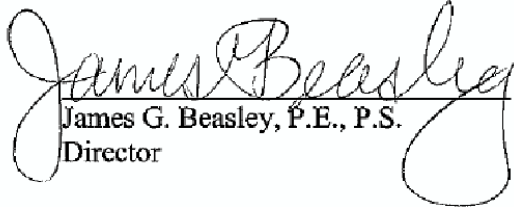


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Approved:



James G. Beasley, P.E., P.S.
Director

HIGHWAY SAFETY PROGRAM

POLICY STATEMENT:

This policy is a revision to the June 2000 policy that established the Highway Safety Program (HSP) within the Ohio Department of Transportation (ODOT). The Highway Safety Program is administered by ODOT and emphasizes safety in all phases of highway development by identifying and studying safety problems, developing solutions, establishing priorities, implementing countermeasures and evaluating improvements on any public roadway.

This policy establishes the procedures for project evaluation and statewide prioritization and development of the Highway Safety Program based on uniform and objective criteria to improve safety by reducing the severity and frequency of crashes.

AUTHORITY:

23 United States Code, section 148
23 United States Code, section 152
23 United States Code, section 409

REFERENCES:

AASHTO, Policy on Geometric Design of Highways and Streets
ODOT Project Development Process Manual
ODOT Design Manuals
ODOT Traffic Engineering Manual
Ohio Manual of Uniform Traffic Control Devices (OMUTCD)
Highway Safety Engineering Studies - FHWA - 3/91

SCOPE:

This policy is applicable to all ODOT Districts, Divisions, and Offices of the Department, MPOs and Local Public Agencies (LPAs) that are responsible for or otherwise involved in the analysis, selection, and development of countermeasures to improve identified safety deficiencies.

BACKGROUND:

ODOT has established the Highway Safety Program to create a process which emphasizes safety of the traveling public by analyzing the crash statistics on Ohio's state and local highway system. The Department utilizes the Highway Safety Program Prioritized Location Listing System to identify intersections and highway sections with a high frequency or rate of crashes. Each of the 12 District Safety Review Teams (DSRT) develops a Safety Annual Work Plan (SAWP). In addition, the Districts perform safety studies to determine the causes of crashes at locations. The DSRT strives to identify safety deficiencies and recommend countermeasures to reduce the severity, frequency and rate of crashes.

Safety projects are not limited to the state highway system. Proposed local projects on public roads are also evaluated and prioritized to improve safety through better operation of the existing highway facilities as outlined in the application and selection process.

Upon recommendation from the District Safety Review Teams, eligible projects are submitted to Central Office ODOT for funding consideration, and evaluated and prioritized based on uniform and objective criteria. Projects which contribute most to improving safety and reducing the severity, frequency and rate of crashes are considered for funding and further development. Twice a year, a listing of all newly approved safety projects is produced.

The Highway Safety Program historically receives approximately \$65 million annually. The actual level of funding designated for the program is determined by the Funds Management Committee and the Director, and is contingent on available state and federal revenues. The funding is used to implement countermeasures addressing identified crash problems on Ohio's highways to ensure safety is the primary consideration in the design, development, and operation of this program.

DEFINITIONS:

Countermeasure

A highway safety treatment or corrective activity designed to alleviate a safety problem or a potentially hazardous situation.

District Safety Review Team (DSRT)

The District Safety Review Team (DSRT) develops and adopts a Safety Annual Work Plan, reviews safety studies for locations included in the work plan, and recommends countermeasures. The DSRT shall have a minimum of the following ODOT multi-disciplinary representatives, including:

- Planning Administrator
- Production Administrator

- Highway Management Administrator
- Traffic Engineer

The DSRT should also consult with the District Real Estate Administrator and Environmental Coordinator to ensure that safety projects are properly scoped to address real estate and environmental issues that can significantly increase costs and cause delays.

The District Deputy Director shall appoint one ODOT DSRT member as chairperson to coordinate and steer the team's efforts. Each District is also required to invite the Highway Safety Program Manager and a representative from Federal Highway Administration. The local Ohio State Highway Patrol, local law enforcement and Metropolitan Planning Organization should also be invited. LPA representatives shall be invited when the DSRT is reviewing an LPA safety study. Only ODOT representatives may be voting members.

Economic Analysis

This analysis will be used to determine a project's costs and benefits for the purpose of assisting in determining the project's eligibility for funding and for prioritizing multiple projects/alternatives.

Highway Safety Program Prioritized Location Listing

The Office of Systems Planning and Program Management will annually prepare and distribute to the Districts a prioritized listing of locations on the state highway system for the Highway Safety Program. The prioritized listing will utilize criteria established by ODOT and crash data provided by the Ohio Department of Public Safety.

Local Public Agency (LPA)

LPA's can include any other state agency, local political subdivision, board, commission, or other governmental entity identified under paragraph C of Section 5501.03 of the Ohio Revised Code as being eligible for assuming administrative responsibilities for ODOT improvement projects.

Safety Annual Work Plan (SAWP)

The SAWP is a listing published by ODOT which consists of:

- Top 250 of the HSP Prioritized Locations (200 Non-Freeway + 50 Freeway Locations)
- Hot Spot Locations
- Congestion Locations, and
- Corridor Safety Program

The Districts may also include other locations they deem appropriate to include in their review of the District's highway safety needs. Local priority projects submitted by an LPA and approved by the DSRT must also be incorporated into the District Safety Annual Work Plan.

Safety Problem

A safety problem occurs when there is a potential failure in the roadway-driver-vehicle system evidenced by abnormal crash experiences, trends or patterns.

Safety Study

A Safety Study involves analysis of roadway, traffic and crash-related data to determine the probable cause of an identified crash pattern at an intersection or highway section. The safety study also provides alternative countermeasures meant to mitigate predominate crash pattern(s).

Safety Program Committee

A multi-disciplinary committee representing the Safety Program, Roadway Engineering and Office of Traffic that reviews all safety project applications and documentation to select projects which will be funded through the Highway Safety Program.

Safety Program Manager

The individual responsible for administering the statewide policies and program selection criteria for the purpose of developing a multi-year program of priority projects. The program manager ensures the project delivery adheres to the schedule and maintains a fiscally balanced program.

PROCEDURE STATEMENT:

I. Analysis

A. District Safety Review Team

1. Each District Deputy Director (DDD) shall appoint a District Safety Review Team (DSRT) based on this policy.
2. Within 60 days of the availability of the annual Highway Safety Program prioritized Location Listing, the DSRT shall compile and approve the District's Safety Annual Work Plan (SAWP) consisting of all the top 250 HSP Prioritized Locations, Hot Spot, Congestion, Corridor Safety Program, and other locations deemed appropriate by the District. Local priority projects submitted by a LPA and approved by the DSRT for project application processing must be incorporated into the SAWP. Copies of the SAWP will be provided electronically

to the Office of Systems Planning and Program Management and to the Safety Program Manager.

3. The DSRT may request that the Office of Systems Planning and Program Management revise the SAWP. Upon revision, the updated plan will be made available electronically.
4. At a minimum, the SAWP should be reviewed and updated on a quarterly basis by the DSRT.
5. Each District is to assign first priority for analysis to locations found on the Highway Safety Program Prioritized Location Listing with a ranking in the top 250.
6. The DSRT reviews the safety study of the prioritized locations. The DSRT shall also provide a copy of the safety study and request comments from local law enforcement and MPO when applicable.
7. The DSRT shall provide a copy (electronic or hard copy) of the completed safety study to the Office of Systems Planning and Program Management.
8. The DSRT Chairperson shall enter all activities, recommendations and implementation status (including dates) for locations on the SAWP to the statewide database.
9. By July 31 of each year, the Office of Systems Planning and Program Management will use the statewide database to generate a year-end summary of each District SAWP indicating the activity, recommendations and implementation status of the locations listed.

B. Local Highway Safety Project Analysis

1. Each DSRT shall, before considering an LPA safety analysis report with the intent of applying for HSP funding for construction, *encourage* the LPA to submit a project application which includes a prioritized list of the high crash locations within the LPA's jurisdiction. This list should include the number and type of crashes and severity breakdown (Property Damage Only, Injury, Fatal) at each location and should be prioritized based upon, but not limited to, frequency, rate or severity as determined by the LPA. A copy of the safety study or crash analysis shall be prepared and submitted by the LPA to the District DSRT.

2. LPA locations with low historical crash statistics (see below) may be considered on a case-by-case basis for HSP funding:
 - Have fewer than 10 crashes in the most recent and consecutive three-year period and,
 - Have an annual crash rate less than 1.0 accident per million vehicle miles (acc/MVM) for sections or accidents per million entering vehicles (acc/MEV) for intersections
3. Approval by the DSRT is required to incorporate the LPA project into the SAWP and to submit the project for the safety project application process.

II. Safety Project Application Process

- A. In order for sponsors to apply for safety funding, a proposed project shall meet the following criteria
 1. For state projects the location is on a state, U.S. or interstate highway or for local projects, the location is on a public street or highway system.
 2. Projects which have fewer than 10 crashes in the most recent and consecutive three-year period and an annual rate less than 1.0 accidents per million vehicle miles (acc/MVM) for sections or accidents per million entering vehicles (acc/MEV) for intersections may be considered on a case-by-case basis for HSP funding.
- B. The decision to apply for Safety Program funding is determined by the DSRT or LPA once a crash analysis or safety study is completed and a recommendation of the proposed countermeasures is developed. At that time, the sponsoring agency shall complete the Safety Project Application with all required documentation and submit the application to the District office for processing. LPAs may request assistance from the Safety Program in conducting crash analysis, safety studies or preliminary engineering.
- C. Local agencies submitting projects for safety funds should provide the necessary information to the DSRT in advance of the application deadline. Local agencies should contact the DSRT to establish sufficient time for reviewing and processing the information prior to the deadline.
- D. The countermeasures specified for a given project shall be recommended and approved by the DSRT.
- E. The District shall submit the safety project application to the Safety Program Manager for review and ranking by the Safety Program Committee. The DSRT

submits the application on behalf of the LPA for proposed local highway safety projects. Affirmative signatures from a majority of the DSRT members are required with the safety project application submittal.

- F. The Safety Program Manager will designate April 30 and September 30 as the deadlines for project application submittals to Central Office.

III. Safety Selection Criteria and Scoring

After the deadlines for project application submittals, the below criteria (A-G) will be used to rank all proposed projects. The selection criteria will be based on the data for the most recent consecutive three-year period in the completed safety study or crash analysis.

Each of the below index and scoring scales can be found on the following ODOT maintained web site in their most current format:

<http://www.dot.state.oh.us/planning/Safety/SafetyPrograms.htm>

A. Crash Frequency/Density

Crash Frequency - Number of crashes occurring at an intersection

Density - Number of crashes per mile occurring along a section of highway (minimum length of .4 mile)

B. Crash Rate

Intersection - Number of intersection and related crashes per million vehicles

Section- Number of section (minimum length of .4 mile) crashes per million vehicle miles

C. Severity Index (RSI)

The Relative Severity Index (RSI) represents the relative cost to society of a specific type of crash (head on, rear end, angle accident, etc.). The RSI is the sum of the relative costs per crash divided by the total number of crashes. This threshold is given the highest weighting because it best represents the potential severity of crashes occurring at a site.

D. Equivalent Property Damage Only Rate (EPDO Rate)

The EPDO value is calculated by weighting crashes from lowest to highest as follows:

- 1) Number of crashes which were property damage
- 2) Number of crashes with injury, and
- 3) Number of crashes with a fatal

E. Percent Trucks

Truck Average Daily Traffic (ADT) divided by Total ADT

F. Rate of Return

The rate of return is the anticipated return on the investment. The investment is the cost of the improvement plus cost of maintenance for the life of the improvement. The return is the savings in crash costs, property damage, injuries, and fatalities.

G. High-Risk Rural Roads

Special consideration will also be given to projects that qualify for the High Risk Rural Roads Program. This is a federally designated program that sets aside annual funding for construction and operational improvements on roadways functionally classified as a **rural major** or **minor collector** or a **rural local road**. These roads must have a fatal and incapacitating injury crash rate higher than the statewide average.

IV. Project Approval

- A. The Safety Program Committee will evaluate the applications and project scoring to establish and publish a list of approved Safety projects for funding from the safety program.
- B. All funded projects shall be programmed in Ellis by the Districts within 30 days of project approval and included in the next Statewide Transportation Improvement Program amendment.
- C. At least once per quarter, the Safety Program Manager will update the approved listing of safety projects for revisions to cost and schedules and provide this information electronically. This list will assist Central Office and the Districts in planning future safety projects and will aid in evaluating future safety funding needs.

D. Projects not selected for funding may be resubmitted during the following application cycle or addressed from alternate funding sources. Project re-submittals shall use current traffic data and study analyses and will be evaluated as a new project submission.

V. Improvement Evaluation

A. The Office of Systems Planning and Program Management will conduct an evaluation of the safety improvements after implementation of the countermeasures.

B. The evaluations will compare crashes after implementation to crashes before implementation of the countermeasures. As a result of the evaluation, information pertinent to determining the effectiveness of the countermeasure will be assessed and the results published by the Office of Systems Planning and Program Management.

TRAINING:

The following training opportunities are helpful in implementing the policy.

- Familiarity with the legal and procedural requirements relating to traffic engineering and highway safety.
- Ability to utilize computer programs applicable to the analysis of the safety studies.
- Ability to effectively use equipment and accepted procedures to conduct safety studies.

Fiscal Analysis:

Implementation of this policy will have no additional fiscal impact to ODOT.