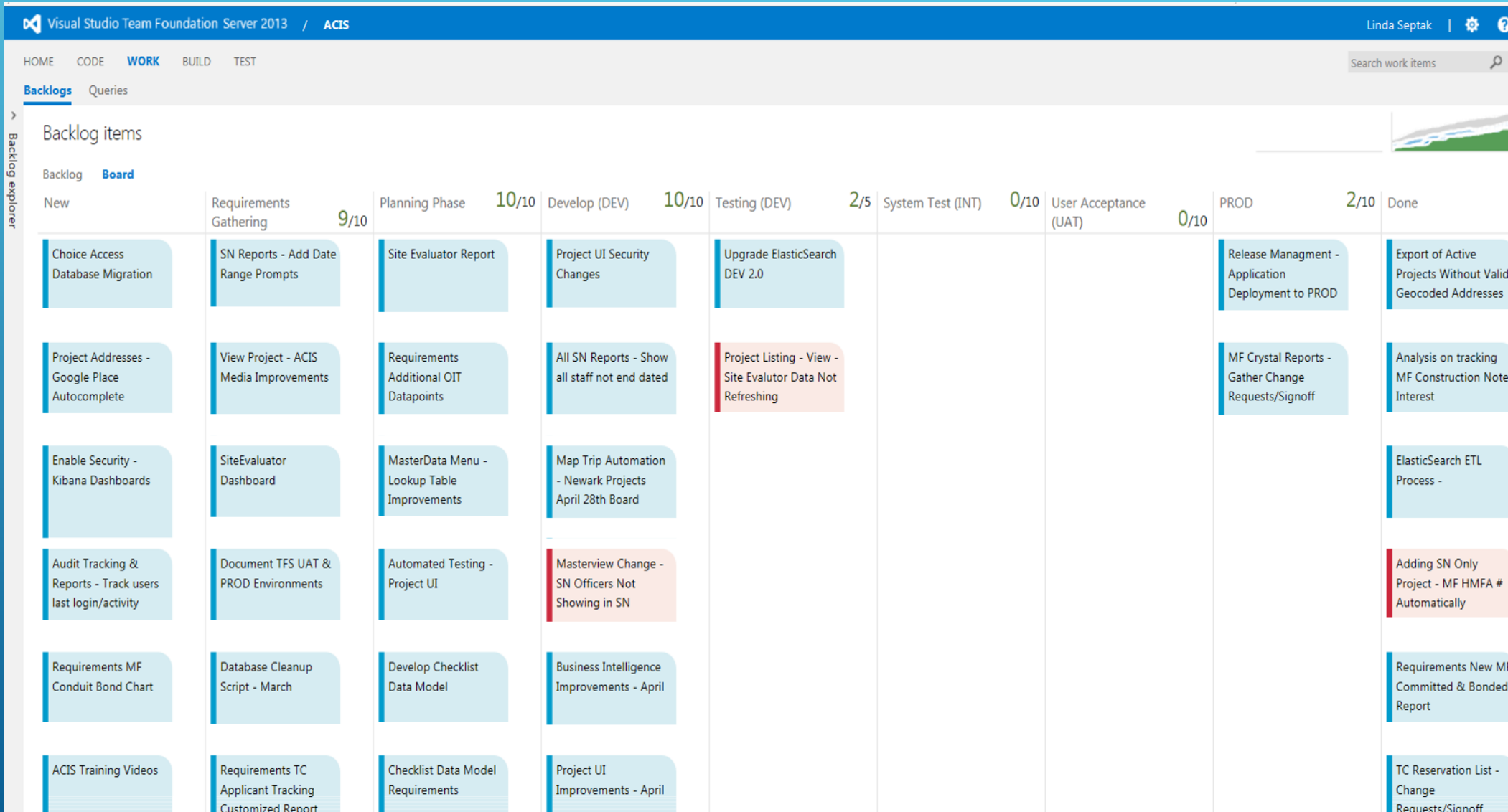
Type: Product Backlog Item [Close Icon]

Title:  [Add]

Order	ID	Work Item Type	Title	State	E. Iteration Path	Tags	Assigned
1	787	Product Backlog Item	Requirements for HMFA # Integration with Mitas	Approved	ACIS\Release 2\Sprint 1		Linda Se
2	749	Product Backlog Item	Add SiteEvaluator/Google Maps Address Types	Approved	ACIS\Release 2\Sprint 1		Linda Se
3	761	Product Backlog Item	Requirements Exec SN Weekly Report	Approved	ACIS\Release 2\Sprint 1		Linda Se
4	585	Product Backlog Item	Requirements Exec Production Report	Approved	ACIS\Release 2\Sprint 1		Linda Se
5	754	Product Backlog Item	ElasticSearch 2.3/Kibana 4.5 Upgrade	Committed	ACIS\Release 2\Sprint 1		Anupam
6	763	Product Backlog Item	Project Read Only View Improvements	Committed	ACIS\Release 2\Sprint 1		Joseph V
7	780	Bug	Adding Project - Unique Project Name not accepting in project	Committed	ACIS\Release 2\Sprint 1		Joseph V
8	744	Product Backlog Item	Project UI Improvements - May	Committed	ACIS\Release 2\Sprint 1		Joseph V
9	684	Product Backlog Item	TC Applicant Tracking Customized Report	Committed	ACIS\Release 2\Sprint 1		Krishnav
10	714	Product Backlog Item	Business Intelligence Improvements - May	Committed	ACIS\Release 2\Sprint 1		Krishnav
11	786	Product Backlog Item	MasterView Changes Exec Reporting	Committed	ACIS\Release 2\Sprint 1		Kalpana
12	762	Product Backlog Item	Executive Project Description Report	Committed	ACIS\Release 2\Sprint 1		Kalpana
13	746	Product Backlog Item	Six MF Weekly Customized Reports (from Crystal)	Committed	ACIS\Release 2\Sprint 1		Kalpana
14	628	Product Backlog Item	Requirements on Tracking Affordable TC / MF Units	Approved	ACIS\Release 2\Sprint 1		Louis Be
15	801	Product Backlog Item	Business Intelligence Improvements	Approved	ACIS\Release 2\Sprint 2		Krishnav
16	800	Product Backlog Item	Project View Improvements - June	Approved	ACIS\Release 2\Sprint 2		Joseph V
17	578	Product Backlog Item	Exec Single Family Program Status	Approved	ACIS\Release 2\Sprint 2		Kalpana

- Maintain & Prioritize Work Items
- All Information Centralized
- Sprint Planning
- Transparency

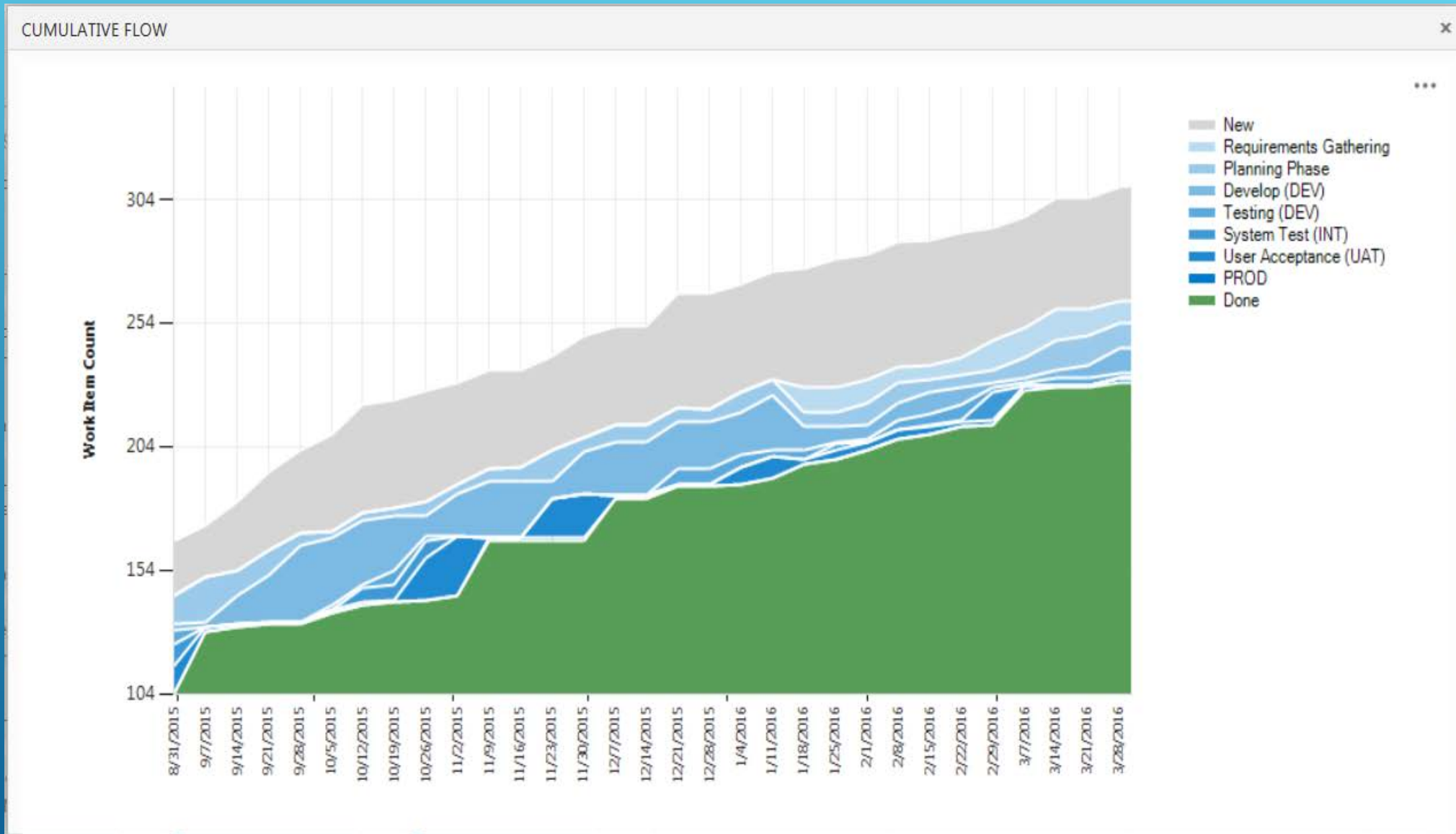
# KANBAN BOARD



- Project Workflow Visualization
- Daily Scrum Meetings
- Clarity



# PROGRESS TO DATE



- Project Workflow Visualization

# RELEASE MANAGEMENT

## Automate The Release Cycle

 Deploy the same way to all stages



# AUTOMATED TESTING

- Reduces User Testing
- Complete & Consistent Testing
- Identify Unanticipated Issues
- Reduces downtime

Test Case 772\* Popup page for Adding new TC project -- Security -CanEditTC

Location: ACIS/Release 1/Sprint 8

STATUS: Assigned To: Louis Becerra, Status: Design, Priority: 2

DETAILS: Automation status: Not Automated, Area: ACIS

STEPS: 4. UN click of Register/Login  
5. Click "Create New TC Project" Button on the project Index page  
6. Enter Unique @ProjectName.  
7. Enter Unique @LITC  
8. Click OK button on the bottom of the popup screen.  
9. On click of cancel button

Parameter values: Project Name: LITC, 479 Abbett Ave. SITL - 5TC1821111, 458 & 55 South Esse... 51282T2111

Project Name	Project Address	Funding ID	Action
Arthur Street Home	12 Arthur Street, Clifton City, Passaic	5975 / SHPLP001 / #0201	Edit
Kendall Rd.	125 Kendall Road, South Brunswick Twp., Middlesex	SHPLP007 / #0275	Edit
(C)H Comprehensive Behavioral Health Supportive Housing (CBH Supportive Housing)		SHPLP007 / #0275	Edit
100 Park		SHPLP007 / #0275	Edit
11 Sandra Lane		SHPLP021 / #0279	Edit
112 Hiawatha, Parsippany/Troy Hills	112 Hiawatha, Parsippany-Troy Hills Twp., Morris	SHPLP020 / #0297	Edit
129 Abbett Ave. 111		1NewTC18211	Edit
150 & 55 South Essex Avenue IT2		11205113	Edit
16 Evergreen - CPJ)asking Ridge Residence	16 Evergreen, Bernards Twp., Somerset	SHPLP005 / #0204	Edit
160 Halsted Family Apartments	160 Halsted Street, East Orange City, Essex	03108	Edit
17 Pamela Drive	17 Pamela Drive, Randolph Twp. New Jersey 07093, Randolph Twp., Morris	SHPLP008 / #0293	Edit
181 Edinburg Robbinsville Rd.	181 Edinburg Robbinsville Road, Robbinsville Twp., Mercer	SHPLP018 / #0271	Edit
2031 Oak Tree S. H.	2031 Oaktree Road, Edison Twp., Middlesex	SHPLP008 / #02613	Edit



# IT ADVANCEMENTS

