

Success (and disappointment) obtaining LAP Safety Funding

2/9/2021

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MDOT LAP Safety Engineer

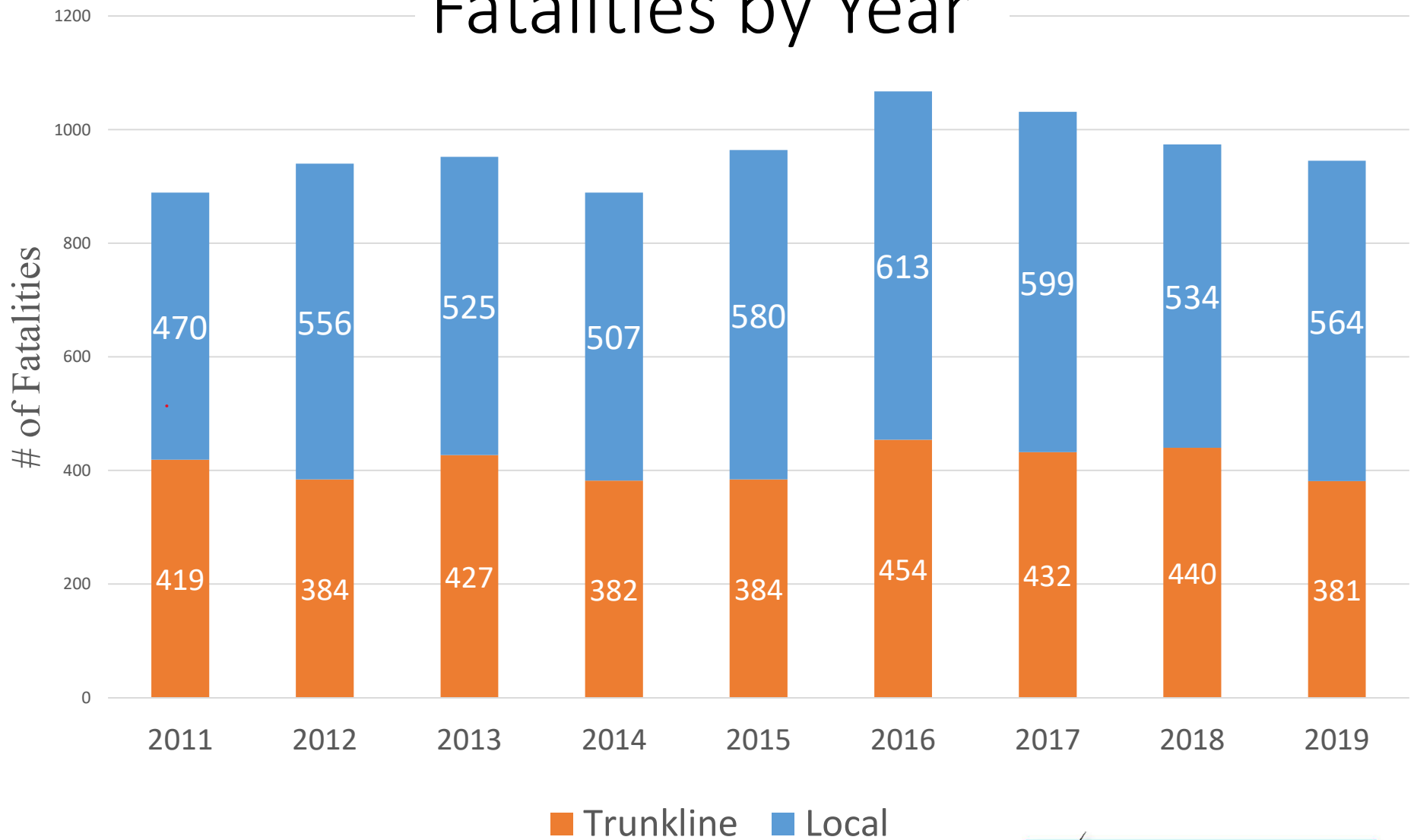
BlazoP@Michigan.gov



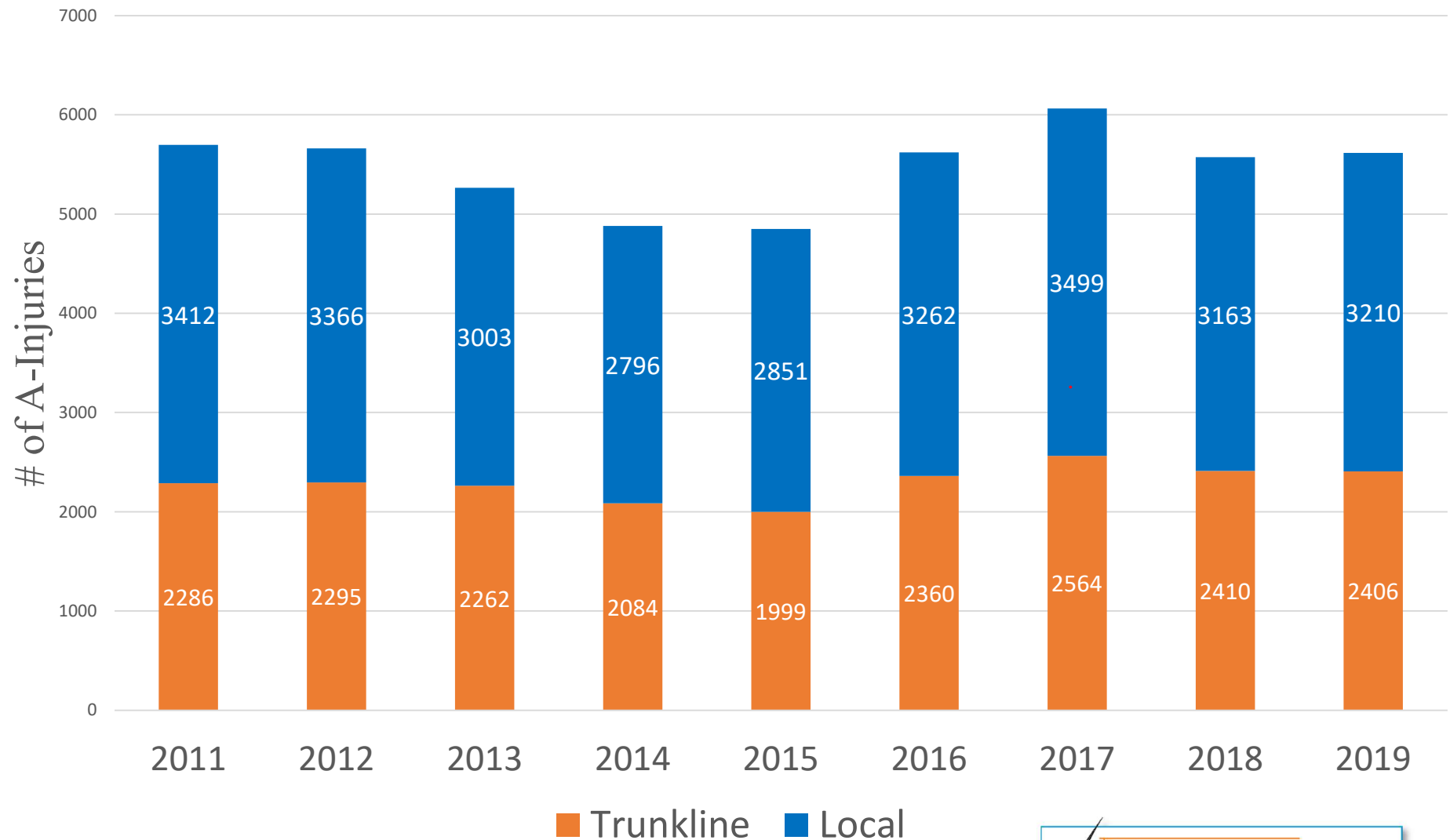
A conference hosted
by...



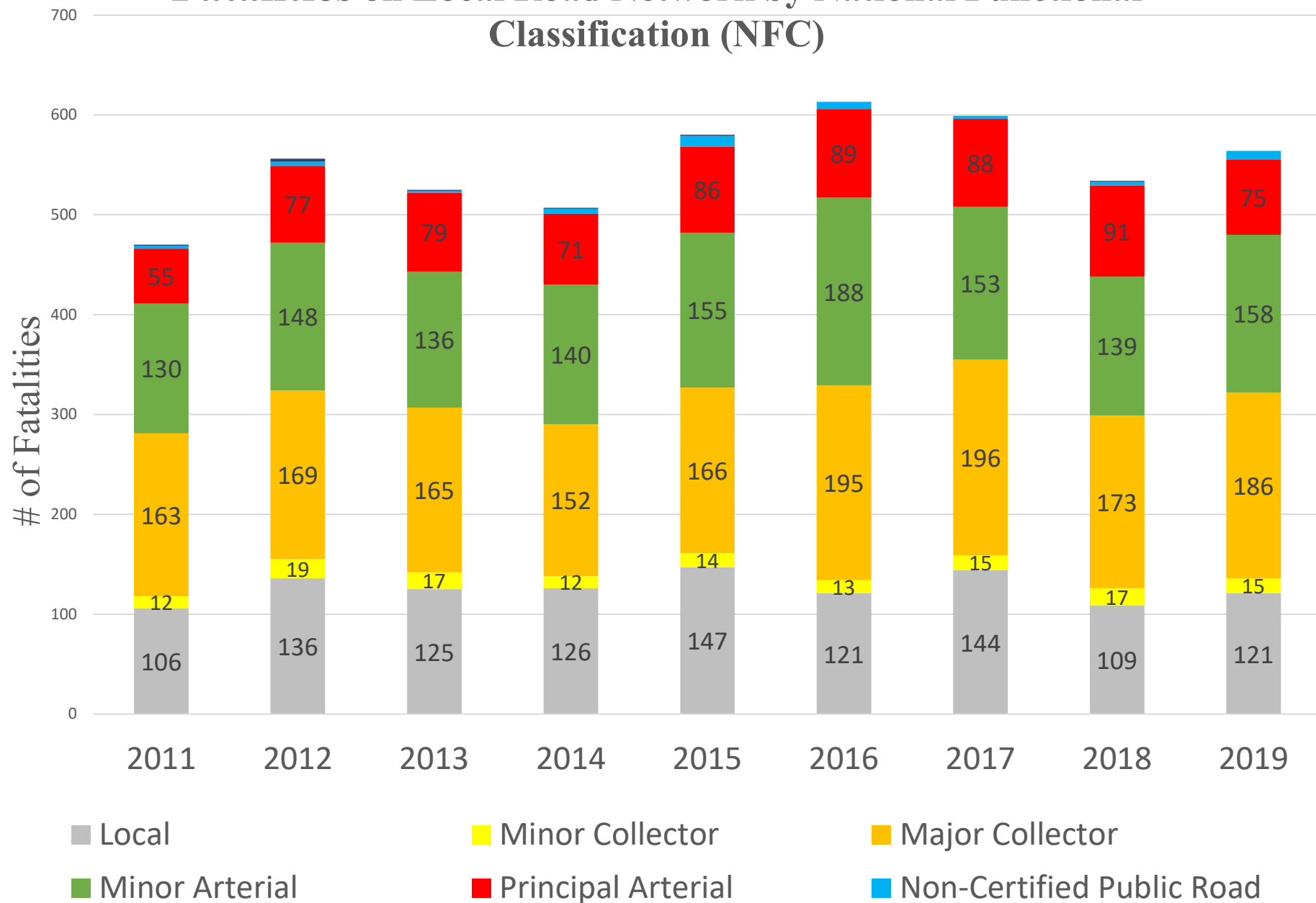
Fatalities by Year



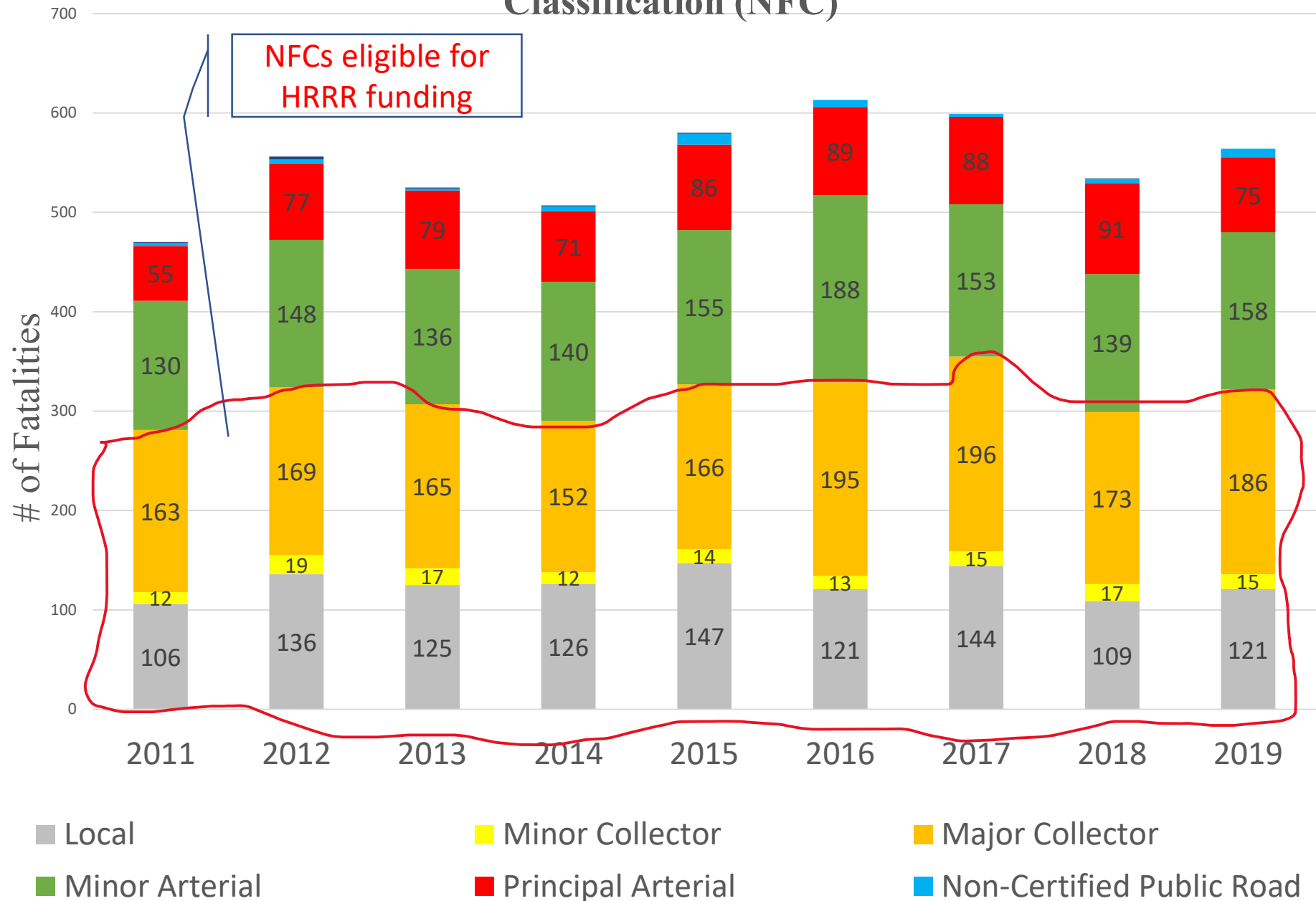
Serious (A-Type) Injuries by Year



Fatalities on Local Road Network by National Functional Classification (NFC)

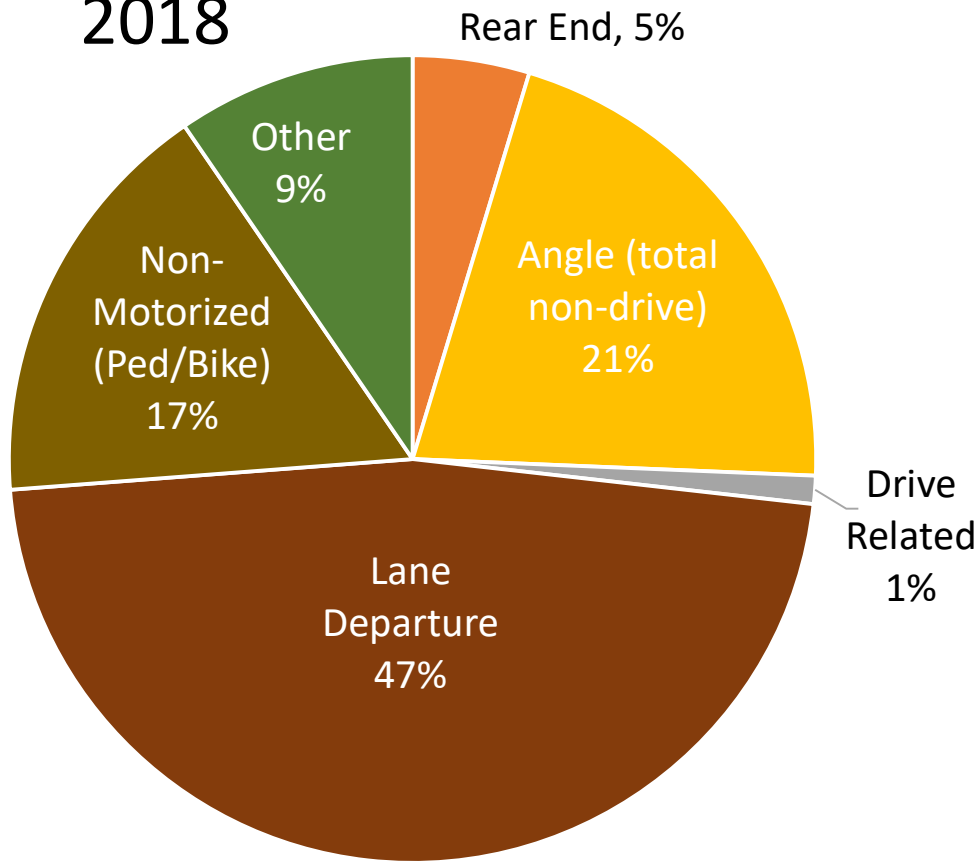


Fatalities on Local Road Network by National Functional Classification (NFC)

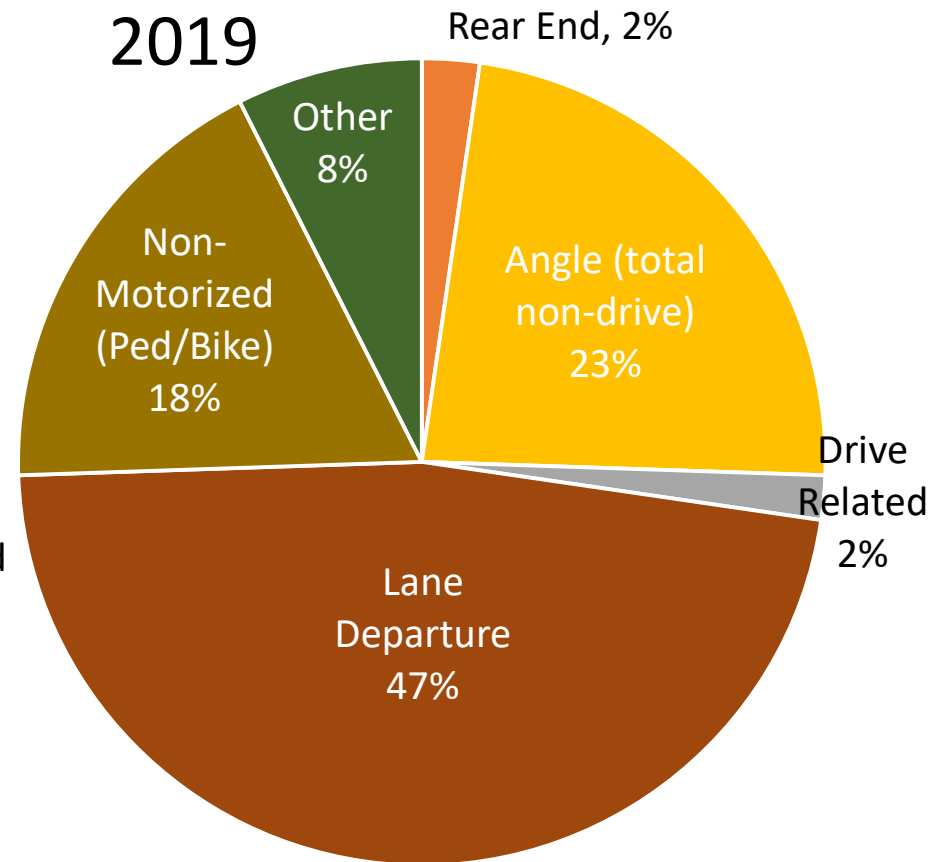


Local (non-trunkline) Fatalities by Crash Type

2018



2019



Eligible for Federal safety funds?

Who?

- Any Act 51 agency
 - 83 county road commissions
 - 274 cities
 - 259 incorporated villages
- Tribes (federally recognized)
- Townships
(submitted thru their County)

Which Roads?

- **Any** non-MDOT roadway open to the general public
 - Regardless of National Functional Classification

Does not have to be on the Fed-Aid network

- Regardless of ADT

What type of projects are eligible?

RUMBLE STRIPS
PAVEMENT MARKING
GUARDRAIL
ROUNDABOUT
SIGNING
TURN LANES
NON-MOTORIZED
SAFETY EDGE
GEOMETRIC UPGRADES
SHOULDER WIDENING
SIGNAL UPGRADES

2023 Safety Program (~\$15M)

The Call Letter published February 1, 2021

Will be split between HRRR, general HSIP, streamlined systemic HSIP

Applications due
May 3, 2021

Selections announced at the end of August (estimated)

Sharing Federal Funds with Local Agencies

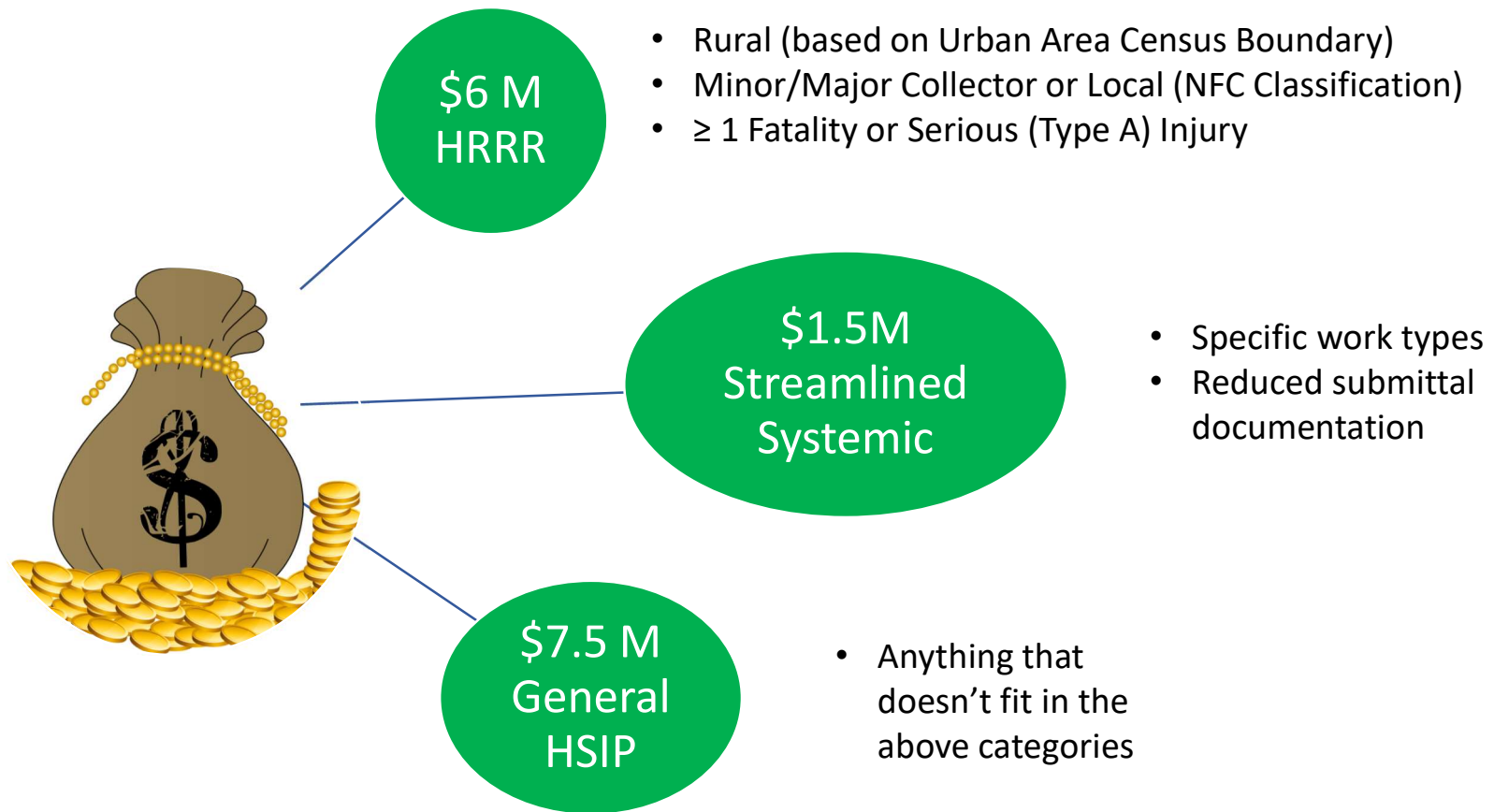
- Requirements per State Law – ACT 51
 - 25% of Federal Aid to Local Agencies
 - Equality Across Programs
 - **~\$15M annually in local HSIP**



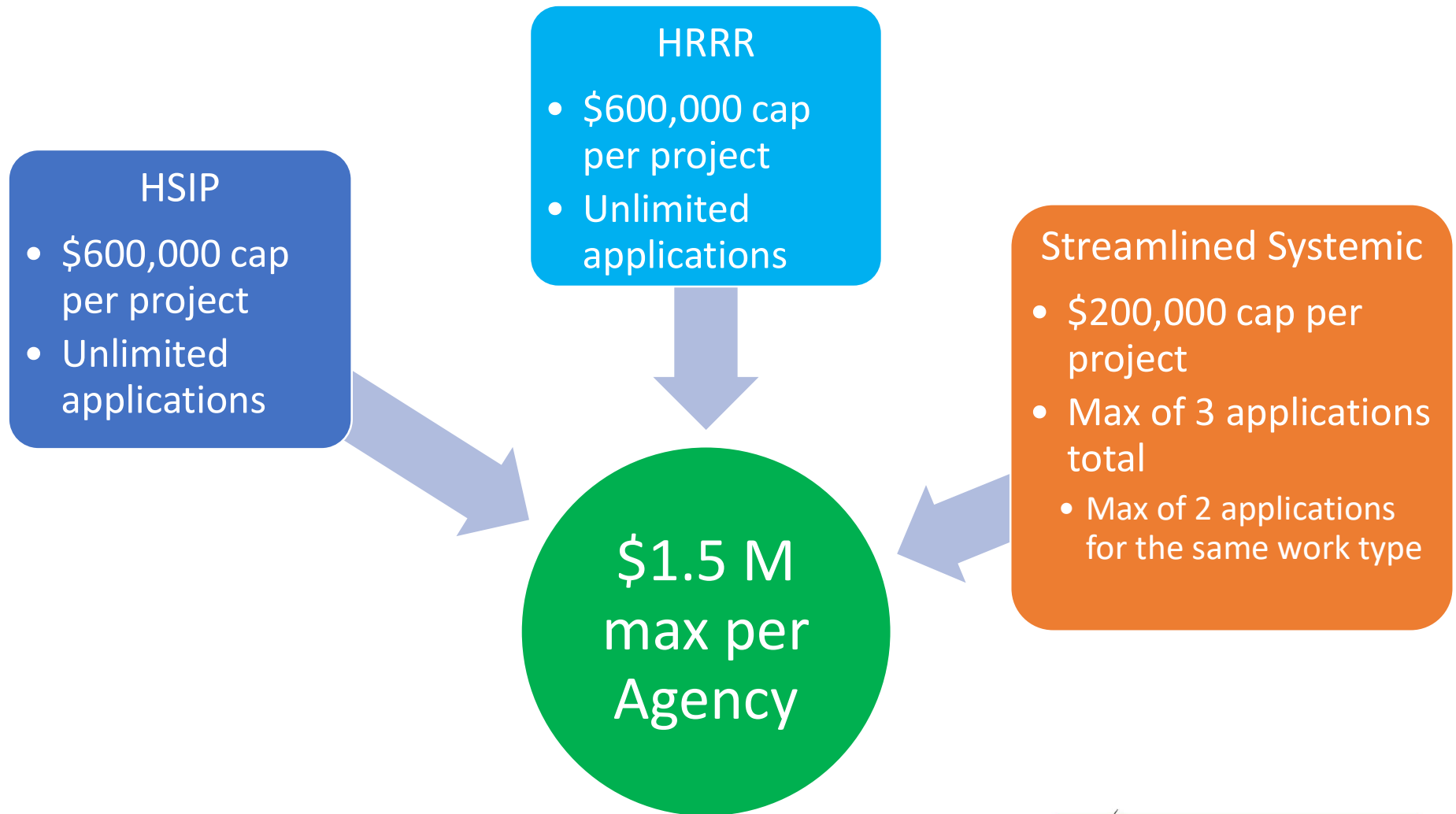
A conference hosted
by...



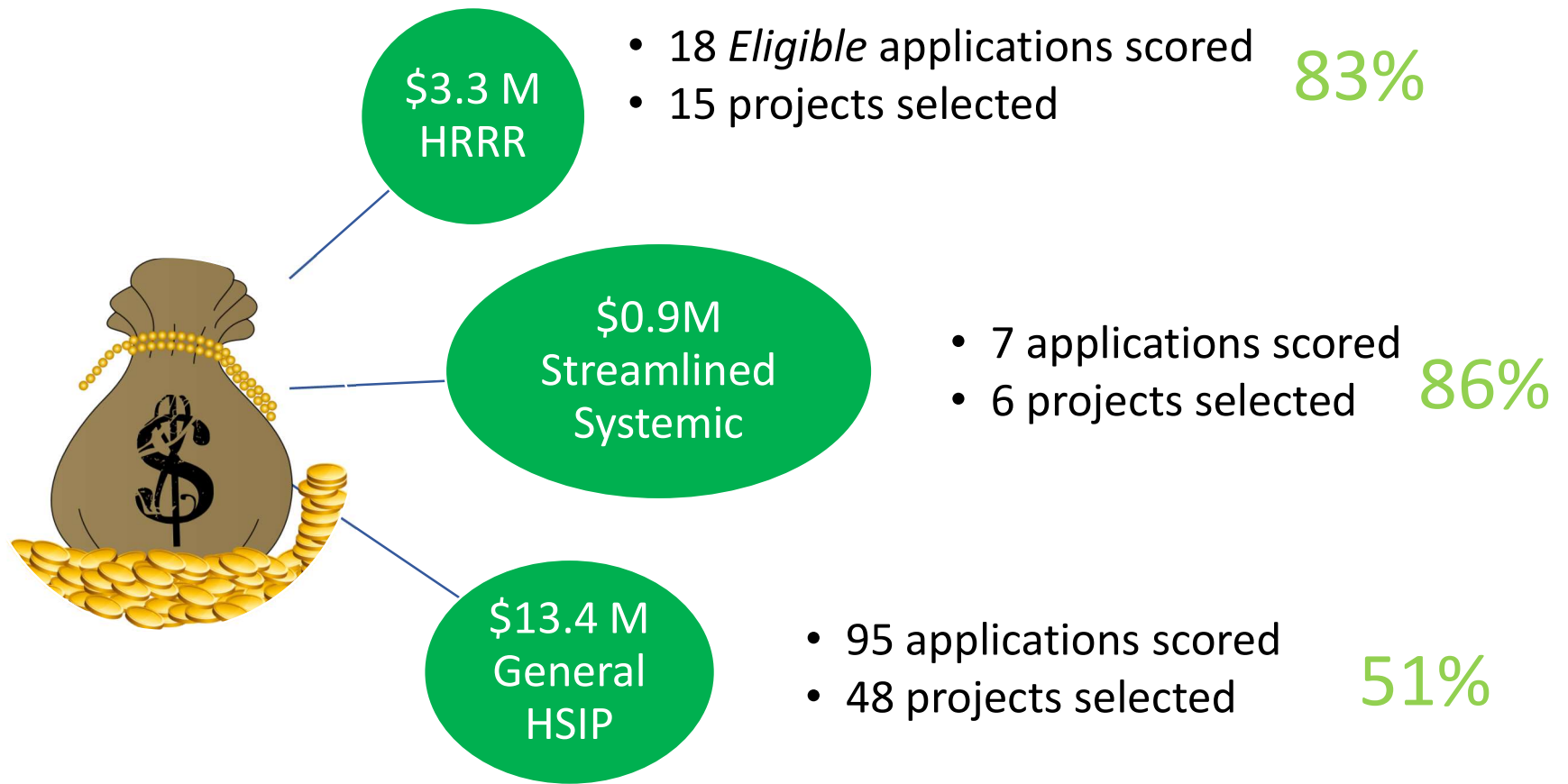
Local HSIP Funding Breakdown

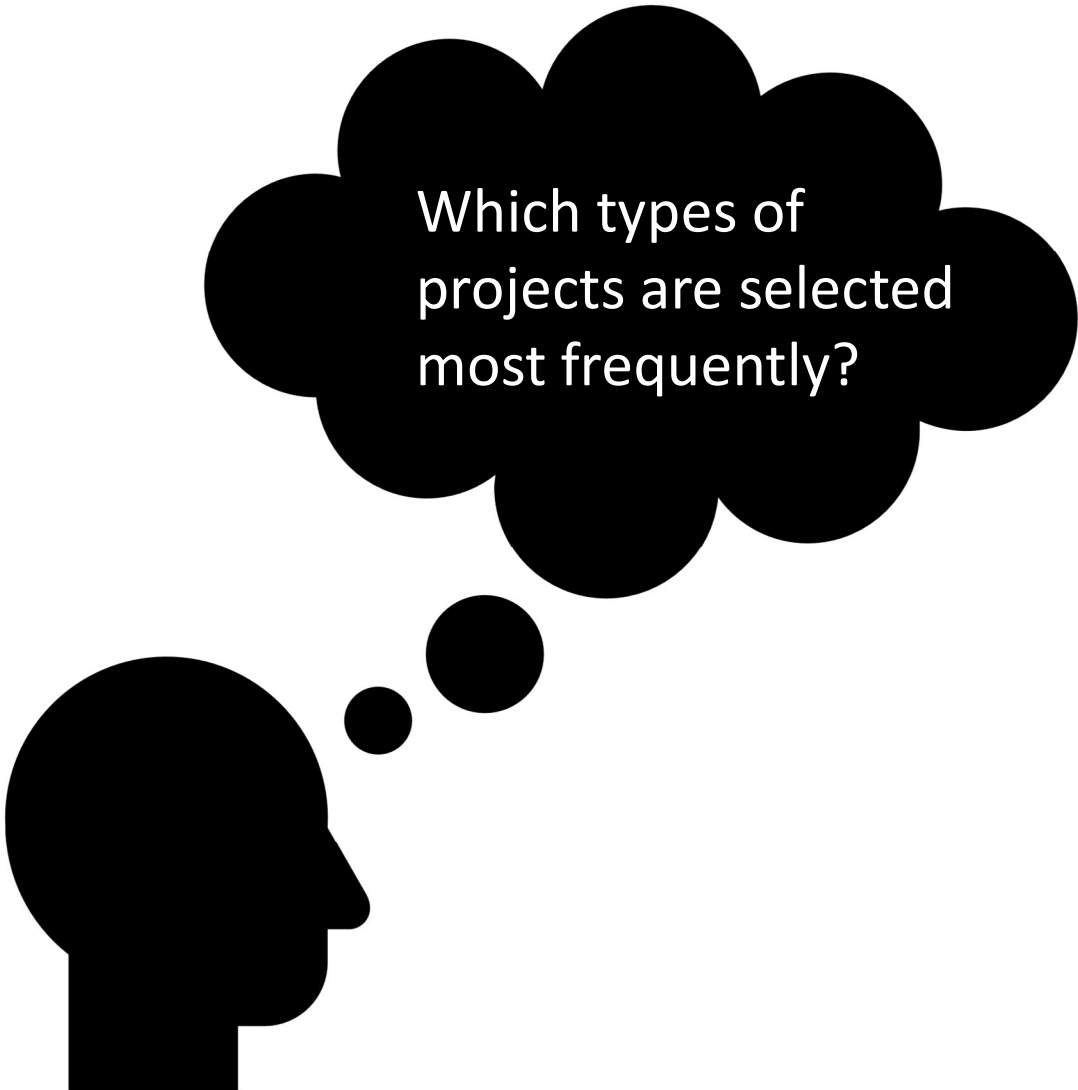


Maximum Awarded Funds per Agency



FY 2022 Selection Results





Which types of
projects are selected
most frequently?



A conference hosted
by...

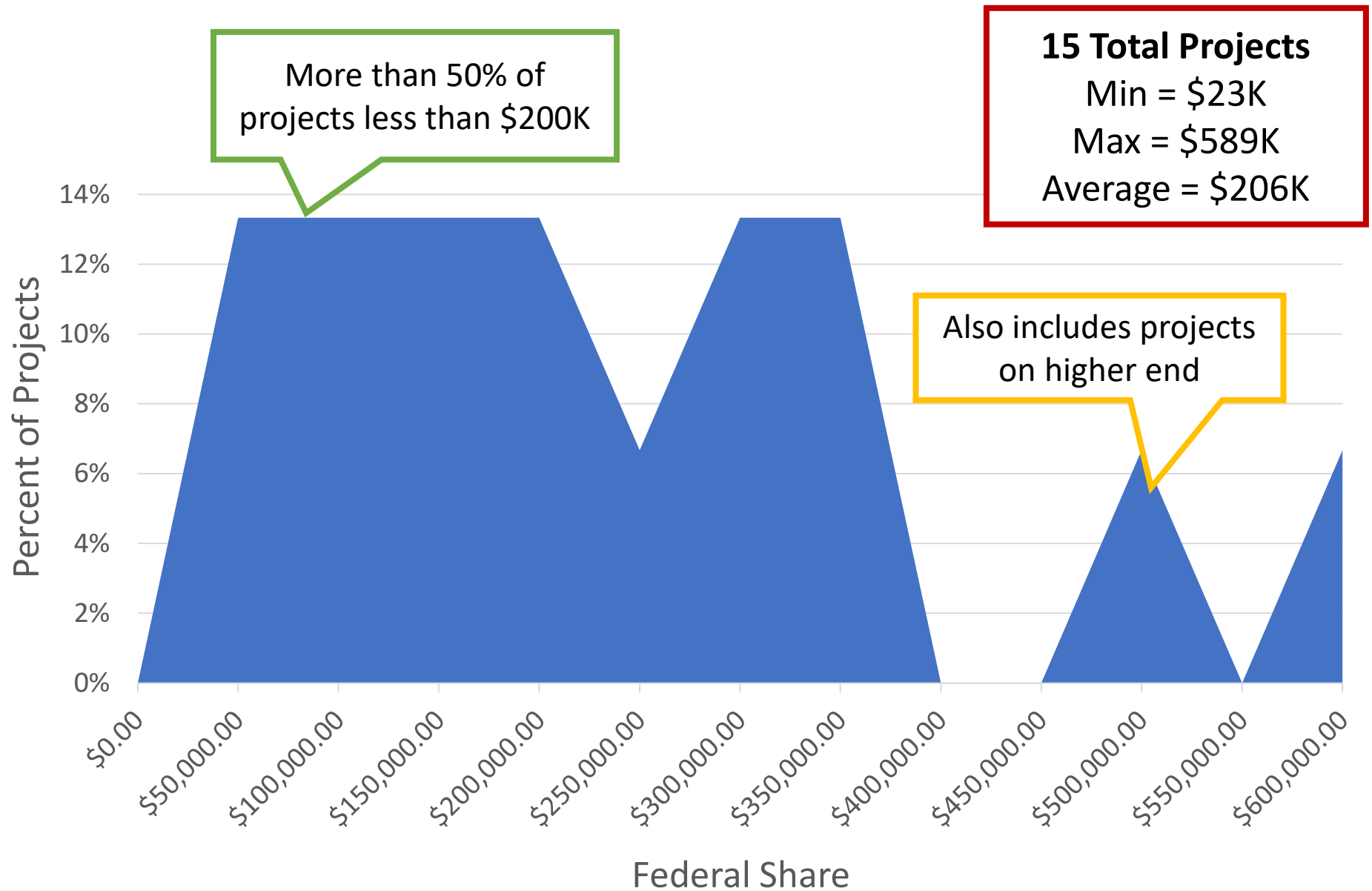


FY 2022 Selected HRRR Projects

Treatments in Project Application	Percent
Fixed Object Removal	47%
Signs	27%
Shoulder Widening	27%
Rumble Strips	20%
Flashing Beacons	20%
Pavement Markings	13%
High Friction Surface Treatment	13%
Vertical Curve Modification	7%
Superelevation Modifications	7%

- Project total cost (not federal share) ranged from \$27k - \$655k
- Average cost of \$242k per project
- Average Time of Return (TOR) of 2.57 years

FY 2022 HRRR – Selected Projects by *Federal Share*



Streamlined Systemic Eligible Project Types

Rumble Strips / Stripes

- Centerline, Shoulder, or both
- Traditional or 'Mumble'

Enhanced Curve Signing

Edgeline pavement markings

Dual Stop and Stop Ahead signs

Signal Backplates

Countdown ped signals

FY 2022 Selected Streamlined Systemic Projects

Rumble Strips /
Stripes

\$173k

Enhanced Curve
Signing

\$339k

Edgeline pavement
markings

\$0

Dual Stop and Stop
Ahead signs

\$14k

Signal Backplates

\$172k

Countdown ped
signals

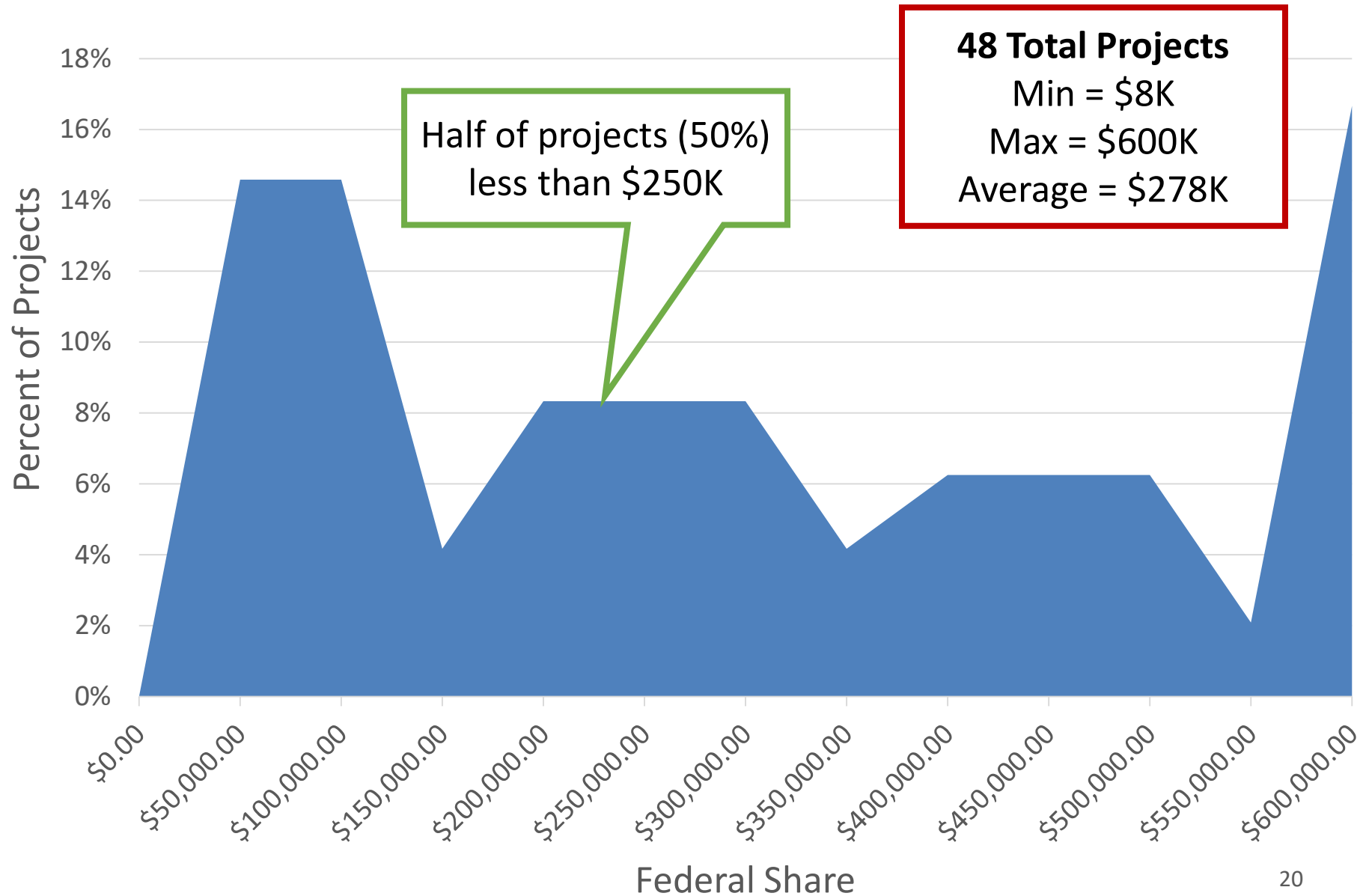
\$199k

FY 2022 Selected HSIP Projects

Treatments in Project Application	Percent
Signs	23%
Signal Upgrades	17%
Non-motorized	15%
Shoulder Widening	13%
Roundabouts	13%
High Friction Surface Treatment	13%
Fixed Object Removal	8%
Pavement Markings	6%
Road Safety Audits	6%
Rumble Strips	6%
Guardrail	4%
Center Left Turn Lane Installation	4%
Superelevation Modifications	4%
Signal Optimization / Timing	4%
Intersection Realignment	2%
Vertical Curve Modifications	2%
Road Diet	2%
Slope Flattening	2%

- Project total cost (not federal share) ranged from \$10k - \$826k
- Average cost of \$329k per project
- Average Time of Return (TOR) of 4.70 years

FY 2022 HSIP – Selected Projects by *Federal Share*



FY 2022 Overall Selection

Category	Selected
Segment	\$10,064,687.67
Intersection	\$7,511,216.04
Signalized	\$4,166,565.04
Stop control	\$3,344,651.00

Category	Selected
Rural	\$4,493,454.93
Urban	\$9,537,915.23
Combo Rural/Urban	\$3,544,533.55

Scoring and Selection Process

- Projects are ultimately selected based upon:
 1. Available funding
 2. Project scope in relation to observed crashes and/or reduction of crash risk
 3. Cost-effectiveness
 4. Financial goals
- Applications are scored by a committee
 - Includes representatives from MDOT, FHWA, the County Road Association (CRA), and Michigan Municipal League (MML)



HRRR Eligibility Criteria

[MDOT-NFC \(state.mi.us\)](http://state.mi.us)

NFC = Major Collector, Minor Collector, or Local

Classified as Rural per the area urban census boundary (AUCB).

If any portion of the roadway segment or intersection touches the urban boundary, the roadway is not eligible in the HRRR category.

At least one K/A crash within last 5 years

Most common point deductions:



Missing documents



Missing ADT info



Incorrect TOR / HSM

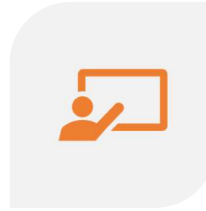


Including non-applicable UD-10s

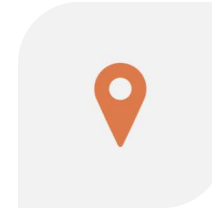


Including maintenance work (common with Guardrail applications)

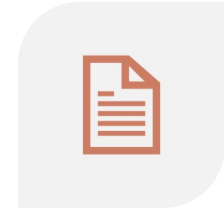
Required Application Documents (HRRR and HSIP)



PROJECT
NARRATIVE



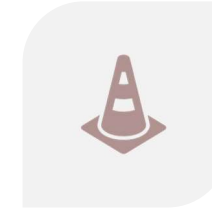
LOCATION MAP



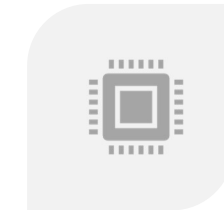
FORM 1627



COST
ESTIMATE



TIME OF RETURN
(TOR) AND/OR
HIGHWAY SAFETY
MANUAL (HSM)
ANALYSIS



UD-10S (CRASH
REPORTS)

Required Application Documents – Project Narrative





Required Application Documents – Location Map

Required Application Documents- Form 1627

Michigan Department
Of Transportation
1627 (05/16)

LOCAL AGENCY PROGRAMS SAFETY PROJECT SUBMITTAL FORM

[Clear Form](#)

FUNDING TEMPLATE:		FISCAL YEAR:	
LOCAL AGENCY		LOCAL AGENCY CONTACT	
PHONE NO.	FAX NO.	EMAIL ADDRESS	
ALTERNATIVE CONTACT		PHONE NO.	FAX NO.
EMAIL ADDRESS		HOUSE DISTRICT	SENATE DISTRICT
PROPOSED PROJECT LOCATION, LIMITS AND PROJECT DESCRIPTION			
PROPOSED COST	TIME OF RETURN (YEARS)	IMPROVEMENT CATEGORY (CHECK ALL CATEGORIES THAT APPLY) <input type="checkbox"/> Local Road Safety Plan Emphasis Area <input type="checkbox"/> Intersection Improvements <input type="checkbox"/> Roadway and Structure Improvements <input type="checkbox"/> Roadside Improvements <input type="checkbox"/> Pedestrian and Bicycle Improvements <input type="checkbox"/> Systemic (Explanation of how improvement will improve safety and reduce crashes is required below.) <input type="checkbox"/> Other _____	
BENEFIT TO COST RATIO	TOWNSHIP/CITY		
PLEASE LIST THE CRASH REDUCTION FACTORS USED:			
DOES A PROJECT IMPACT A SCHOOL OR OTHER SENSITIVE ORGANIZATION? PLEASE DESCRIBE:			
ROADWAY DATA		CROSS ROAD DATA (If an intersection improvement)	
PRIMARY ROUTE NAME		ROUTE NAME	
ADT		ADT	
PERCENT COMMERCIAL	*NO. OF CRASHES	PERCENT COMMERCIAL	*NO. OF CRASHES
*NO. OF FATAL CRASHES	*NO. OF "A" TYPE CRASHES	*NO. OF FATAL CRASHES	*NO. OF "A" TYPE CRASHES
*PERIOD OF CRASH DATA	FUNCTIONAL CLASSIFICATION	*PERIOD OF CRASH DATA	FUNCTIONAL CLASSIFICATION
*Please attach Crash Summary and UD-10's to your project submittal with the most recent 5 years of available data.			
EXPLANATION OF HOW THE PROPOSED IMPROVEMENT WILL IMPROVE SAFETY AND REDUCE CRASHES			

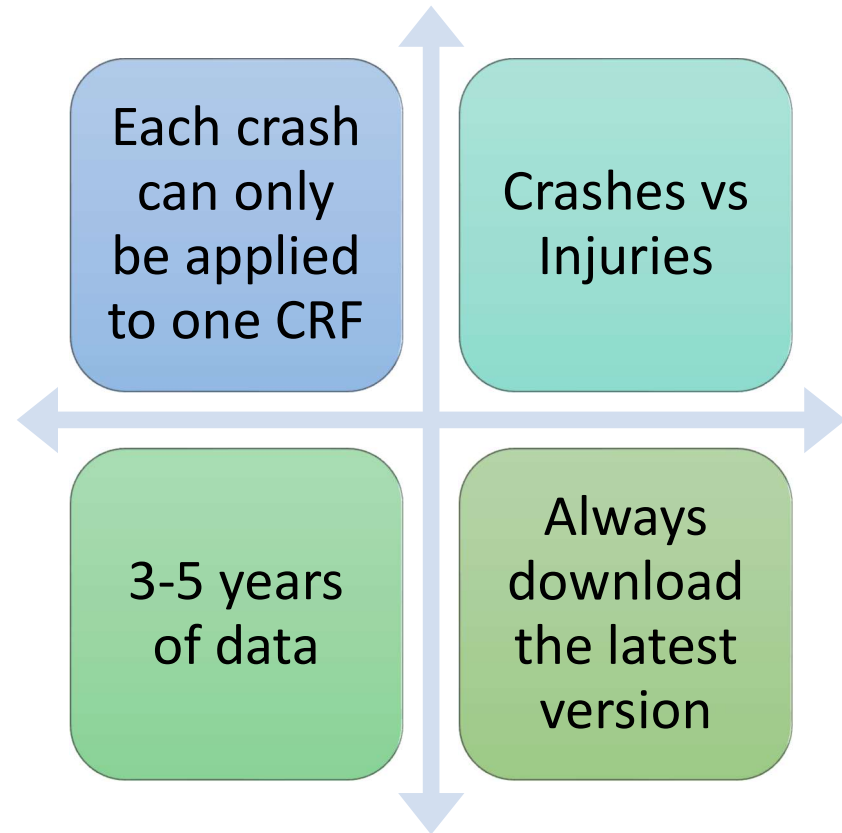
Required Application Documents

Cost Estimate



Required Application Documents

TOR and/or HSM Analysis






Required Application Documents

UD-10 Crash Reports

Streamlined Systemic Application

Only 1 Required Document

INSTRUCTIONS: Please follow the instructions to compete this form. Only enter information into the orange shaded cells.



STEP 1			
Name:			Date:
Local Agency:			
Contact Name:			Secondary Contact Name:
Phone Number:			Secondary Phone Number:
Email:			Secondary Email:
STEP 2			
Project Type:	Horizontal Curve Signing		
STEP 3			
Number of Curves:	5		
STEP 4			
Number	Roadway Name	Nearest Cross Road	PR
1			
2			
3			
4			
5			
Total Project Cost Estimate:			
STEP 5			
his form and, if possible, print it to a PDF. Email either the PDF (preferred) or Excel version of this form to MDOT-DesignLAP@michigan.gov. Attach a map of each location if P			
Save As PDF			

- Enter basic information
- Choose Project Type from Dropdown
- Enter number of curves (or miles, or intersections, or signal faces, etc)
- Enter locations or simply attach a map
- Enter total project cost

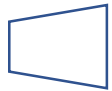
HRRR and HSIP items to keep in mind:



Any new Guardrail or Guardrail Endings must be MASH compliant (regardless of NFC).



Any NEW drive culverts must meet a minimum 1:6 slope from top of pipe to the driveway surface.



Any NEW culvert end treatments must meet Table 5.1 of the MDOT Drainage Manual.

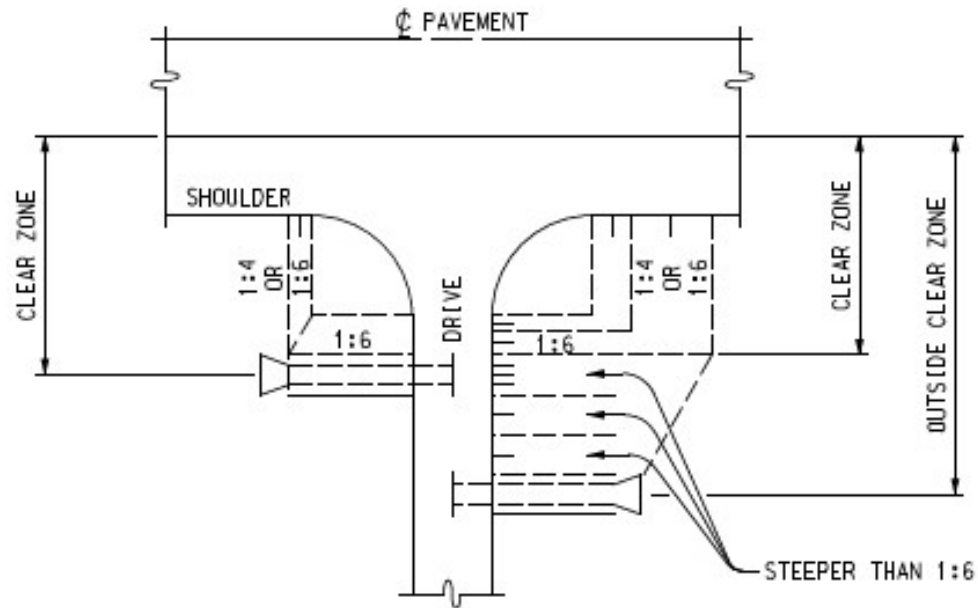




Adequate Drive Culvert Length

If you see home-made headwalls, it is a clue that the culvert is too short.

Adequate Drive Culvert Length



MDOT RDM 12.08.04

- Want 1:6 from top of pipe to top of drive
- Proper length leads to traversable slopes
- Helps prevent soil erosion
- Add end sections to culverts ≥ 18 inches

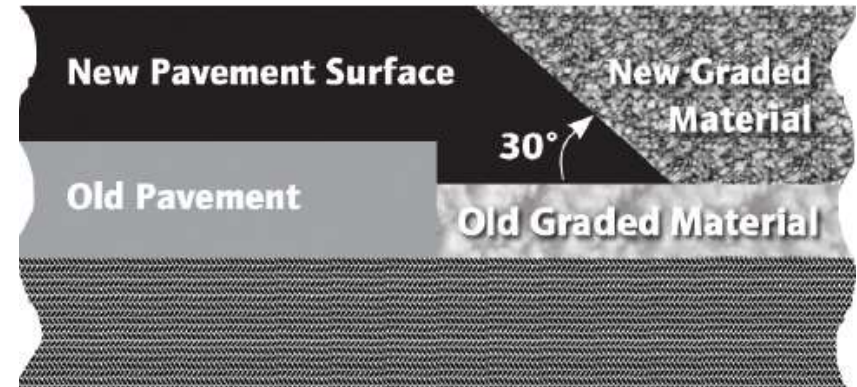


NEW REQUIREMENT – FY 2023

SAFETY EDGE

- Required for:
 - Projects involving shoulders that are newly constructed, resurfaced (1 ½" or greater) or widened without shoulder corrugations on roadways where the posted speed is 45 mph.
 - May be omitted in developed rural areas where driveway density exceeds 30 access points within ½ mile. The Safety Edge may also be omitted in locations where the shoulder is terminated by valley gutter or curb and gutter.

Safety Edge (per R-110 Series)



- Reduces concerns related to vertical pavement drop off
- Increase edge durability
- Minimal cost when added with a repaving project



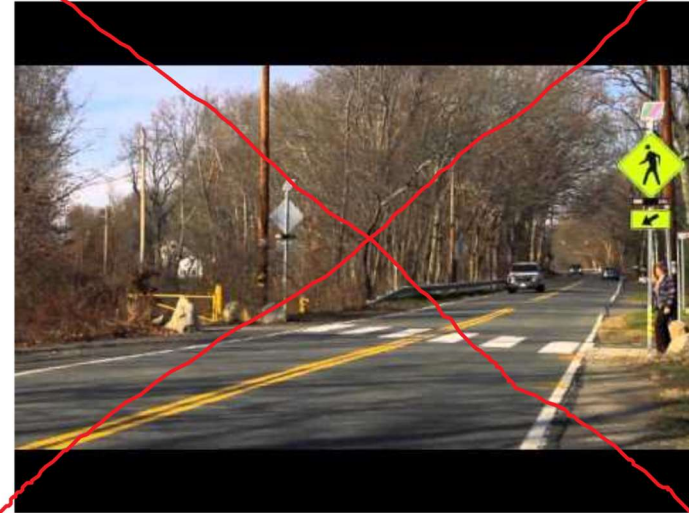
Commonly
forgotten items:

- Span Wire Tethers when installing signal backplates



Commonly forgotten items:

- RRFB on EACH side of roadway per direction per Interim Approval (IA-21).



Projects that score
well:

Data
Driven

Focused

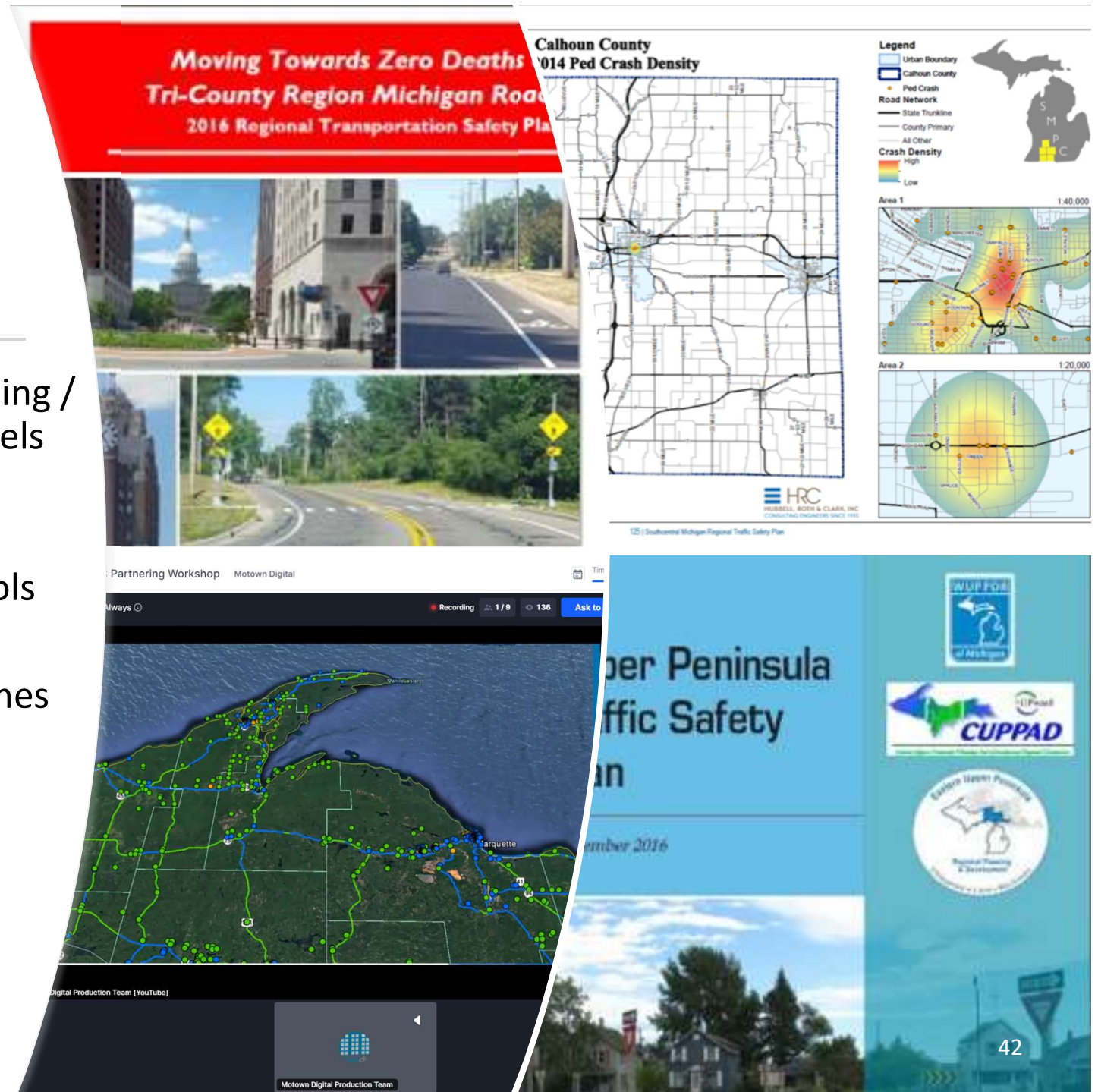
Focused / Targeted Projects



- Focus on the observed crash types and crash risks
- Don't ask for money for non-safety related items

Data Driven

- Network Screening / Risk Based Models
 - LRSP
 - Roadsoft
 - Ranking Tools
 - LOSS maps
 - Excess crashes maps
 - usRAP
 - etc.



Not Sure What Countermeasure to Choose?

Common Safety Countermeasures for Local Agencies



Roadside Design Improvements at Curves

- Increased clear zone:
 - ◊ A 16.7-foot clear zone (increased from 3 feet) can provide a 22 percent reduction in crashes.
 - ◊ A 30-foot clear zone can provide a 44 percent reduction in crashes.
- Roadside barriers:
 - ◊ Guardrail can be used when fixed objects cannot be removed from the clear zone or if space is limited.

Source: Federal Highway Administration (FHWA), <https://safety.fhwa.dot.gov/newsroom/newsroomdocs/clearzone/>



Benefits of Using Enhanced Delineation and Friction for Horizontal Curves in Michigan

- Chevron signs:
 - ◊ 20 percent reduction in crashes on curves.
- High-friction surface treatment:
 - ◊ 35 percent fewer wet roadway crashes.

Source: Michigan Department of Transportation (MDOT), documents.mdot.net/MDOT_Safety_Fact_Sheet_485542_7.pdf



Systemic Application of Multiple Low-Cost Countermeasures at Stop-Controlled Intersections

- Doubled-up, oversized signs (Stop Ahead and Stop).
- Reflective sheeting on sign posts.
- Clearing obstructions that limit sight distance.
- Double-arrow warning sign (for T-intersections).



Benefits of

- Quick Reference Guides for Local Agencies
- FHWA Proven Safety Countermeasures
[Proven Safety Countermeasures - Safety | Federal Highway Administration \(dot.gov\)](https://www.fhwa.dot.gov/safety/clearinghouse/safety_countermeasures.cfm)
- CMF Clearinghouse
[Crash Modification Factors Clearinghouse \(cmfclearinghouse.org\)](https://www.cmfclearinghouse.org/)

Have a location but can't decide on Fix?

- Apply for a Road Safety Audit
A formal safety performance examination of an existing or future road or intersection by an *independent, multi-disciplinary* RSA team.
- 80/20 Funding split



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Questions

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