

Highway Agile World: Improving Project Delivery and Developing a Culture of Continuous Improvement

Meghan Haggerty

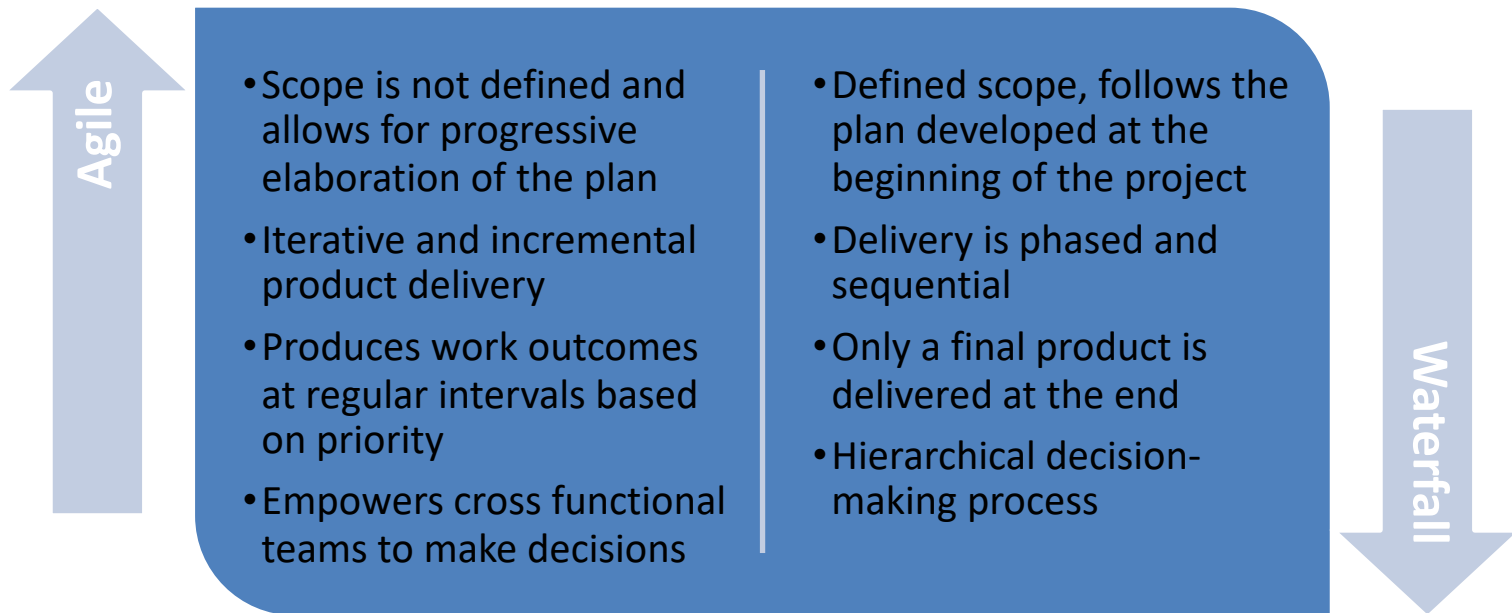
MassDOT Highway Division

Session Overview

- Agile Methodology
- Overview of Project Management Office
- Process Improvement History & Framework
- Success Stories & Examples
- Panelist Introductions & Questions

The Agile Methodology

- The agile framework is an interactive approach to **managing complex projects** by breaking them into **sizable chunks**.
- It provides **structure** and **transparency** while incorporating consistent **feedback loops with leadership**, ensuring alignment with organizational goals in a team focused environment



Project Management Office (PMO)

Objectives:

- Implement common methodology
- Standardize terminology
- Provide common tools and processes
- Track progress of project portfolio
- Escalate issues for prompt resolution
- Support projects with assistance, training, communication, etc.

HWY PMO Team:

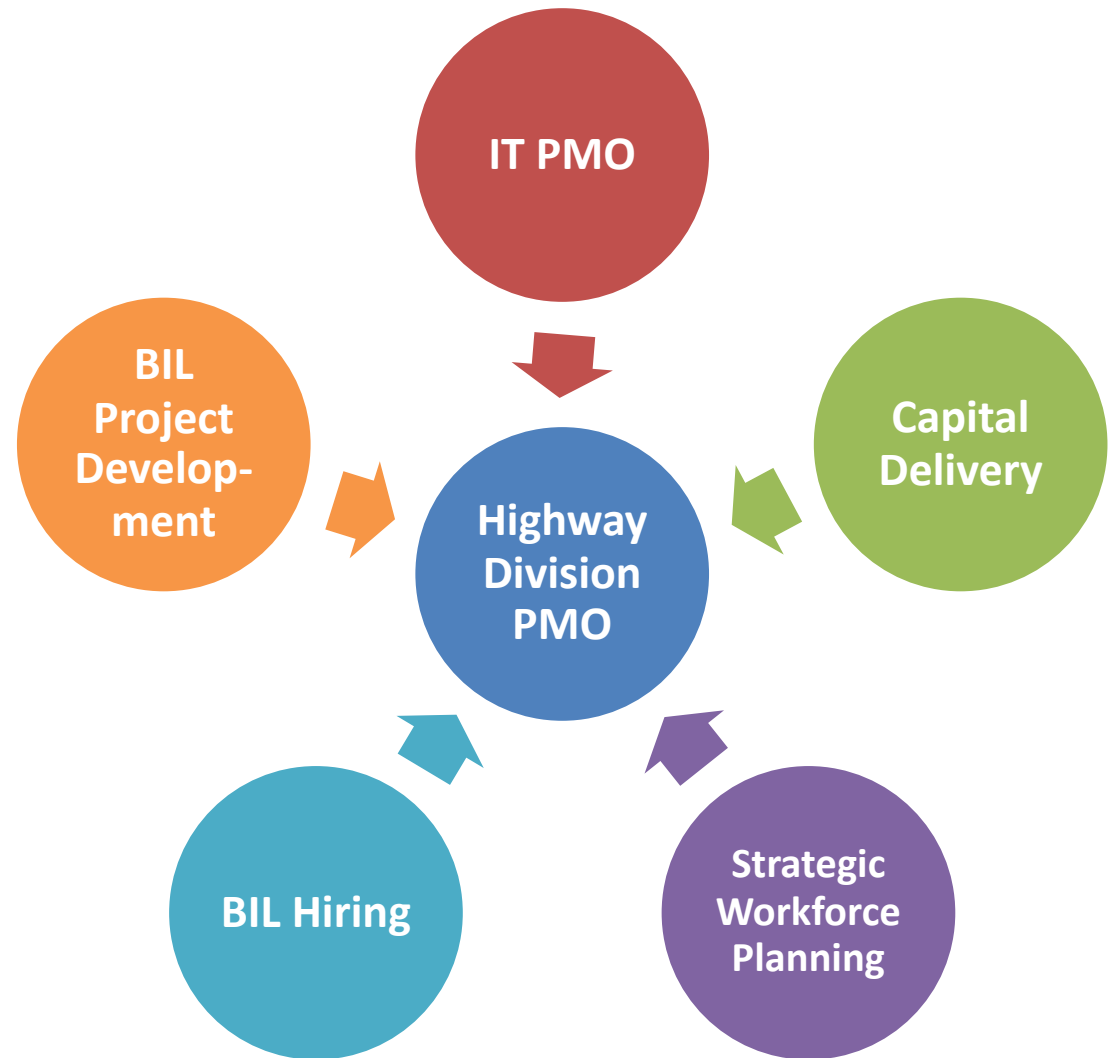
Meghan Haggerty
Tracy Osimboni
Lois Parker Carmona

Highway ESC Oversight:

Administrator Gulliver

Strategic ESC Members:

Carrie Lavallee	Joe Foti
Gary Blank	Steve Collins
Dave Spicer	Neil Boudreau



Project Management Office (PMO)

- **Capital Planning:** Achieve efficiencies within the Ad program by achieving an Ad to Bid duration of 120 days.
- **Strategic Workforce Planning:** Position Highway's workforce to meet the needs of the future.
- **IT PMO:** Provide a solid foundation for MassDOT's Highway Information Technology Program by creating an environment of measurable, disciplined Project Management professionalism.
- **BIL Project Development:** Streamline internal processes to create efficiencies and capacity in preparation for the BIL.
- **BIL Hiring:** Facilitate the efficient hiring and onboarding of new Hwy staff to support BIL.

Highway Process Improvement History

Capital Planning

- Reduce number of days from Project Advertisement to Construction NTP from 239 in 2018 to 81 in 2021.
- Develop a more evenly distributed Advertising Program schedule in FFY2020 and FFY2021 by implementing 'locked down' advertising dates.
- Standardize maintenance contracts for various locations, eliminating post Advertisement review.
- Redesign process to ensure the availability of Bid Documents the Wednesday after Advertisement.

Strategic Workforce Planning

- Plan ahead for talent demand and strengthen targeted recruitment
- Fill critical skill gaps in the workforce by offering training, leveraging partnerships and vendors, and supporting employees through on-the-job instruction and mentoring
- Improve how different types of work are managed and delivered by the current workforce
- Proactively preserve institutional knowledge and retain critical talent
- Use technology to improve productivity and performance

BIL Hiring

- Hiring - Facilitate the efficient hiring and onboarding of ~200 new HWY staff for FY23. Clear backlog of 172 positions, keep pace with increased attrition and exceed the 2367 FTE cap by June 1st. Implement process improvements to mitigate or eliminate hiring bottlenecks.
- Marketing - Increase number of qualified applicants and diversity recruitment through paid media, in house media and higher education partnerships
- Labor Relations - To promote recruitment, retention and effective compensation strategy by working cooperatively with Unions and MassDOT business partners to affect positive and sustainable change.

Highway Process Improvement History

May 2019: Legislative necessity and overall performance

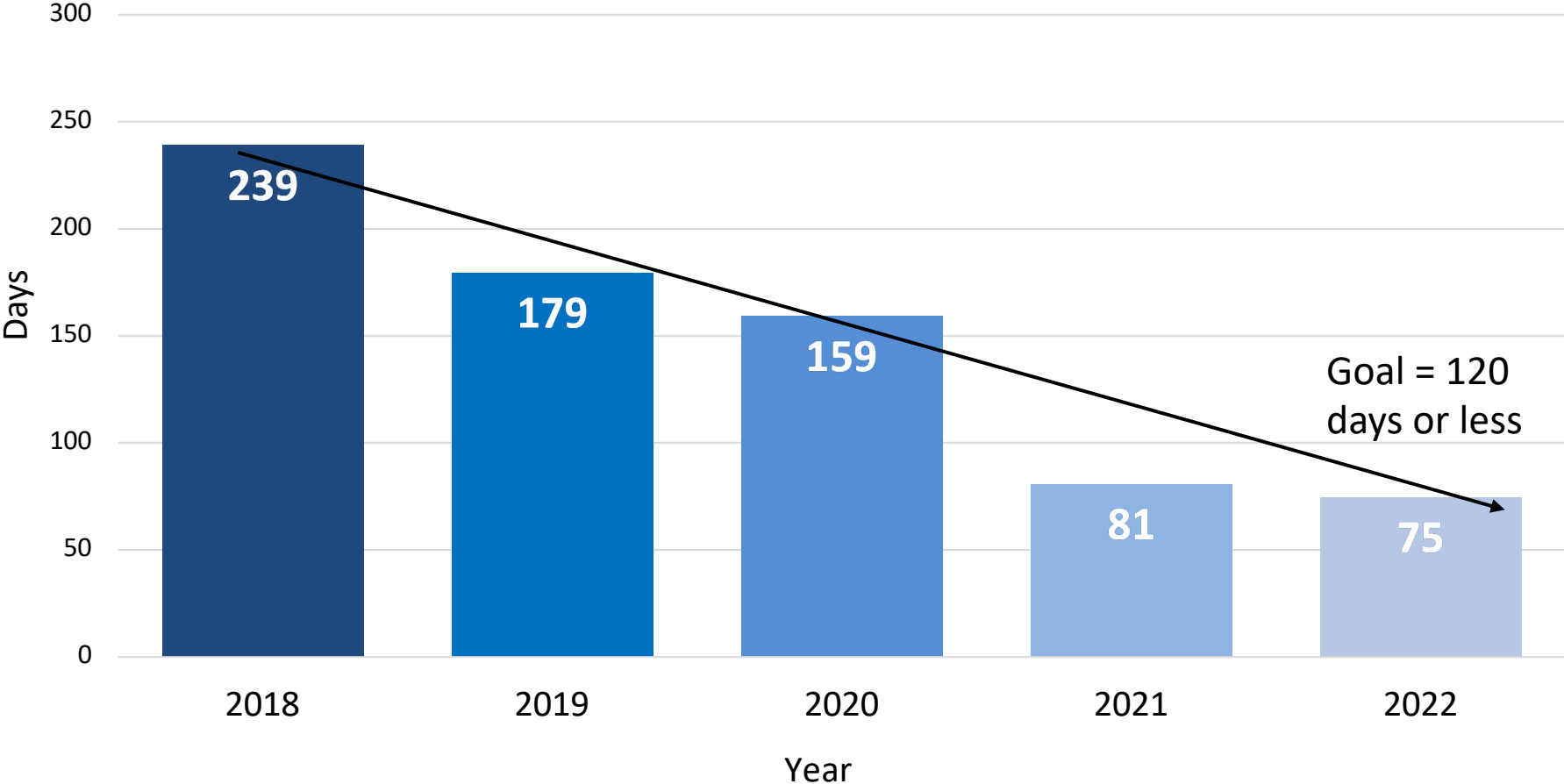
- Advertising program was behind schedule
- Time taken to move from Project Advertisement to Construction NTP was in excess of 200 days on average

Goal: Achieve advertisement to NTP in less than 120 days

- Four teams assembled to tackle the goal
- Highway Agile Scrum framework and guidance set in place
- Time and resources devoted to achieve the goal

Results

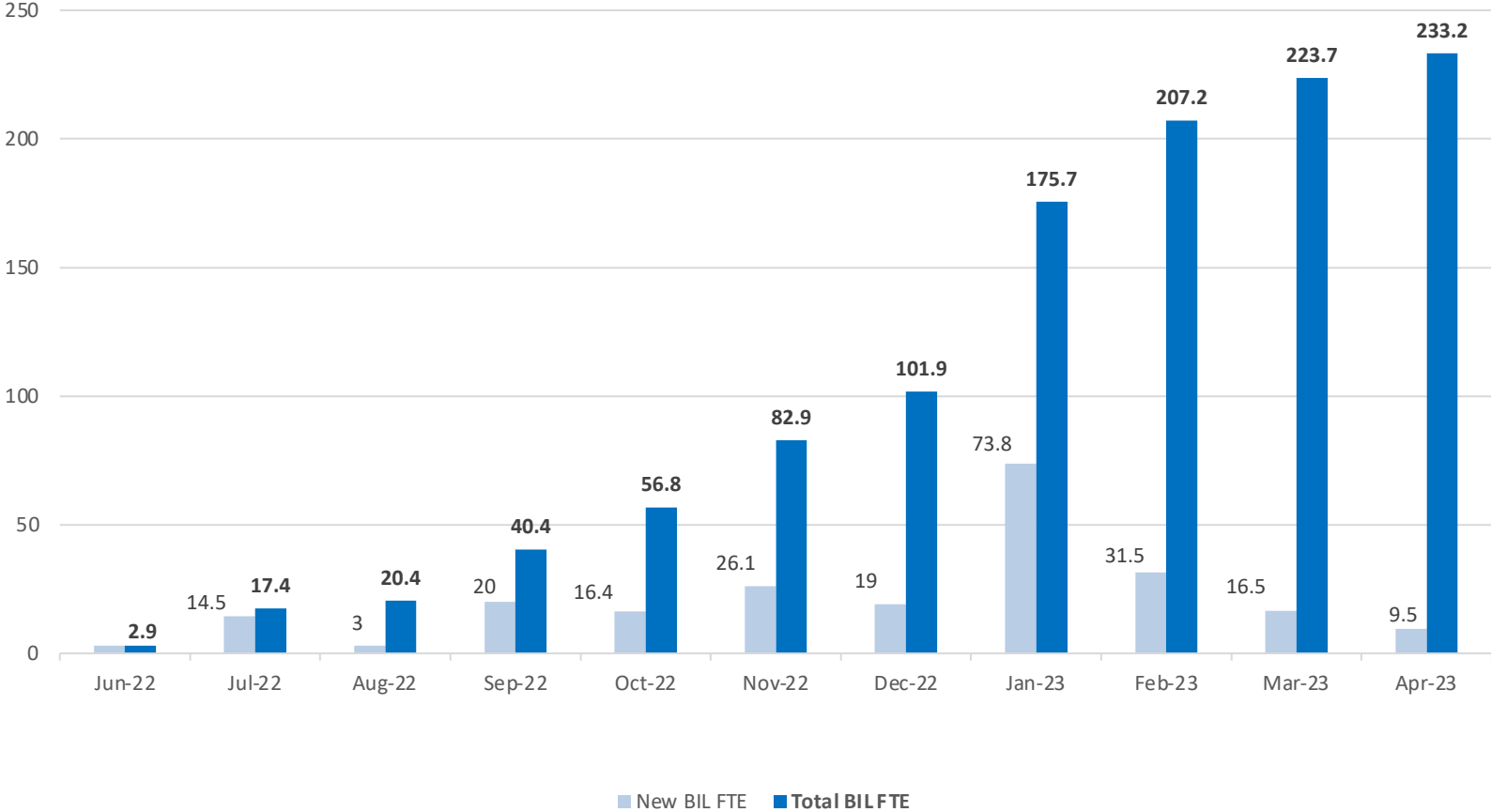
Advertisement to Notice to Proceed Average Durations 2018-2022*



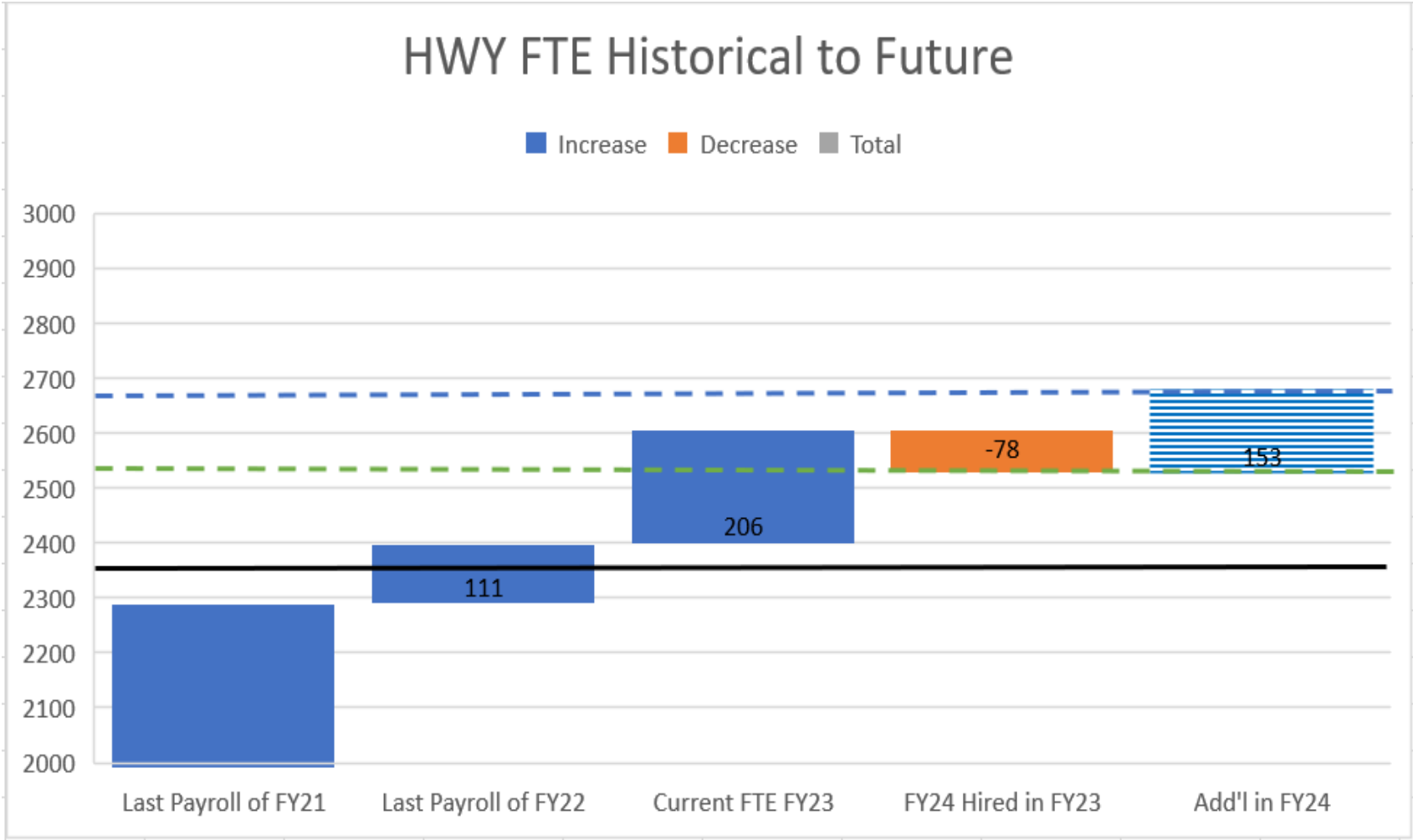
*FFY based on NTP date as of 7/13/2022

Results

BIL FTE Hiring Growth



Results

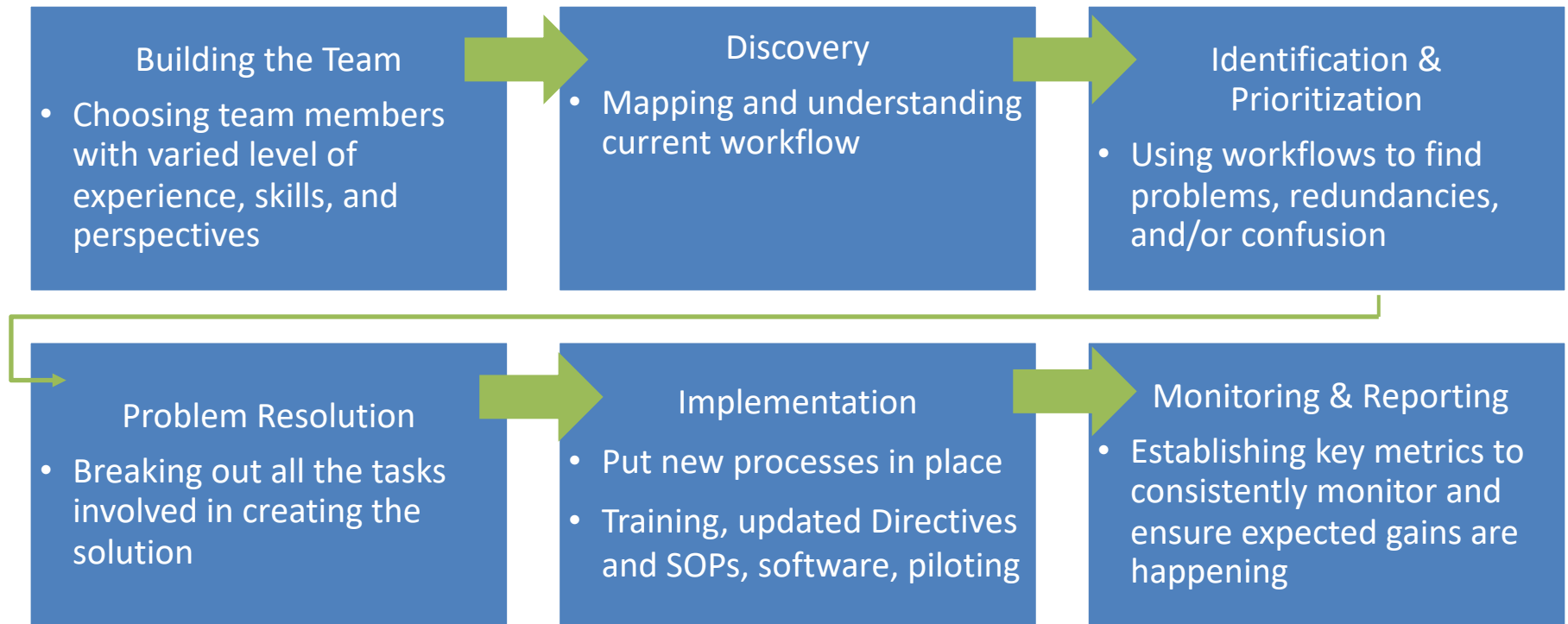


Highway Agile Scrum Structure

Change management mindset, promoting decision making cross-functional teams.



Highway Process Improvement Framework



BIL Project Development Workstreams

Bipartisan Infrastructure Law (BIL) created an opportunity for continuous improvement of the project delivery process.

BIL Workstream	Goal
Alternative Project Delivery	Top to bottom review of the program processes to identify bottlenecks and improvements needed to improve velocity of projects which may include program enhancements and needed policy changes.
District Bridge Maintenance Contracting	Improve the consistency of District Bridge Maintenance Contracting to support funding increase and streamline/improve contract execution to support OIG's findings
Environmental	Streamline the ENV review process to help reduce duration of environmental permitting to ensure on time project advertisement. Development of a performance management dashboard.
Right of Way	Top to bottom review of ROW process to identify areas where efficiencies can be realized, and the resources needed to effect changes identified. Development of a performance management dashboard.
Risk-Based Design & Review	Evaluate and streamline (identify, analyze and prioritize) risk with design process and review, and establish processes/tools to decrease the overall design duration
Traffic Control	Reduce reliance on MSP for construction details by relying on alternatives to police details and/or other interventions.

Progress and Products

Major takeaway: Momentum for a mindset of continuous assessment and improvements!

- Streamlined processes across Highway Division increased efficiencies, eliminated redundancies, and improved quality and speed of project delivery
- Created eight Power BI dashboards to leverage data for transparency and to easily spot anticipated problems to mitigate
- Software installations (VueWorks, Work Zone Scheduling) solved longstanding communication and tracking issues
- SharePoint sites created to serve Departments and Districts
- Updated section-specific training for new staff

Questions for Panelists

1. What was your experience with adopting Agile practices and mindset? Was it easy/challenging?
2. What do you know now that you wish you had known before being selected to facilitate your workstream?
3. How did Agile framework enable you to make and implement changes in your department?
4. What was an aspect of the Agile methodology that you initially found to be challenging or unfamiliar, but was later helpful in achieving the workstream goal?
5. Are there ways that Agile thinking and/or structure has impacted your work outside of the process improvement workstream?
6. Any words of advice for our audience who may have interest in creating efficiencies or improvements in their departments?

Appendix

Alternative Project Delivery

Goal:

- Top-to-bottom review of the program processes to identify bottlenecks and improvements needed to improve velocity of projects which may include program enhancements and needed policy changes

Major Accomplishments:

- Established improved communication process with CIM
- Created and implemented Design-Build Training for MassDOT employees and external contractors
- Built process flows
- Developed Design-Build Manual

District Bridge Maintenance Contracting

Goal:

- Improve the consistency of District Bridge Maintenance Contracting to support funding increase and streamline and improve contract execution to support OIG's findings

Major Accomplishments:

- Developing a work order tracking system and implementing Vue Works software to support it
- Dashboards created
- Bridge Maintenance & Preservation Manual
- SharePoint library of resources – template projects and standard special provisions
- Project paths created for various locations versus site specific

Right of Way (ROW)

Goal:

- Top to bottom review of ROW processes to identify areas where efficiencies can be realized, and the resources needed to effect changes identified.
- Development of a performance management dashboard

Major Accomplishments:

- Year-long staff training developed; will be rolled out shortly
- SharePoint State and Municipal Tracker developed to provide immediate access to project information and status of steps to ROW clearance
- Dashboards created to enable quick interpretation of case volume, status of projects, risk mitigation and more
- Secured necessary subscriptions for staff to more effectively carry out duties

Risk-Based Design and Review

Goal:

- Evaluate and streamline risk with design process and review and establish processes/tools to decrease overall design duration

Major Accomplishments:

- Updated Scoping Checklist to facilitate a discussion on primary risks and early mitigation strategies to be deployed
- Developed and implemented the SPRAT (Streamlined Project Risk Assessment Tool) to identify candidate projects for streamlining
- Developed a model to score projects based on risk and serve as a data archive for all projects
- Created opportunity to lock down scope for streamlined projects

Traffic Management/Police Detail

Goal:

- Reduce reliance on state police for construction details by relying on alternatives to details and/or other interventions

Major Accomplishments:

- Updated SOP for requesting police details
- SharePoint Traffic Management site created for use in the Districts
- Work Zone Scheduling software pilot
- Updated chapter in the Project Development and Design Guide

Environmental

Goal:

- Streamline the environmental review processes to help reduce duration of permitting and help ensure on-time project advertisement
- Development of a performance management dashboard

Major Accomplishments:

- Process refinements and timing of reviews, including development of Environmental Review Checklist (ERC) to ensure early identification of permit/approvals needed, greater coordination, streamlined project reviews, and improved steps to environmental clearance
- Dashboards created to highlight environmental priority projects, project status, and visualize consultant spending

Panelists – Highway Scrum Masters

- Tim Dexter – Environmental
- Amy Getchel – Traffic
- Susan Harrington – Alternative Project Delivery
- Walter Lynch – Right of Way
- Genesis Poz Diaz – Bridge Preservation
- Kayla Sousa – Capital Delivery