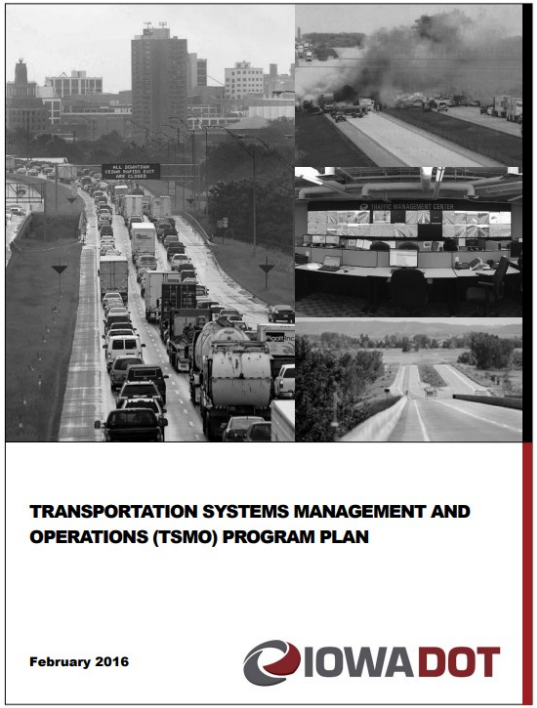
Iowa's Dynamic Approach to TSMO Work Zone Management

April 26,2022

- Iowa's comprehensive 5-year plan
- Utilization of offices & resources
  - TCP
  - WZDx
  - Feedback loops
  - Performance
- New Positions
- Update schedule

Iowa's 5-year Plan

Iowa's 5-Year Plan



Our process for the WZMSL

Document Review
- Program Plan
- Strategic Plan

Outreach & Current Practice Review
- Central Office
- Field staff

Gap Analysis
- CMF Workshops

Utilization of Iowa's Offices & Resources

78 unique participants

Online Department Survey

27 phone interviews

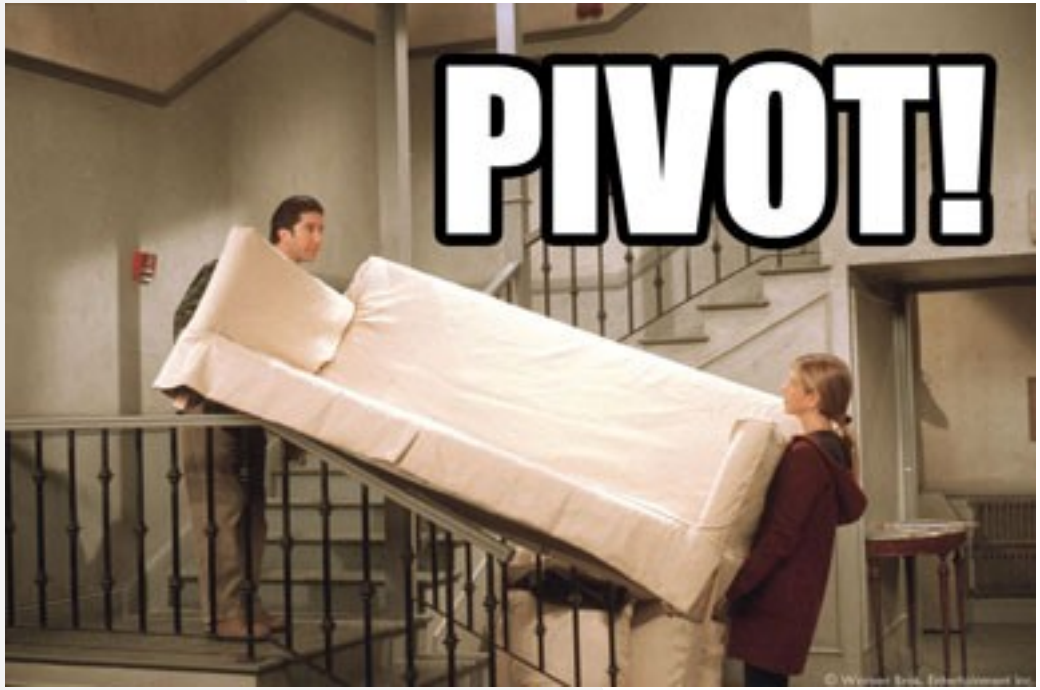
Opportunity & Challenge Investigation

13 members

Work Zone Management Subcommittee

FHWA Gap Analysis Work Zone Dimensions		Work Zone Management Initiatives	Safety	Reliability	Efficiency	Convenience	Coordination	Integration
			Reduce crash frequency and severity	Improve transportation system reliability, increase system resiliency, and add highway capacity in critical corridors	Minimize traffic delay and maximize transportation system efficiency to keep traffic moving	Provide ease of access and mobility choices to customers	Engage all DOT disciplines, external agencies, and jurisdictions to proactively manage and operate the transportation system	Incorporate TSMO strategies throughout DOT's transportation planning, design, construction, maintenance, and operations activities
A. Performance Measures	1	Set performance measure goals for ongoing mobility and safety evaluations and improvements of work zones.	•	•	•			
	2	Establish standards for evaluating traffic management practices during and after a project.	•	•	•	•	•	•
	3	Create a work zone crash information database.	•					
	4	Create a feedback loop for post project construction evaluations and feedback to design.			•		•	•
B. Business Process	1	Update concept procedures and complete safety and mobility analysis in the concept stage of projects.			•			•
	2	Develop best practices for review of traffic staging by field and/or district staff during plan development.	•		•		•	•
	3	Update the design manual to include best practices for traffic staging, coordination with maintenance and utilities.Update the processes, procedures, and manuals to assist with projects utilizing outside help.		•			•	•
C. Systems & Technology	1	Update Iowa's data suite and develop a program for quality, accessibility, and training for all data and available data tools, including plans, and project files.	•		•	•		•
	2	Update work zone record keeping including access to and quality of work zone mobility data (volume, speed, classification).		•		•	•	
	3	Standardize data management including access to and quality of work zone mobility data (volume, speed, classification).	•	•	•		•	•
D. Organization & Workforce	1	Develop criteria/SOP for determining when and how to use standard temporary traffic control and staging in the design phase (and when not to).	•		•	•		
	2	Document & publicize innovations in work zones that improve safety, mobility, and/or work zone operations.		•			•	
	3	Incorporate innovation in work zones to improve safety, mobility, and/or work zone operations.	•	•	•	•	•	•
E. Culture	1	Establish quality standards for the quality/durability of work and maintenance repairs performed.			•		•	
	2	Review and update fund allocation to determine what is more important: delay or economic impact of a project.					•	•
	3	Develop a SOP for coordination between department and local area to assist with timeliness of the work to be both done on-time & in conjunction with other agencies.			•		•	•
F. Collaboration	1	Update/expand formal and ongoing training opportunities available.			•		•	•
	2	Periodically review processes for considering WZM needs for law enforcement, funding levels, and implementation procedures. Revise, as needed, any mutual agreements or memorandums of understanding between law enforcement and the agency for WZM purposes.		•	•		•	•
	3	Establish processes (liaisons, etc.) for upper agency management to garner TMP development support from other stakeholders.			•		•	•

TSMO is an iterative process.

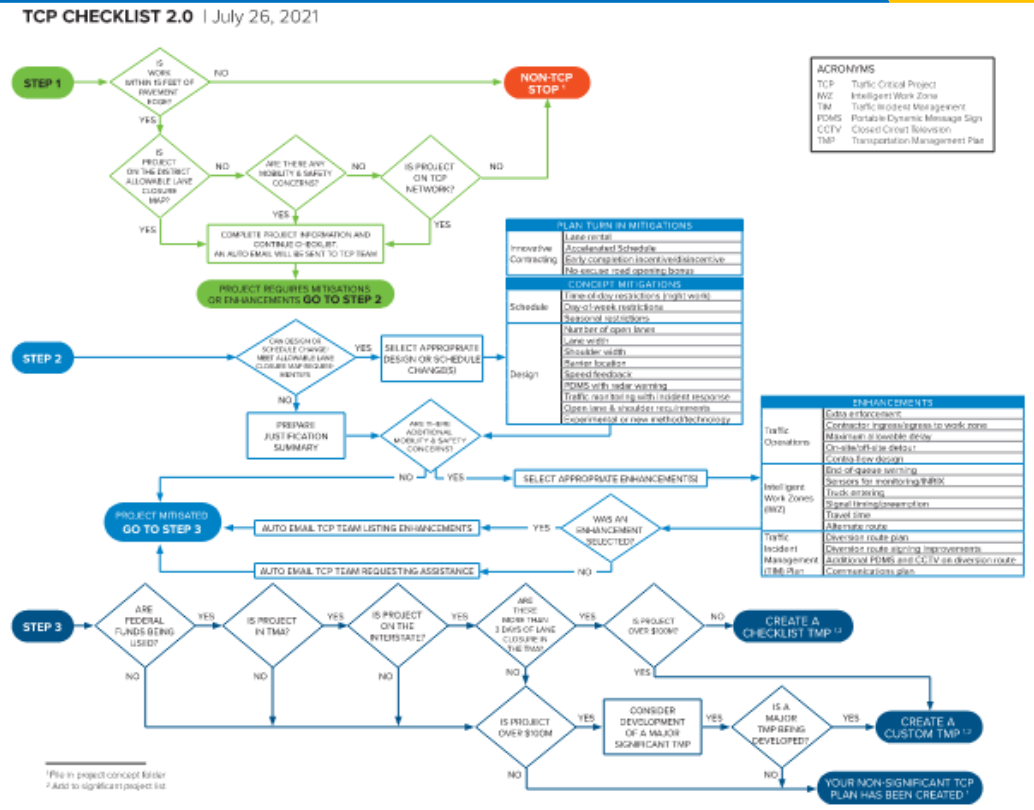


2020 Service Layer Updates

- Identify WZ Performance Measures
- WZ Design Stakeholders
- Put a Process in Place for All Projects to Include TTC & Mitigation Concepts - Expand TCP
- Improved Review Process

Traffic Critical Project - IWZ & More

- Updated TCP process to help identify other mitigation methods.



Traffic Critical Project - IWZ & More

PLAN TURN IN MITIGATIONS	
Innovative Contracting	Lane rental
	Accelerated Schedule
	Early completion incentive/disincentive
	No-excuse road opening bonus

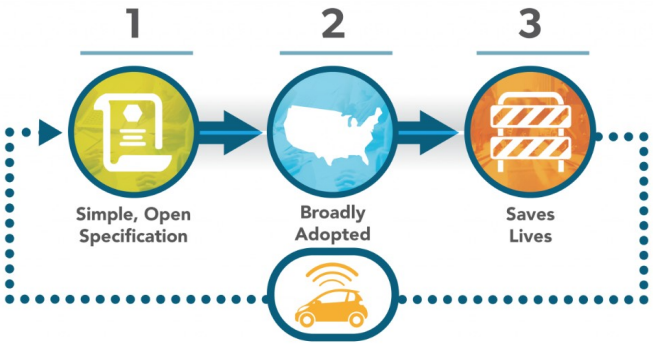
CONCEPT MITIGATIONS	
Schedule	Time-of-day restrictions (night work)
	Day-of-week restrictions
	Seasonal restrictions
Design	Number of open lanes
	Lane width
	Shoulder width
	Barrier location
	Speed feedback
	PDMS with radar warning
	Traffic monitoring with incident response
	Open lane & shoulder requirements
	Experimental or new method/technology

ENHANCEMENTS	
Traffic Operations	Extra enforcement
	Contractor ingress/egress to work zone
	Maximum allowable delay
	On-site/off-site detour
	Contra-flow design
Intelligent Work Zones (IWZ)	End-of-queue warning
	Sensors for monitoring/INRIX
	Truck entering
	Signal timing/preemption
	Travel time
	Alternate route
Traffic Incident Management (TIM) Plan	Diversion route plan
	Diversion route signing improvements
	Additional PDMS and CCTV on diversion route
	Communications plan

Work Zone Data Exchange (WZDx)

Part of U.S. DOTs Data for AV Integration (DAVI) Initiative:

"Access to data is a critical enabler for the safe, efficient, and accessible integration of automated vehicles (AVs) into the transportation system"



Enables infrastructure owners and operators (IOOs) to make harmonized work zone data available for third party use https://www.its.dot.gov/resources/pdf/WZDx_Webinar_Presentation_26FEB2019.pdf

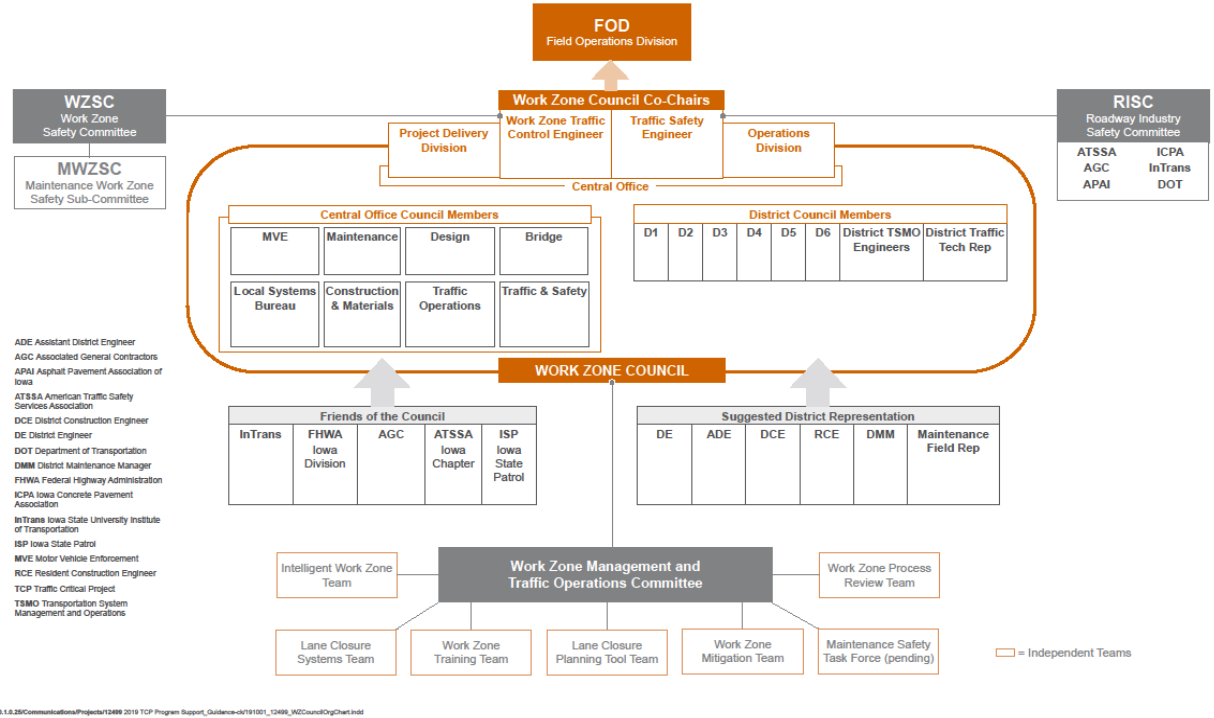
Iowa DOT WZDx Grant Goals

Goal #1: Improve the safety of work zones by providing a WZDx data feed that can be ingested by third party data consumers to reach an expanded number of users.

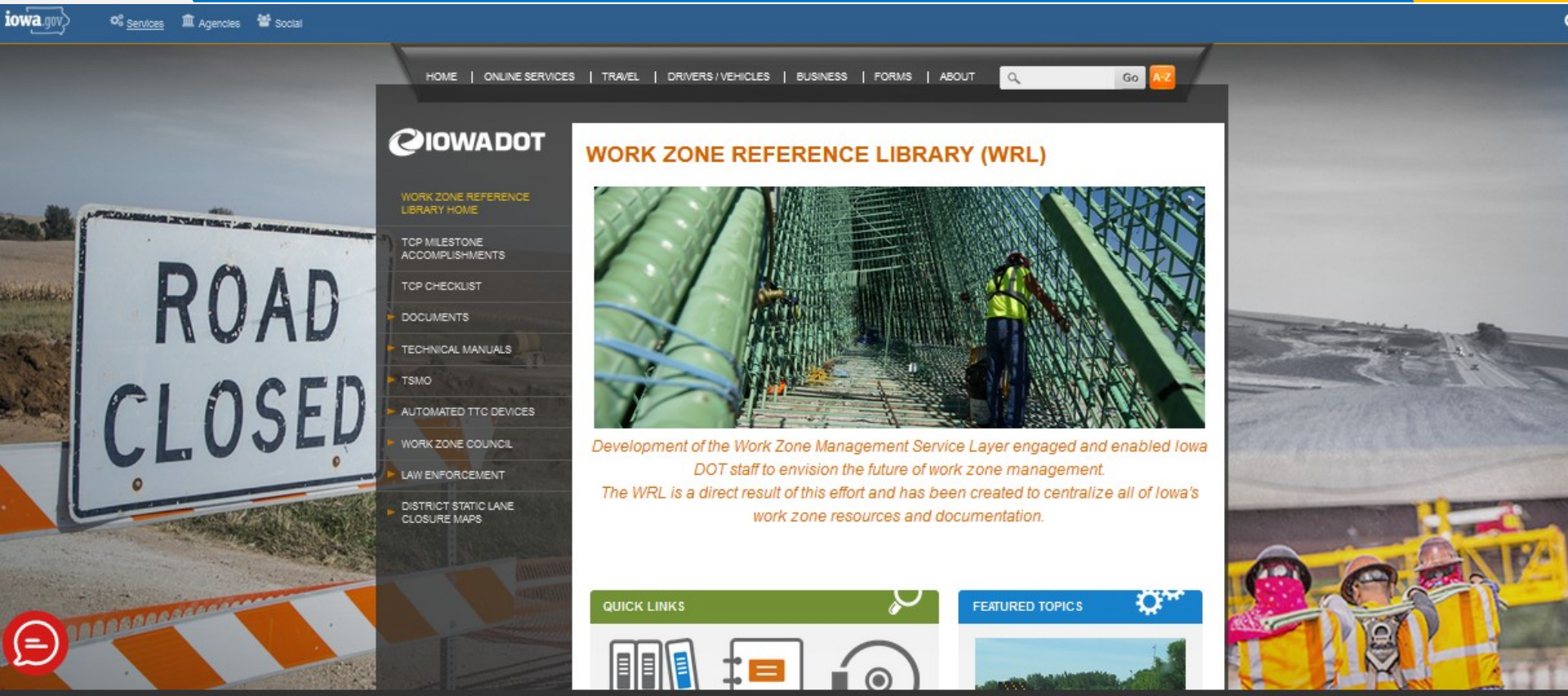
Goal #2: Improve the quality of work zone data by verifying locations and status through the use of connected temporary traffic control devices beginning with smart arrow boards.

Goal #3: Minimize the workload of contractors/field staff by automating the collection of data.

Feedback Loops - Work Zone Council



Feedback Loops - Work Zone Reference Library (WRL)



Feedback Loops - Information Sharing Workshop

Monitoring & Realtime Performance

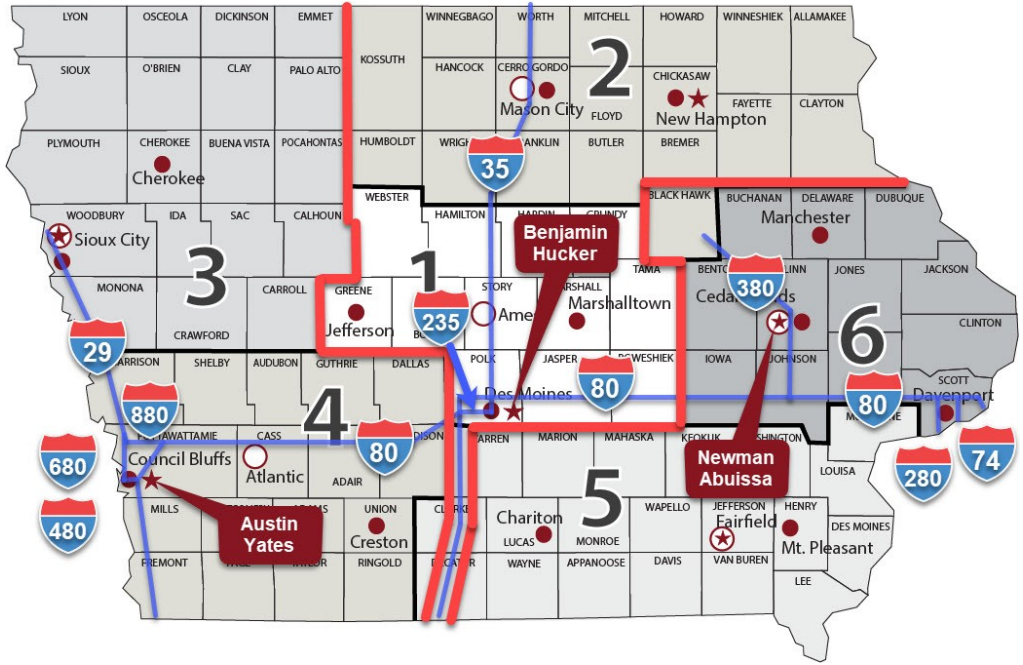
- LCPT
- SAB
- RITIS

New Positions

TSMO Engineers

Regional TSMO Engineers

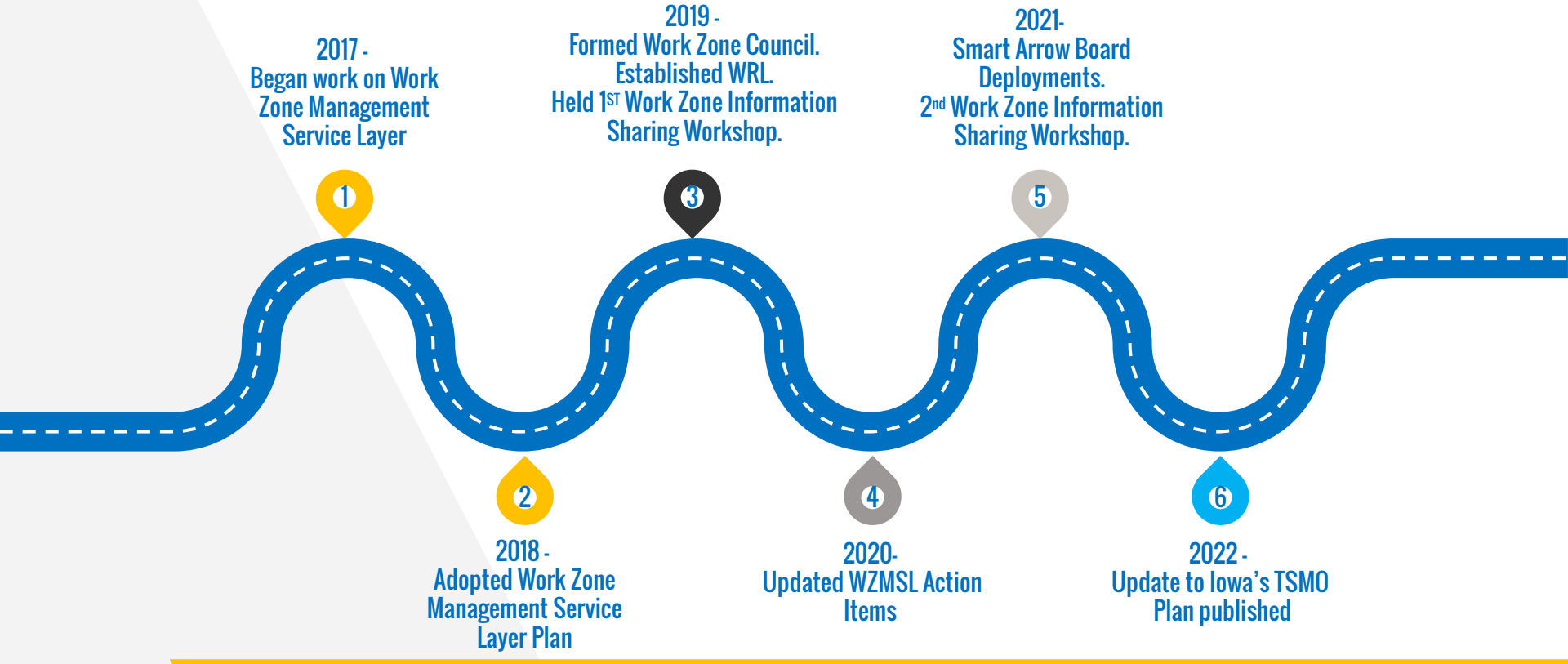
- Optimize existing infrastructure
- Multimodal
- Cross-jurisdictional
- Preserve capacity
- Improve
  - Safety
  - Security
  - Reliability



Update Schedule

What's next?

TSMO Timeline



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