

Highway Safety Stage 0s

Crash Course 101

presented to

Traffic Engineers Meeting

presented by

Adriane McRae, P.E.



A blurred background image of a road with yellow double lines, suggesting motion or speed. The top half of the image is a light blue sky, and the bottom half is a blurred road surface. A dark grey horizontal bar is overlaid across the middle of the image.

WHY DO WE REQUIRE A STAGE 0?

The logo for 'Destination Zero Deaths' features a stylized road graphic on the left. The text 'DESTINATION' is in black, 'ZERO' is in red with a red circle and slash over the 'O', and 'DEATHS' is in black. The road graphic is a black silhouette of a road with white dashed lines, set against a white background that looks like a torn piece of paper.

**DESTINATION
ZERO
DEATHS**

Highway Safety Stage 0 Purpose

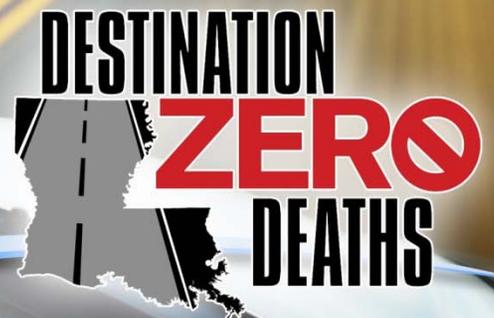
SCOPE → \$ BUDGET \$

GO / NO-GO

Where to GO?

Stage 1 → NEPA

WHO CAN SUBMIT?



WHO REVIEWS IT?



DESTINATION
ZERO
DEATHS

A blurred background image of a road with yellow double lines receding into the distance under a clear blue sky. The image has a motion blur effect, suggesting speed.

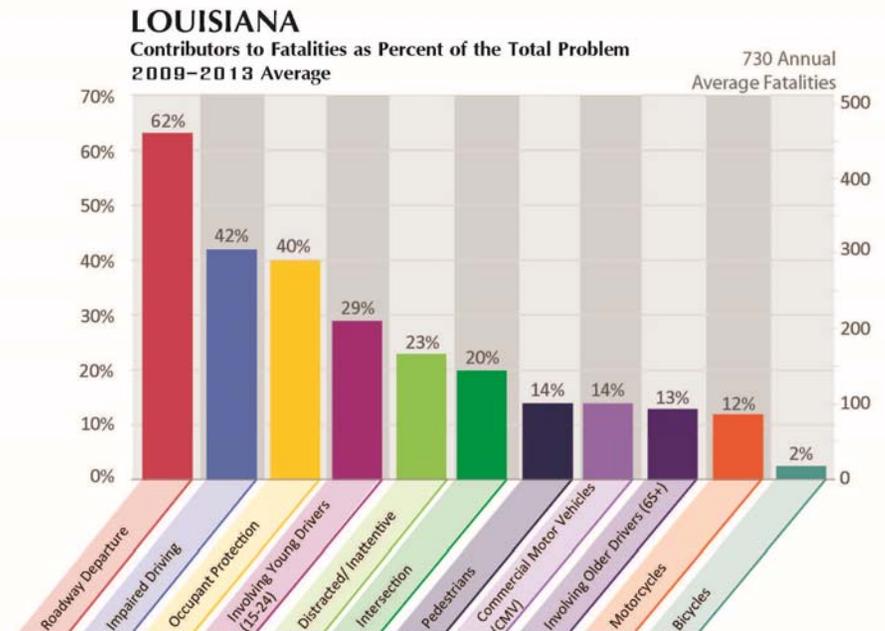
WHAT ARE WE LOOKING FOR?

A logo for 'Destination Zero Deaths'. It features a stylized road graphic on the left that leads into a silhouette of the state of Mississippi. To the right of the road, the words 'DESTINATION' and 'DEATHS' are stacked vertically in black, bold, sans-serif font. The word 'ZERO' is in a larger, red, bold, sans-serif font, with a red circle and a diagonal slash through it, resembling a prohibition sign.

**DESTINATION
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Highway Safety Stage 0 Evaluation

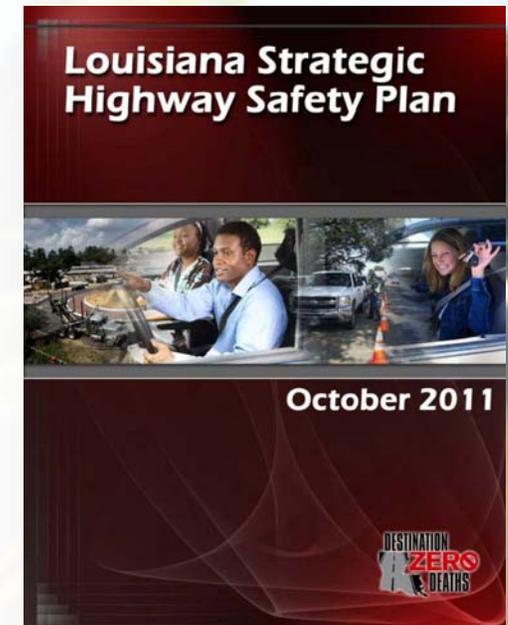
- Purpose & Need focused on **SAFETY**
- Aligned with **SHSP** Infrastructure Emphasis Area
 - » Roadway Departure
 - » Intersections
- Crash History
 - » High PSI? High Severity?
- Effectiveness of Countermeasure
 - » FHWA 9 Proven Countermeasures
 - » HSM & CMF Clearinghouse
 - » Geometrics, Access Management
- Bike / Pedestrians
- Local Support & Planning
- Impacts (R/W, utilities, other)
- Benefit Cost Ratio



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Purpose & Need

- Purpose = What is the reason for proposing this project?
 - » HINT: Highway safety funds should be focused on projects that have a high potential to **reduce the number of crashes and/or severity** of crashes and should be aligned with **SHSP** goals:
 - Roadway Departure & Intersections
- Need = What is the main problem(s) or issue(s)?
 - » HINT: Proposed safety projects should have a **SAFETY** issue
 - » Potential safety projects can be identified various ways:
 - 2013 High PSI (**NEW!**) – Intersection, Spot, and/or Segment
 - Investigating crash data based on local concerns
 - Regional Safety Coalition input
- Corridor vision & brief scope
- Additional goals or objectives
 - » Capacity, Operations, etc.



Purpose & Need

- CASE STUDY – Which one of these is a valid purpose and need for a safety project?

A.  *“The purpose of the project is to place a paved shoulder and rumble strips...The project will consist of adding paved shoulders onto the bayou side of LA123 and installing rumble strips.”*

Description of Recommended Alt.

B. *“To improve sight distance for vehicles entering LA123 from LA456. There is a need to clear and maintain additional right of way along LA123 to increase visibility of oncoming traffic.”*

Almost there...why is this a problem? What is our goal? Reduce crashes!

C. *“Based on the past 3 years of existing crash data, this corridor has experienced an unusually high crash rate compared to the statewide average for this type of roadway. The primary goal of the project is to reduce the number of roadway departure crashes within the study area along LA123 between LA1 and LA2 by adding low cost safety improvements along LA123 and modifying the median openings. A secondary goal is to improve capacity and operations as a result of minimizing conflict points.”*

YES!

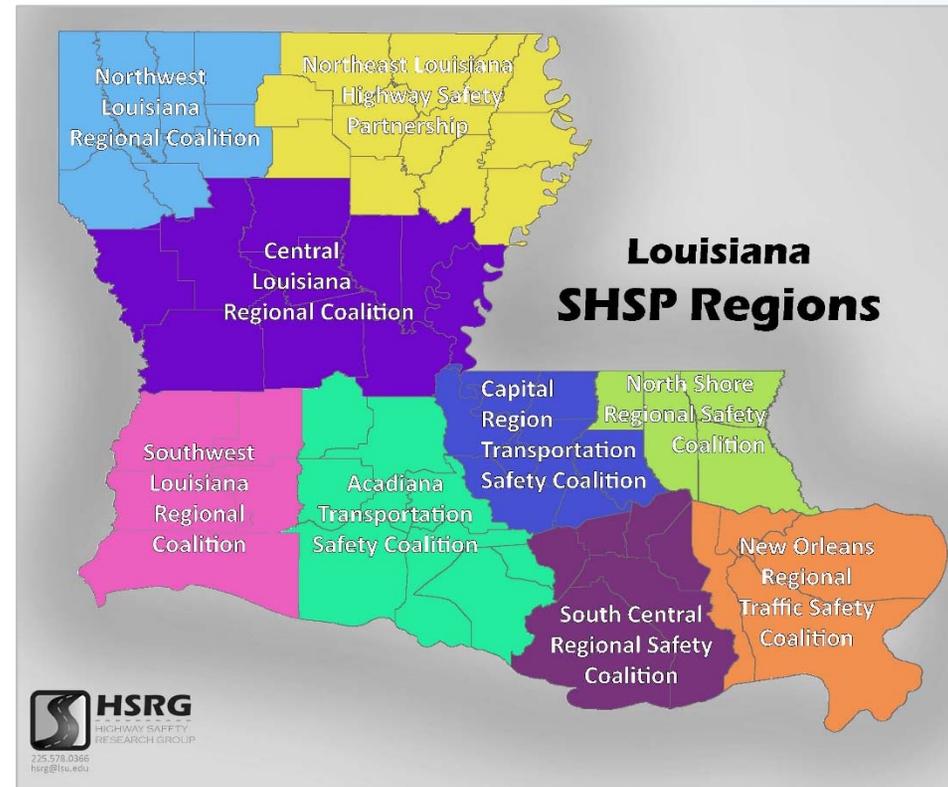


Agency Coordination

- US Army Corp of Engineers
- US Dept. of Interior
- US Coast Guard
- EPA/DEQ
- Tribal Organizations
- FHWA
- MPO
- City/Parish
- School Board
- Law Enforcement
- Other

Public Coordination

- **Regional Safety Coalition**
- **Public officials**
- **Business leaders**
- **Local residents**
- **Other stakeholders**



Range of Alternatives

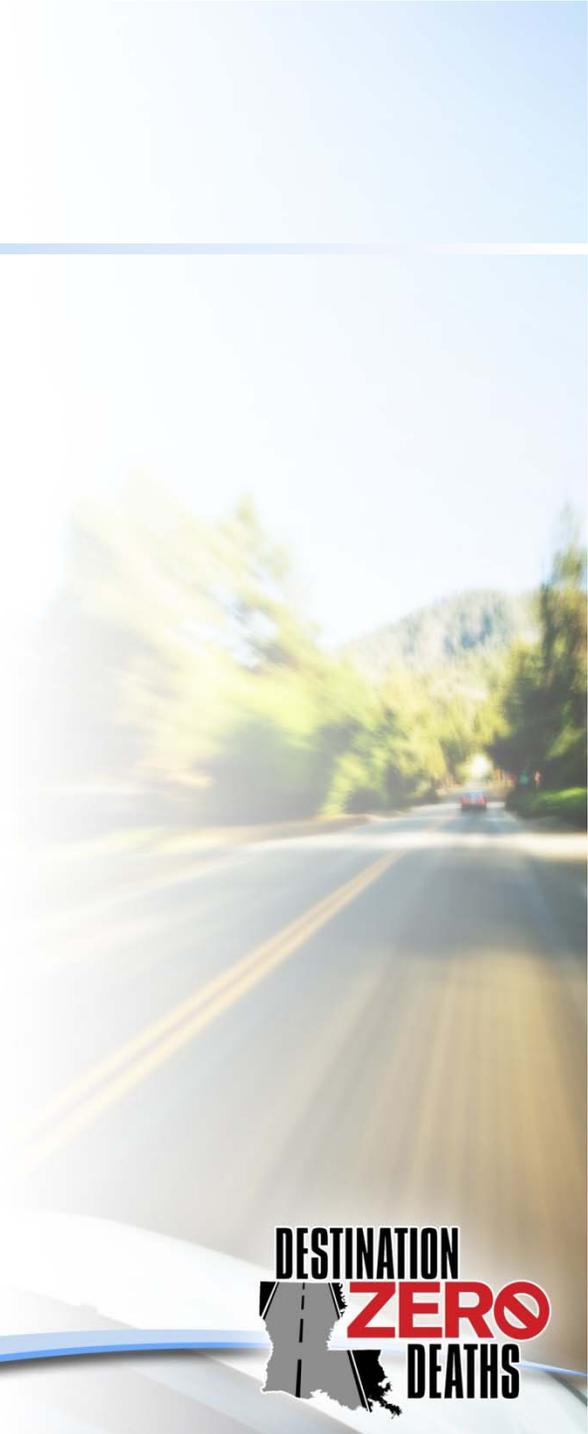
- DOCUMENT, DOCUMENT, DOCUMENT!
- No-Build - ALWAYS!
- Sky is the limit for alternatives
- Explain screening process for eliminating alternatives
- Schematic layout of alternative(s) with req'd ROW
- Traffic analysis / Roundabout Study (if applicable)
- Safety analysis
- TMP requirements
- Complete Streets Policy
- Context Sensitive Solutions (CSS)
- GOAL: Recommend Alternative(s) for Stage 1 – YES!

Safety Evaluation Tools

- Evaluate the issue
 - » Crash Data / Reports
 - » Crash DART
 - » Analyze trends, overrepresented crashes – **Triage Tool**
 - » Crash Magic
 - » Vision Zero Suite
 - » Road Safety Assessment

- Determine Countermeasures & Effectiveness
 - » Highway Safety Manual (HSM)
 - » CMF Clearinghouse
 - » Vision Zero Suite
 - » IHSDM
 - » Human Factors Guide
 - » NCHRP 500 Series

- Benefit Cost Ratios
 - » Benefit = \$\$ saved based on reduction in crashes over time



Cost Estimate

- Itemized by **control section**
- How is design going to be accomplished & managed?
 - » District, HQ, Consultant, etc.
 - » Topographic Survey available?
- Potential \$\$\$ risks!
 - » ROW
 - » Utilities
 - » Wetlands
 - » Haz Waste / Storage tanks
 - » Other unknowns?
- Contingency
- Proposed Funding
 - » Safety funds or combo? What is % breakdown?

Final Stage 0 Submittal

- **Other important info**
 - » High level schedule / letting date
 - » Project Manager
- **Provide point of contact**
- **Submittal Date!**
- **Email a PDF to Adriane.Mcrae@la.gov**
- **Review and provide input within 30 calendar days**

Approval Process

- **Recommendation:**
 - » Approve
 - » Hold / revisions if necessary
 - » Shelve
- **Proposer & DOTD Safety Administrator (D.Magri) notified**
- **DOTD Safety Administrator → 1st APPROVAL**
- **DOTD Project Selection Team → FINAL APPROVAL**



WHAT HAPPENS NEXT?



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Project Development

- **STIP**
- **SPN # Requested by PM**
- **Stage 1: NEPA (CE / EA / EIS)**
 - » **More detailed safety analysis may be warranted**
- **Stage 2**
 - » **Funding finalized**
- **Stage 3**
 - » **RSA**
 - » **TMP**
 - » **Updated Cost Estimate**
 - » **Permits**
 - » **ROW Plans**
 - » **Preliminary Plans**
 - » **Final Plans & Specifications**
 - » **Design exception**

WHAT HAPPENS IF SCOPE CHANGES?



**DESTINATION
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Stage 0 Updates

SCOPE → \$ BUDGET \$

- **Notify Highway Safety Program Manager (K.Courtade) & DOTD Safety Administrator (D.Magri)**
- **Documentation Required:**
 - » **Verify project purpose & need still safety focused**
 - » **Confirm still aligns with SHSP goals**
 - » **Update Cost Estimate**
 - » **Revise schedule/letting date**

Coming Soon!

- Stage 0 SOP
- Meetings with the Districts
- More user friendly PDF form

**LADOTD Highway Safety Improvement Program
Infrastructure Projects
Stage 0 Evaluation Form**

Project Title: Williams Blvd / LA 49 (US61 to 33rd St.)

Route: LA 49
Parish: Jefferson Parish
District: 2
Roadway Classification: UA-2
Control Section: 283-30
CSLM Begin: 1.4
CSLM End: 3.91
ADT: 18,000
Total Estimated Costs: \$10,000,000

Recommendation: Advance to Stage 1 X
 Hold
 Shelve

Include in HSIP (FY _____)
 Comments need to be addressed
 Not considered a priority safety project at this time

Submitted by: Nick Ferito
 Neel-Schaffer
 Date: 11/1/2014

Reviewed by: Adriane Michie
 DOTD Highway Safety
 225.390.1900
 8/26/2015

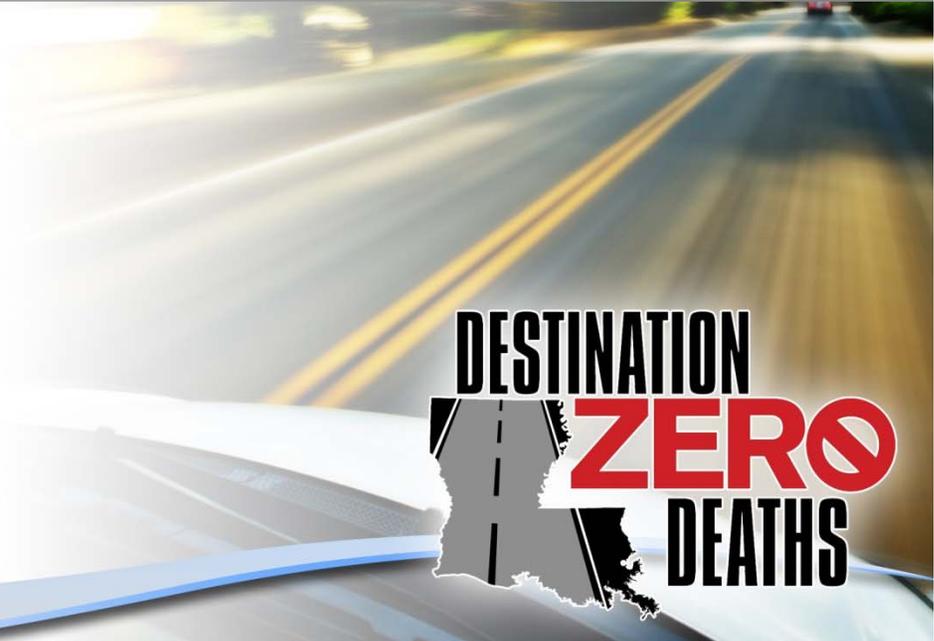
NOTE: The 2014 Feasibility Study and attachment studies can be accessed at the following location:
http://www.louisiana.gov/Portals/0/05DOTD/Infra/Built/Infra_NextSteps_Study_2014

EVALUATION FACTORS	Yes/No or N/A	Rating*	NOTES
Purpose & Need focused on Safety	Y	4	Existing crash rates for segments and intersection range from 2x to 12x the statewide average for similar facilities. Project includes intersection improvements aimed to reduce crash rates.
Aligned with SISP	Y	4	
CRASH RATES Roadway Department			
CRASH RATES Crash History			
High PSI Location	Y	4	LA 49 / Veterans Blvd intersection, Section between CSIM 3.75 - CSIM 3.93, and spot at CSIM 2.90 are on the 700+ High PSI list.
Over represented Crash Location	Y	2	Rear end and 45-degree same direction for all crashes (intersections and segments) are over represented slightly compared to the statewide averages.
High Relative Severity	N	0	Fatal and injury crashes are less than the Statewide average for similar facilities.
Level of Service of Safety (LOS) above 80%	N/A		
Potential for Crashes based on Existing Condition		0	
Roadway Geometric Issues		0	
Access Management Challenges	Y	4	Existing facility
Pedestrian & Bike Concerns	Y	4	No opposing paths and take into this corridor is a high priority for the city of Kenner
Other	N/A	-	
Alternative Analysis			
Safety Effectiveness (Does it recommended alt. address crash history and potential for crashes?)	Y	1	Based on the safety analysis, the number of crashes are expected to be reduced by 28 crashes/year for each proposed alternative. This is roughly a 6% reduction in total crashes that occur within this corridor.
MPO/Local support project	Y	4	Consistent with the 2050 Capital Plan concept for the corridor and is locally supported by the RJC and City of Kenner.
R/W Req'd	Y	2	Number of R/W acquisitions are minimal, however, this impacts costs due to the urban setting.
Utility Relocation(s) Req'd	Y	0	A high proportion of implementation costs (50%) are for utility relocations due to a concentrated urban corridor.
B/C Ratio > 2.0	N	0	B/C Ratios presented in Stage 0 are greater than 1.0, however, they were calculated using travel savings and with an average time benefit of 5 years. Based on the average yearly salary benefit costs prepared by Neel-Schaffer a safety B/C ratio was calculated assuming 10 years of service at 4% inflation rate. The B/C ratios are below 1.0. See attached.
Implementing FHWA Proven Countermeasures (Circle those that apply)	Y	4	
Safety Edge Restraints			
Crash Avoidance Management			
Runoffway Restraints/Barriers			
Long, Flexible strips & stripes 2 lane roads			
Future of Pedestrian & Bicyclist Infrastructure			
Medians & Median Crossing Minimize (Urban & Suburban areas)			
Peak-train Hybrid Section			
Road Diets (Roadway Reconfiguration)			
Design Exception/Waiver Req'd	Y	0	The partial median opening proposed do not meet the desired spacing requirements provided in TRM PL 2.1.4 (Median Openings on Divided Multi Lane Roadways).
Consistent with plans for other nearby projects	Y	4	Consistent with the 2050 Capital Plan concept for the corridor.

*NOTE: Ratings are based on safety trip outcomes of proposed project.
 4 = Most Desirable for HSP projects
 0 = Least Desirable for HSP projects



Q & A

A long-exposure photograph of a road at night, showing light trails from vehicles and streetlights, creating a sense of motion and depth.

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