Safety Analysis Tools Used for Coalitions and Districtwide Safety Investment Plans
3 Levels of Analysis

SHSP
Dashboards

LOSS
Dashboard

GIS Tool
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SHSP Dashboards
The **vision** of the Louisiana Strategic Highway Safety Plan (LA SHSP) is to reach Destination Zero Deaths on Louisiana roadways, with an intermediate goal of reducing fatalities/serious injuries by 50% in the year 2030.

The **mission** of the LA SHSP is to reduce the human and economic toll on Louisiana’s surface transportation system due to traffic crashes through widespread collaboration and an integrated 4E approach.

- Enforcement
- Education
- Engineering
- Empowerment
Louisiana Regional Safety Coalitions

9 Regional Safety Coalitions across the state

Involve Numerous Agencies

Address local needs and concerns

Facilitate the development of action plans

Use the procedures of the LASHSP to identify problems and produce countermeasures
To aid each Safety Coalition, HSRG maintains Tableau dashboards corresponding to 3 Levels:

- Level 1: Emphasis Area Selection
- Level 2: Target Setting
- Level 3: Problem Diagnosis (Drill-Down)

**Level 1**

What are our problem areas?

**Level 2**

How do we set a goal?

**Level 3**

Where and Who do we address?
http://datareports.lsu.edu/shsp.aspx
Level 1 – Identify Problem Areas (Emphasis Area Selection)

• Major Reasons for Injuries and Fatalities
• Target Area Trend
• Target Comparison/Ranking

http://datareports.lsu.edu/SHSPLevel1.aspx
Level 1 – Identify Problem Areas (Emphasis Area Selection)

Target Areas:
- Roadway Departures
- Alcohol Involved
- No Restraint
- Young Driver

Capital Region Fatal Crashes
- Capital Region Coalition Selected
- Fatal Selected
Level 2 – Setting Target Measures

- Determine Appropriate Expected Reductions
- Display Actual Counts
- Compare Actual Counts to:
  - Forecasted Counts
  - SHSP Goal
  - 5-Year Moving Average

http://datareports.lsu.edu/SHSPLevel2.aspx
Level 2 – Setting Target Measures

New Orleans Region
Intersection Fatality Crash Information

At/Below SHSP goal for intersection fatalities
Level 3 – Addressing Identified Problems

Dashboard Types
- Crash
- Person
- Driver (Vehicle)
- Bike/Pedestrian

Crash Characteristics
- Timeframe of Crashes (Year, Month, Day of Week, Hour Range)
- Infrastructure (Highway Type, Roadway Type)
- Demographic (Age Group, Gender, Race)
- Behavioral (Alcohol/Drug Related, Restraint Use)
- Manner of Collision
- Contributing Factors
Level 3 – Crash

Capital Region Fatal Alcohol Involved Crash Information
Level 3 – Bicycle/Pedestrian

Capital Region Bicycle Fatalities
Display Normalized Comparisons

• Vehicle Miles Traveled
• Licensed Drivers

http://datareports.lsu.edu/SHSPCrashNormalized.aspx
Benefits of SHSP Dashboards

Interactive

Easy to Access & Use

Promote Visual Data Insight Discovery

Aid Informed Decision-Making

http://datareports.lsu.edu/shsp.aspx
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SHSP Dashboards Demo
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LA DOTD Safety Network Screening Dashboard
Network Screening
Network Screening Options

• Crash Frequency
• Crash Rate
• EPDO
• Relative Severity Index
• Critical Rate
• Calibrated HSM Models (Safety Analyst)
• Regression Modeling (SPF/LOSS)
• Excess Proportion of Specific Crash Types
• Systemic Approach
LEVEL OF SERVICE OF SAFETY

LOSS 1
Low Potential for Safety Improvements

LOSS 2
Low to Moderate Potential for Safety Improvements

LOSS 3
Moderate to High Potential for Safety Improvements

LOSS 4
High Potential for Safety Improvements
Regression Modeling

Louisiana Specific SPF - Rural 2 Lane - Roadway Segments
Regression Modeling

Rural 2 Lane SPF – CURE plot

Predicted Number of Crashes/Year

Cumulative Residuals
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- **used in new CAT Scan**
- **not used, no SPF; not needed (too few crashes or sites)**
- **develop SPF**
- **explore the potential to develop norms - already have SPF**
- **explore the potential to develop SPF & norms**
# Network Screening Lists

## LADOTD List of Abnormal/High PSI Locations

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LOSS Index information for roadways in Acadia parish based on all crashes.
LOSS Index information for roadways in Acadia parish based on fatal, moderate, and severe crashes.
LOSS Index information for roadways in Acadia parish based on fatal, moderate, and severe crashes. Drill down to fatal/alcohol crashes.
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GIS Web Application (InDevelopment)
Components

Map
Filter Selection
Data Table and Export
Filter Query View

Benefits

Easy access to crash-specific data

Map visualization of crashes by severity level

Robust filtering system

Mapping crashes aids in data quality (i.e., identifying incorrect lat/long)
Filter Selection

- 2017 Fatal Crashes
- Lafayette Parish
- State Roads
- Intersection
Drill Down: Single Crash

Crash Information

Data Table with Export Option

Filter Query View
CAT Scan

- Diagnostic tool
- Requires crash data, highway class, AADT, and project information
- Quality Assurance capability
- Plots location on SPF/Indicates LOSS
- Conducts Pattern Recognition Analysis
Vision Zero Suite

- Plot to SPF
- Requires project information
- Plots location on SPF/Indicates LOSS
- Conducts Pattern Recognition Analysis
- Benefit-Cost Tool
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Thinking Ahead...

Advanced Network Screening
Diagnostic & Improvement

Economic Analysis

Safety Analyst®

SPF Tool - The Most Advanced, User-Friendly Tool Available

New MAP-21 Highway Safety Requirements with a Proven, SECURE
Integrated Solution that Complies with the Federal Highway Safety Manual

S
device
crashdata.lsu.edu
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