

TRAFFIC MANAGEMENT CENTER (TMC) & ITS OPERATIONS PLAN

Public Works & Engineering Department

Traffic Engineering & Operations

July 25, 2022



Purpose & Background

Purpose

Provide staff direction and approval of the Management Center & ITS Operations Plan

Management Center Plan & ITS Improvements

Management Center Plan is to identify a series of improvement projects to address the transportation-related functional requirements for the City of Mont Belvieu, with an objective of providing a Management Center and advanced transportation system improvements throughout the city for emergency operations.

Traffic Management Center (TMC) - ITS Plan Development

- 3-Year approach to install and implement a systematic plan of ITS projects

Current ITS Projects (FY 2022 – FY 2023)

- Proposed – New Technology Current Signal Design & Construction
 - Radar Detection at New Intersections
 - Presence
 - Advanced
 - ITS Controllers
 - ITS model Cabinets
 - Black Powder Coated poles
 - Countdown Pedestrian Heads
 - Audible push buttons

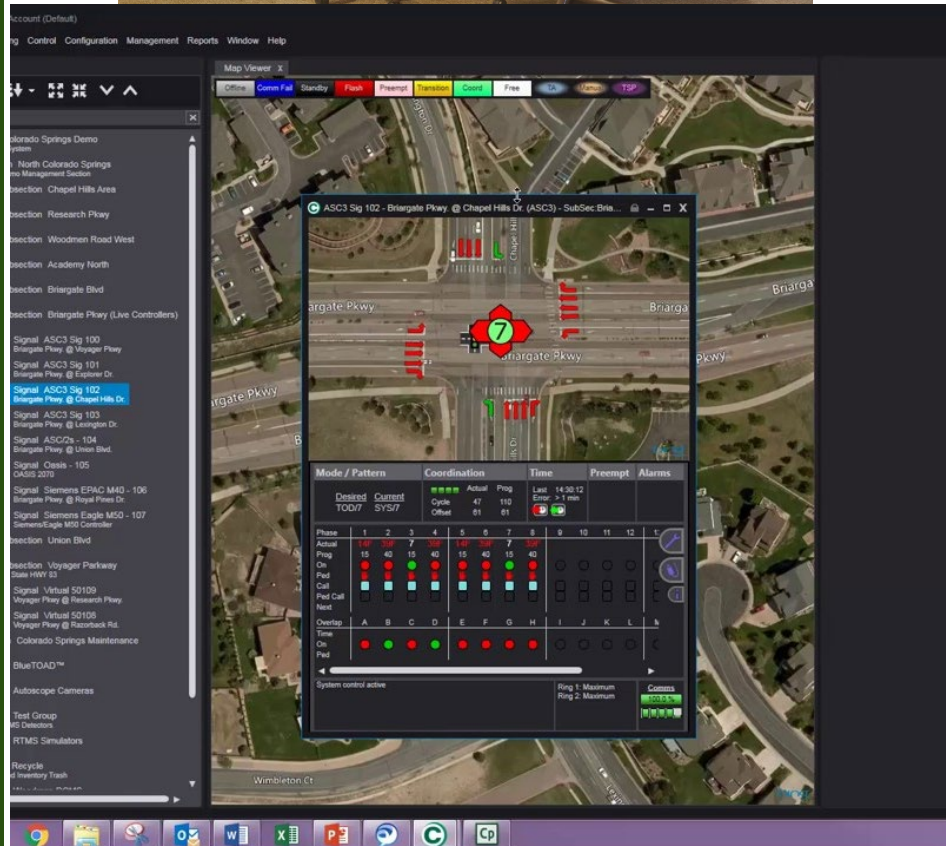
Proposed Future ITS Projects (FY 2023 – FY 2025)

Project List	FY 2023	FY 2024	FY 2025	Comment
Traffic Management Center Emergency Operations including Master Software, ITS Equipment & Intersection Integration		✓	✓	Management Center to be installed with central software and necessary integration
Upgrade Intersection, Local Software, and Intersection Detection including Fiber Communication Equipment (Controller, Cabinet, Detection and Cameras)	✓	✓		Update existing intersections with local software, controllers, cabinets, detection, and Cameras
Traffic Signal Standard Details for Construction (Future Signal Designs & ITS equipment needed)	✓			Establish Standards and Details for Future intersection and ITS needs
Signal Timing Optimization Program (All Signals within City) (Updating Timing Plans including Events)			✓	Optimize signal timings on bi-annual basis for growth and pattern changes
Installation of DMS for Emergency Operations Messaging linked to TMC			✓	Implement message signs for emergency operations and event assistants
Wireless Communication (out of existing fiber range) - Only If Needed (Fiber limited areas)		✓		Accommodate future system outside of communication limits, when needed

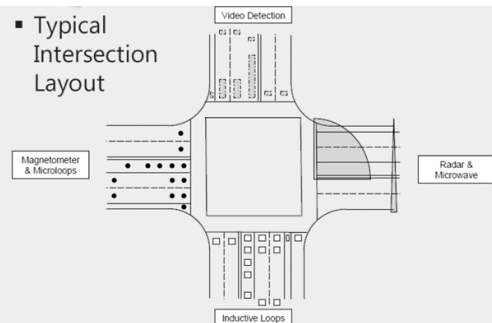
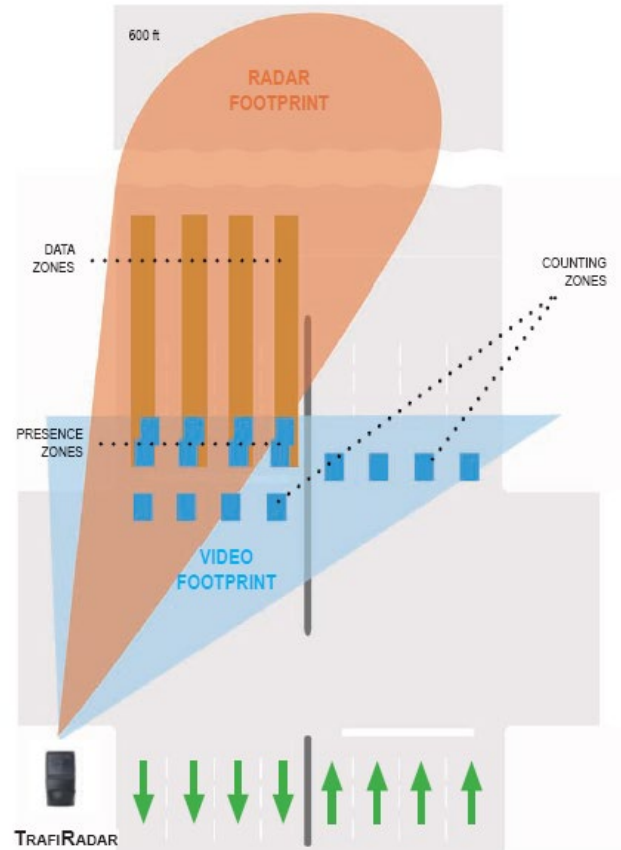


TRAFFIC MANAGEMENT CENTER EMERGENCY OPERATIONS INCLUDING MASTER SOFTWARE, ITS EQUIPMENT & INTERSECTION INTEGRATION

- Latest technologies
- Improve accuracy and time, alert travelers, data collection, and management.
- Traffic management & prioritizing
- Inclement weather
- Reporting incidents
- Natural disaster evacuations
- Emergency responses



BROADEN YOUR VIEW, WITH VIDEO AND RADAR



UPGRADE INTERSECTION, LOCAL SOFTWARE, AND FIBER COMMUNICATION EQUIPMENT (CONTROLLER, CABINET, DETECTION AND CAMERAS)

Existing Equipment

- Currently video VIVDS (camera) detection - Not reliable
- Cabinet & Controller – outdated for Fiber connection
- Local Software – Old D4 version

Proposed Equipment

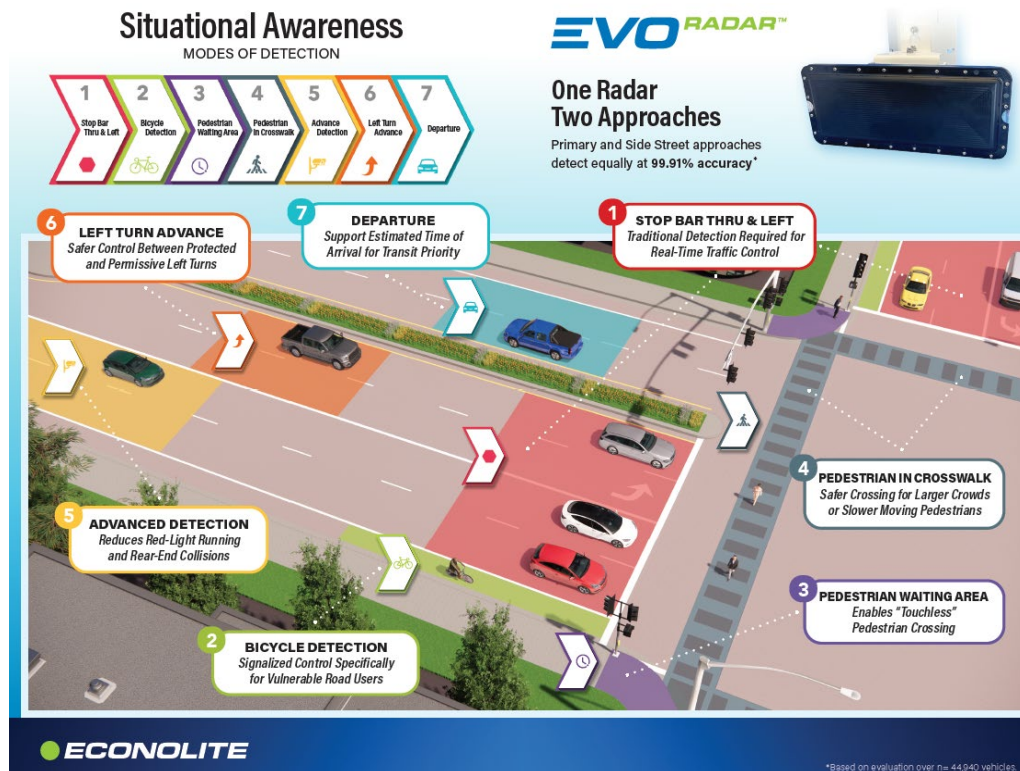
- Radar Detection
- ITS Cabinets & Advanced ATC Controllers
- CCTV Cameras Integration



UPGRADE INTERSECTION, LOCAL SOFTWARE, AND INTERSECTION DETECTION

Proposed Equipment

- Radar Traffic Signal Detection
- ITS Cabinets & Advanced ATC Controllers
- CCTV Cameras Integration at Intersections





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Leader in APS Solutions

Connectivity | Accessibility | Durability

Polara is the trusted industry leader in touchless Accessible Pedestrian Signals.

PUSH OR WAVE AT BUTTON FOR

iNS
APS with iDetect

- Touchless actuation
- Inconspicuous radar detection
- Vandal resistant
- Detects movement typically within 1-4"

PECAPV

TRAFFIC SIGNAL STANDARD DETAILS FOR DESIGN & CONSTRUCTION

Updating of Traffic Standards and Specifications

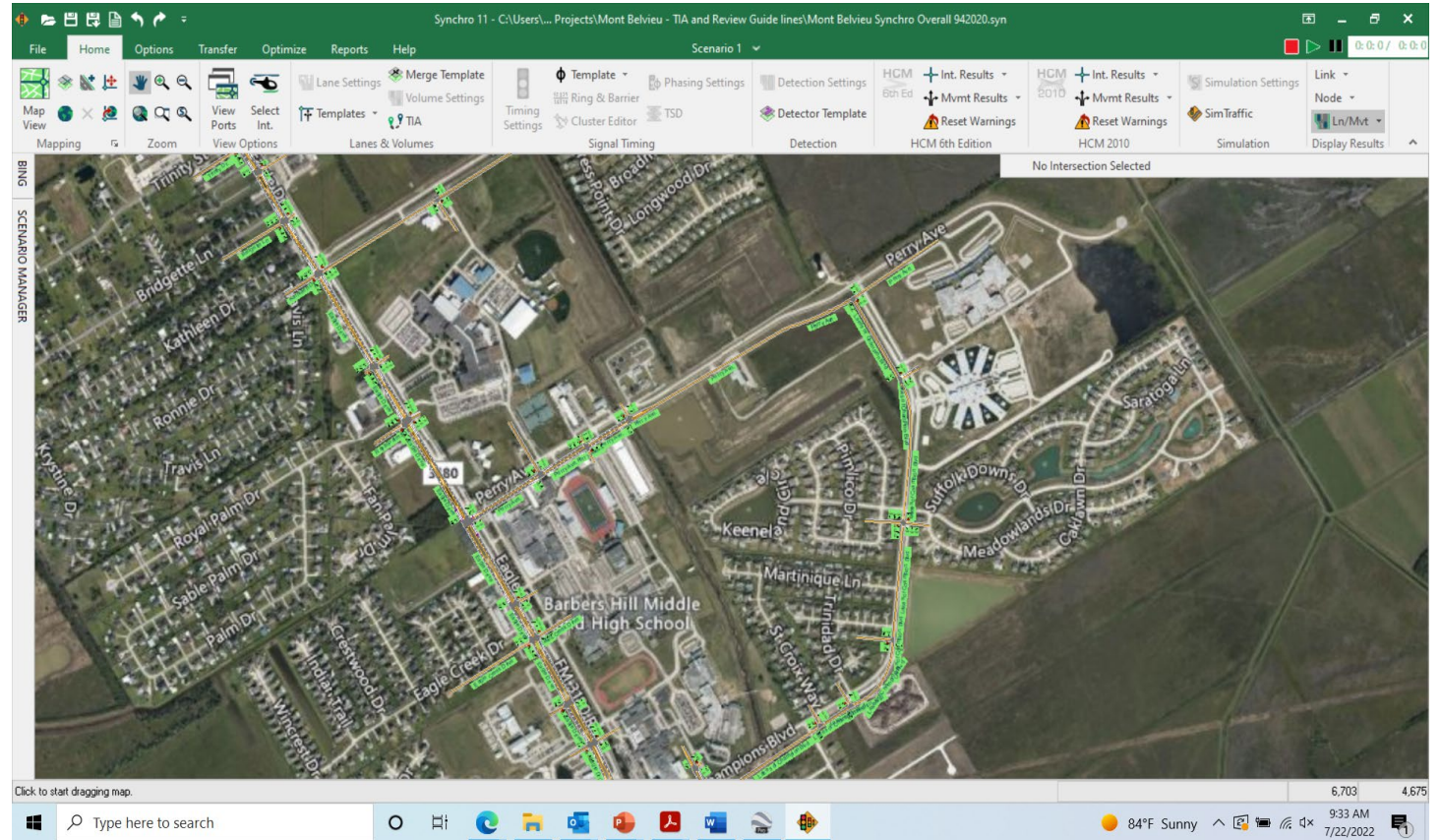
- Current and Consistent Engineering Construction Traffic & ITS Standards.

Future Capital Improvement Projects (CIPs), maintenance projects, and private development projects.

SIGNAL TIMING OPTIMIZATION PROGRAM (ALL SIGNALS WITHIN CITY)

Optimized signal timing is a highly effective low-cost approach to reducing congestion

- Benefit-cost ratios as high as 40-to-1.
- Signal coordination for School Traffic and Events
- Specialized timing plans
- Detour routes major incident in the city or on major Highways.
- Used for Performance Studies



Status
Operation None

Current Preview

**STALLED VEHICLE
AHEAD
IN CENTER LANE**

STALLED VEHICLE
AHEAD
IN CENTER LANE

1 Quick Message
Duration

Clear Send Blank

INSTALLATION OF DMS FOR EMERGENCY OPERATIONS MESSAGING LINKED TO TMC

Permanently Mounted Dynamic Message Signs (DMS)

- Routing information and parking for events.
- Warn residents and employees of delays and alternate routes.
- Emergency detours
- Roadway conditions & alternate routes,
- Construction activities
- Natural Disasters/Emergency Operations

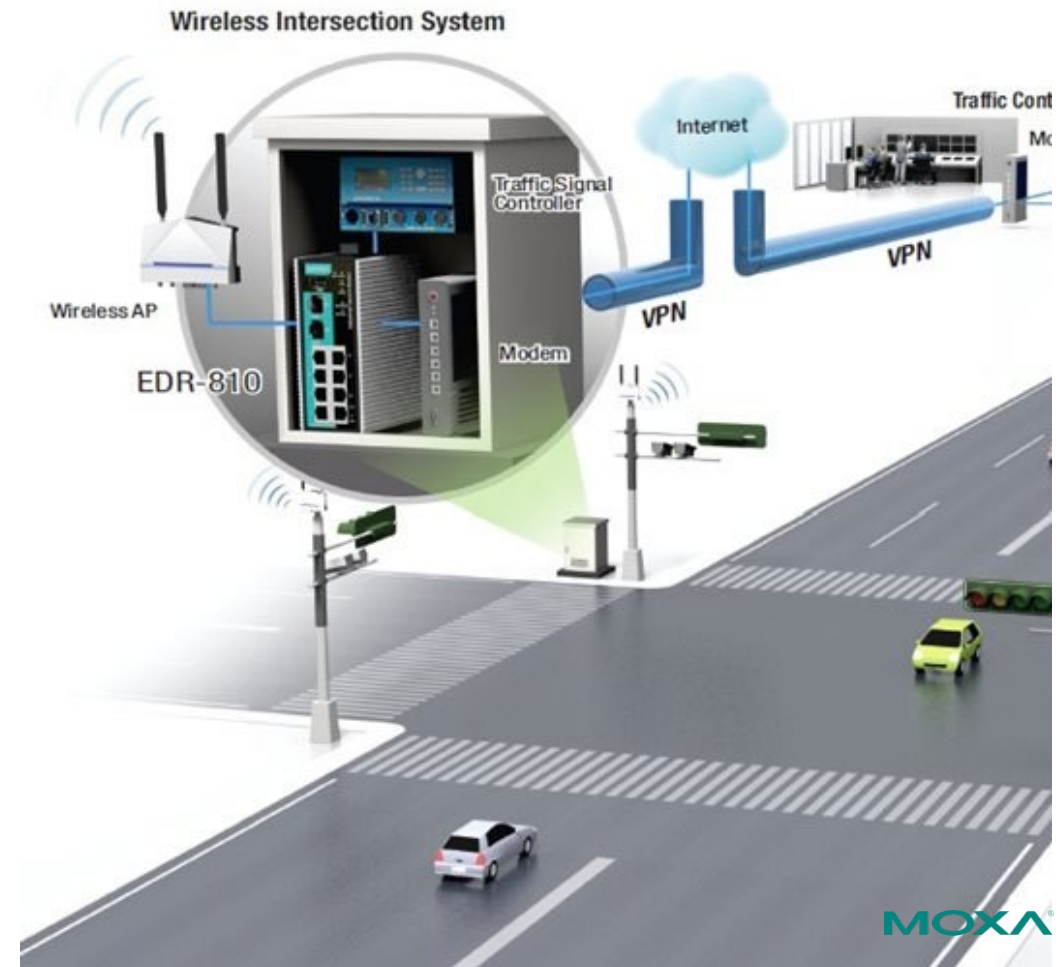


WIRELESS COMMUNICATION (OUT OF EXISTING FIBER RANGE) ONLY IF NEEDED (FIBER LIMITED AREAS)

Wireless communications connect to City hub/Building MBLINK system.

- Existing fiber communications network can add wireless data transmission bandwidth.

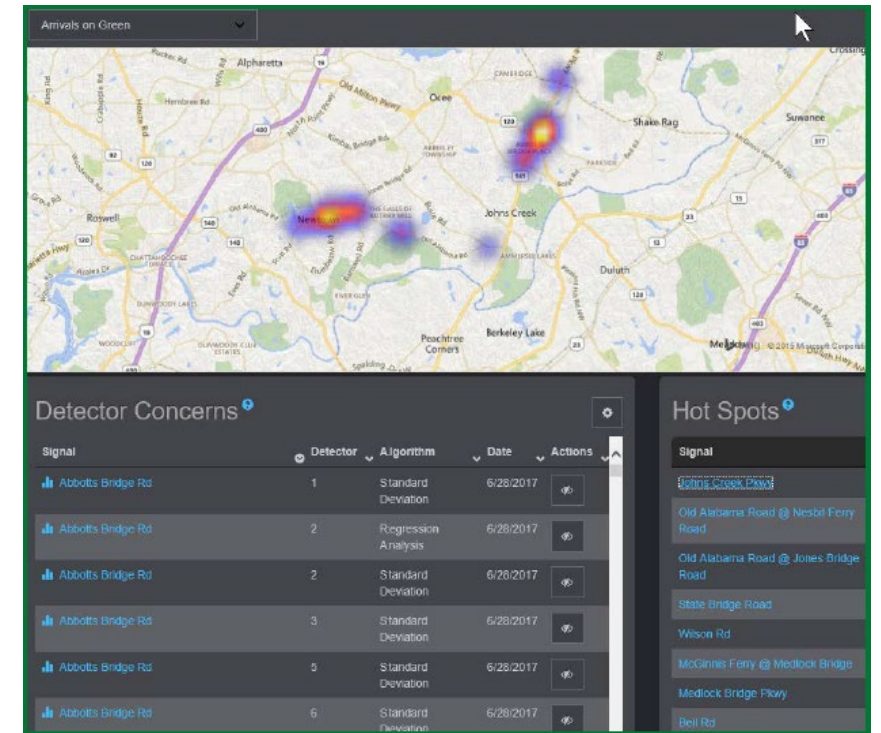
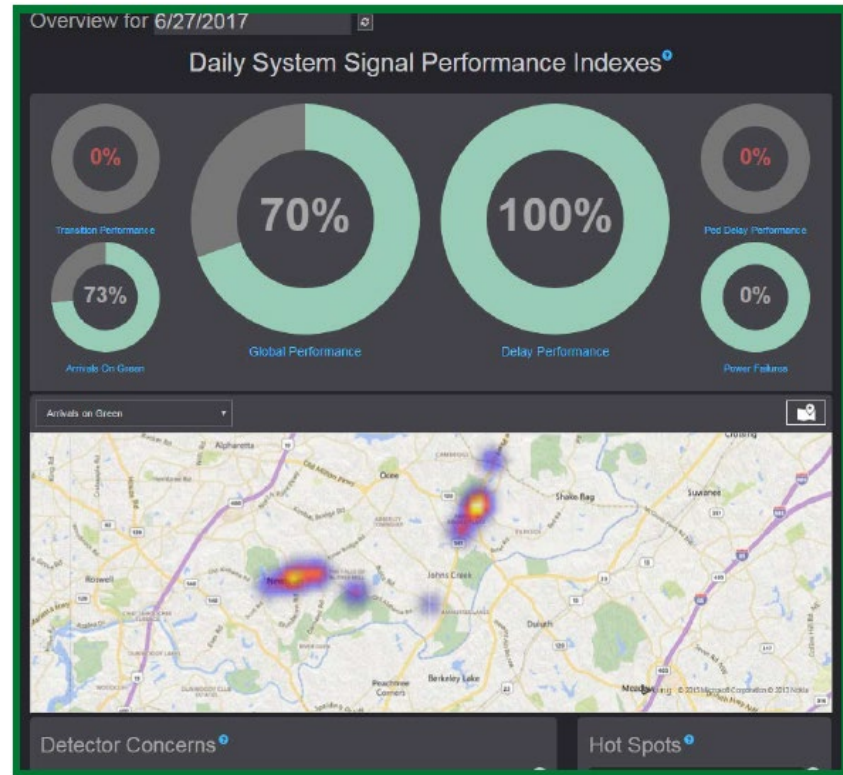
Wireless Only to be used to outlying devices or Intersections.



PERFORMANCE MEASURES

Centracs Module (Software Master and Local)

- Monitoring
- Data Collection
- Quarterly Reports
- Annual Reports
 - Project Reviews
 - Customer Satisfaction
 - Traffic Flow Measures



MANAGEMENT CENTER & ITS PROJECT SCHEDULE

Management Center ITS Emergency Operations Program			
Project	Estimated Project Costs		
	FY 23	FY 24	FY 25
Upgrade Intersection, Local Software, and Intersection Detection including Fiber Communication Equipment (Controller, Cabinet, Detection and Cameras)	\$ 50,000.00	\$ 250,500.00	\$ -
Traffic Signal Standard Details for Construction (Future Signal Designs & ITS equipment needed)	\$ 30,000.00	\$ -	\$ -
Traffic Management Center Emergency Operations including Master Software, Central Equipment & Intersection Integration	\$ -	\$ 225,000.00	\$ -
Signal Timing Optimization Program (All Signals within City) (Updating Timing Plans including Events)	\$ -	\$ 22,500.00	\$ 22,500.00
Installation of DMS for Emergency Operations Messaging linked to TMC	\$ -	\$ 50,000.00	\$ 305,000.00
Wireless Communication (out of existing fiber range) - NOTE: Wireless Communication is not anticipated unless Camera or DMS is needed outside of existing Fiber areas.	\$ -	\$ -	\$ 105,000.00
Total Costs Needed for Traffic Management Center Emergency Operations	\$ 80,000.00	\$ 548,000.00	\$ 432,500.00
Total of 3 Year Cost	\$ 1,060,500.00		
Incidental - 15% Contingency	\$ 159,075.00		
Grand Total of 3 Year Cost	\$ 1,219,575.00		

- HGAC

- Safe Streets and Roads for All
 - Action Grant
 - Implementation Grant
 - 20% Match
 - All (SS4A) \$5 billion over the next 5 years.
 - Year 2022 \$1 billion is available.

Safe Streets and Roads for All Action Plan Grant

This document is not meant to replace the NOFO. Applicants should follow the instructions in the NOFO to correctly apply for a grant. See the SS4A website for more information: <https://www.transportation.gov/SS4A>

S | S

4 | A

Step 1

Learn about the SS4A Grant Program

- Review the Notice of Funding Opportunity (NOFO).
- Check out "How to Apply" webinars and other resources.
- Learn more about the Safe System Approach, and comprehensive safety action planning.

Step 2

Decide who will apply

- Confirm that you are eligible to apply.
- Consider whether to apply individually or as part of a joint application with other eligible applicants.

Step 3

Start the process with SAM.gov

- New applicants must obtain a Unique Entity Identifier (UEI).
- Applicants that previously had a DUNS number must confirm UEI.
- Joint Applications chose a single lead applicant with a single UEI.

Step 4

Choose your planning approach

- Will you develop a new plan or complete an existing plan(s)?
- Do you have a plan, but want to pursue supplemental planning activities, including advanced research and analysis?
- See the [SS4A Decision Flow Chart](#) for more guidance.

Safe Streets and Roads for All Action Plan Grant

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Step 5

Identify funding match source

- Required local share of at least 20 percent.
- All matching funds must be from non-Federal sources and may include cash or in-kind, e.g., staff labor on project.
- Details on cost-sharing and match can be found in [2 CFR §200.306](#).

Step 6

Prepare application

- Complete SF forms (424, 424A, 424B, LLL).
- Prepare responses to selection criteria and develop a map.
- Use the [Action Plan Application Template](#) (optional).
- Complete [Self-Certification Eligibility Worksheet](#).

Step 7

Submit application in Grants.gov

- Review application submittal guidance in [Grants.gov](#).
- Apply to the correct package ID PKG00274330.
- Allot time to troubleshoot technical issues and submit by deadline.
- Contact support@grants.gov or 800-518-4726 for assistance.

Step 8

Receive award notification

- Successful applicants will receive notification through Grants.gov via the lead applicants' contact email.
- Officially accept the award and grant agreement terms.

Grant
Awarders
Only

Still have questions? Visit the [SS4A website](https://www.transportation.gov/SS4A)
SS4A Action Plan | Page 1 of 2

Safe Streets and Roads for All Implementation Grant

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S | S

4 | A

Step 1

Learn about the SS4A Grant Program

- Review the Notice of Funding Opportunity (NOFO).
- Check out "How to Apply" webinars and other resources.
- Learn more about integrating the Safe System Approach into your eligible Implementation Grant projects and strategies.

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Decide who will apply

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- Consider whether to apply individually or as part of a joint application with other eligible applicants.

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Start the process with SAM.gov

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Step 4

Decide how to implement your plan

- Use your Action Plan to inform your implementation.
- Determine which projects and strategies from your Action Plan to implement as part of this grant.
- Consider also pursuing supplemental action plan activities.

Safe Streets and Roads for All Implementation Grant

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- Details on cost-sharing and match can be found in [2 CFR §200.306](#).

Step 6

Prepare application

- Complete SF forms (424, 424C, 424D, LLL).
- Prepare response to selection criteria and specify project location(s).
- Use the [Implementation Grant Application Template](#) (optional).
- Complete [Self-Certification Eligibility Worksheet](#).

Step 7

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- Apply to the correct package ID PKG00274229.
- Allot time to troubleshoot technical issues and submit by deadline.
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Step 8



THANK YOU

**QUESTION OR
COMMENTS?**