



Road Improvement Demonstration Program

**Robert G. Lariviere, P.E. – AAA Michigan
Traffic Engineer**

What is the AAA Road Improvement Demonstration Program?

A public/private partnership designed to enhance traffic safety by reducing the frequency and severity of crashes at high risk urban intersections.



The Problem

- 8,500 people killed and 1 million injured nation wide in intersection crashes.
- 50% of all crashes in urban areas occur at intersections.
- Societal costs for intersection crashes are approximately \$40 billion.



Program Goals

- Reduce the frequency and severity of crashes (and claims) at high-risk urban intersections.
- Proposed changes must be low cost / cost effective
- Identify possible sites, conduct safety audits and re-engineer high-risk intersections
- Achieve a minimum 2:1 benefit-cost ratio
- Encourage a proactive approach to traffic safety

- Launch Date: 1996



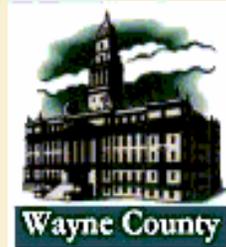
Program History

- 1996 – City of Detroit / AAA Michigan Agreement
- 1997 – First three pilot project completed in Detroit
- 1998 to 2003 – Almost 400 projects have been planned and/or implemented in Detroit, Grand Rapids, Port Huron & Bay City
- 2004 – Initiated the AAA Wisconsin RIDP
- 2006 – Release of the RIDP Toolkit

The Partnership



City of Detroit



Wayne County



CITY OF
GRAND
RAPIDS
MICHIGAN



WAYNE STATE
UNIVERSITY



FHWA



MARQUETTE
UNIVERSITY

**Southeast
Wisconsin
Regional
Planning
Commission**



Bay County, MI
Port Huron, MI
Wauwatosa, WI

Bay City, MI
Greenfield, WI
Oak Creek, WI

St. Clair County, MI
Dane County, WI
West Allis, WI

Madison, WI
Fitchburg, WI
Franklin, WI

PROGRAM ACCOMPLISHMENTS

- 450 Locations studied in Michigan and Wisconsin
- Improvements made at 351 intersections
- 15 year societal savings projected at \$100 million in reduced medical care, emergency services, property damage and productivity losses due to fewer crashes at improved intersections



How the Program Works

Identify Target Intersections

The image shows a Pennsylvania State Police Crash Report form (UD-10). The form is divided into several sections:

- Header:** Authority (1949 PA 300, Sec. 237.622), Compliance, Penalty, and Date (UD-10 (1999)).
- Crash Information:** Date, Time, Location (County, City, Township, Road Name, Intersecting Road), and Crash Type.
- Vehicle Information:** Details for the vehicle involved, including make, model, year, color, and damage location.
- Driver Information:** Driver's name, address, date of birth, sex, and license information.
- Insurance:** Insurance carrier, policy number, and agent information.
- Special Checks:** A grid for recording various conditions like weather, road conditions, and vehicle status.

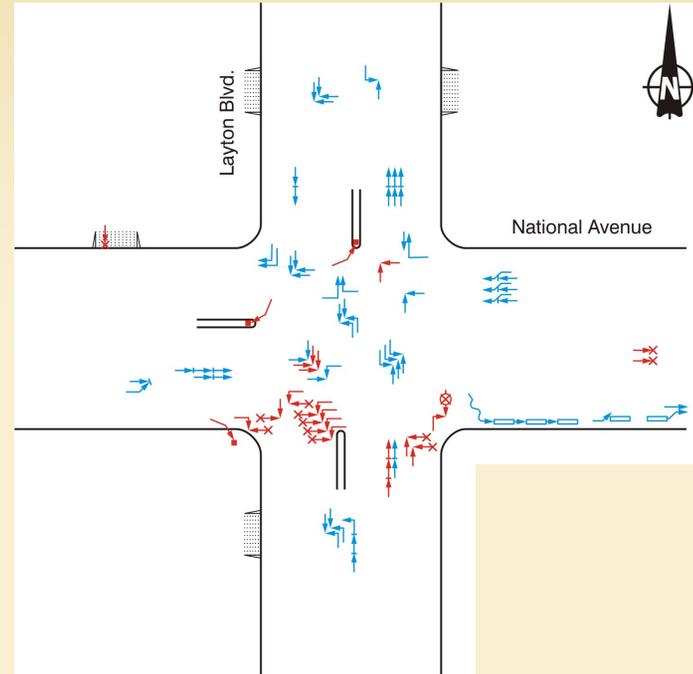
- Police Crash Reports
- AAA Claims Data
- Most Severe Intersections



How the Program Works

Identify Target Intersections

Conduct Safety Audit



- Collision History
- Operational Analysis
- Geometric Review
- Conflict Studies
- Human Factors Review
- Suggest Countermeasures



How the Program Works

Identify Target Intersections

Conduct Safety Audit

Conduct a Benefit Cost Analysis
Is AAA Investment beneficial?



Minimum of 2:1
Benefit Cost Ratio
over 2 Years



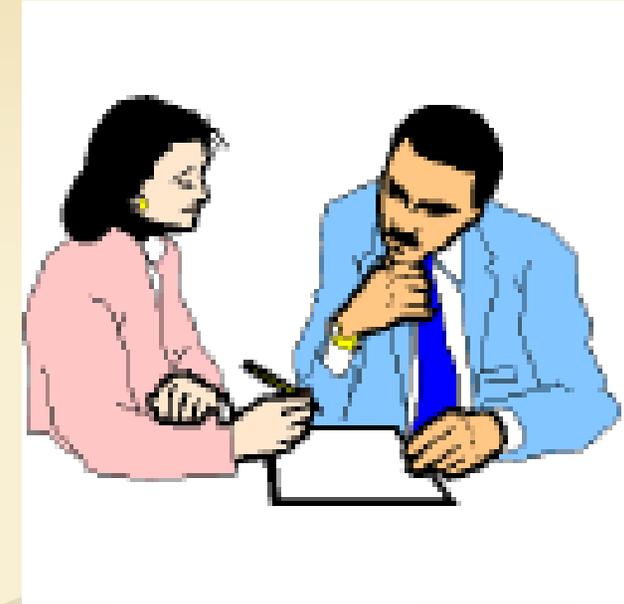
How the Program Works

Identify Target Intersections

Conduct Safety Audit

Conduct a Benefit Cost Analysis
Is AAA Investment beneficial?

Develop Project Funding Strategy



Develop cost sharing agreements with the project partners.



How the Program Works

Identify Target Intersections

Conduct Safety Audit

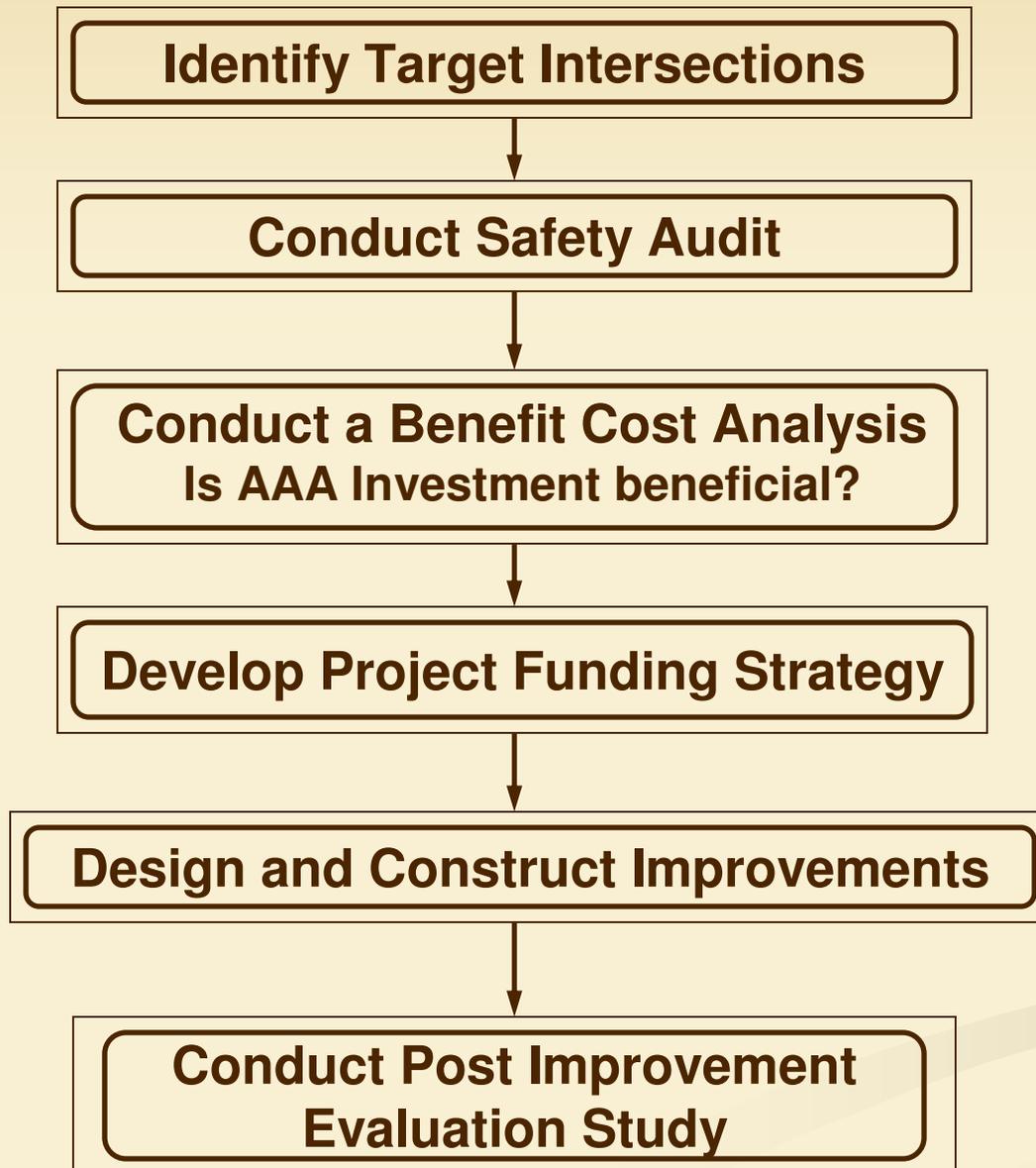
Conduct a Benefit Cost Analysis
Is AAA Investment beneficial?

Develop Project Funding Strategy

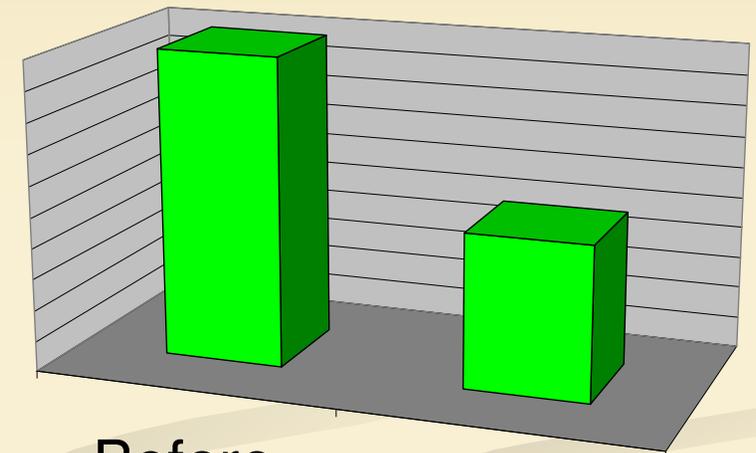
Design and Construct Improvements



How the Program Works



Collision History



Before

After

Evaluate safety and economic benefits of the improvements



Seven Mile & Dequindre in Detroit Before Improvements

Left-Turn
Prohibition

Smaller 8"
diameter
signal
lenses

NO dedicated
left-turn lane



Seven Mile & Dequindre in Detroit After Improvements

Replaced the smaller signal lenses with larger and brighter 12" diameter lenses

Added a protected left-turn green arrow

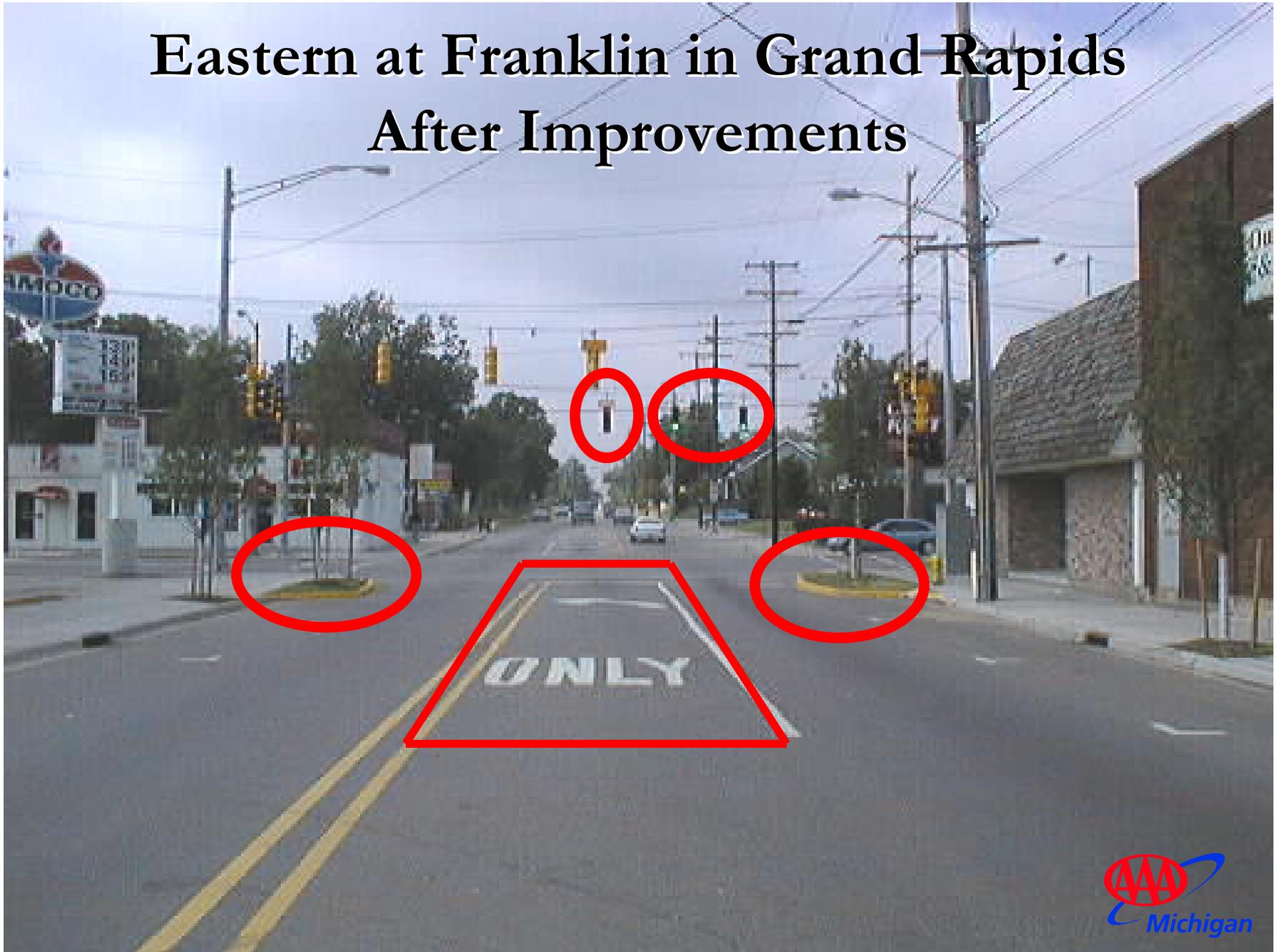
New dedicated left-turn lane



Eastern at Franklin in Grand Rapids Before Improvements

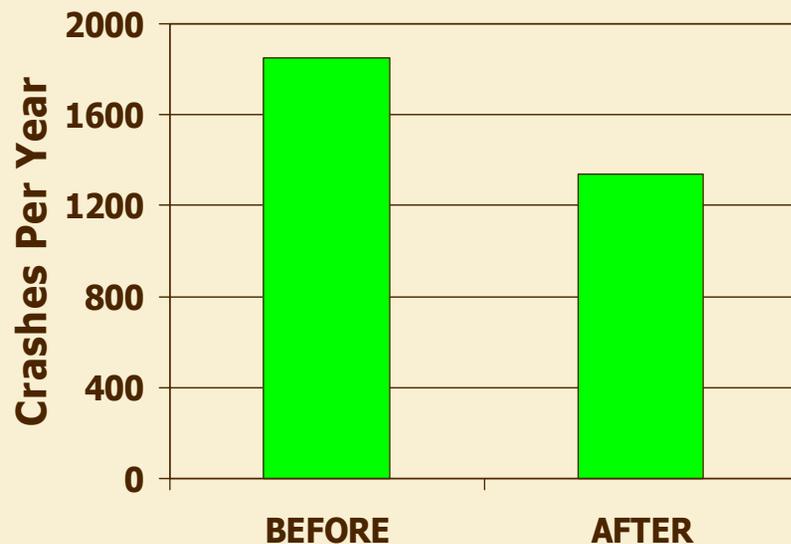


Eastern at Franklin in Grand Rapids After Improvements

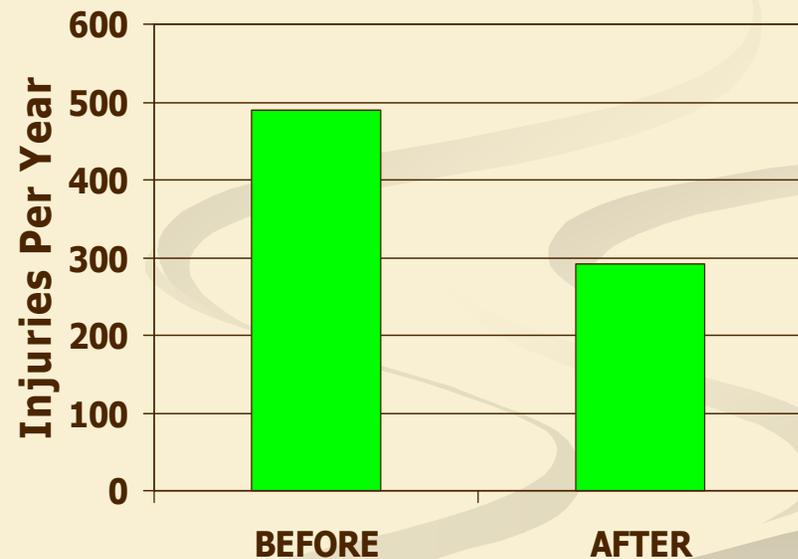


Trends from 84 RIDP Intersections in Detroit & Grand Rapids

More than **25%**
Reduction in
Total Crashes



More than **40%**
Reduction in
Total Injuries



- Data includes a minimum of 24 months "before" and 12 months of "after" data
- Data Source: UD-10 Crash Reports provided by MI State Police, Detroit Police Dept. & GR Police Dept.



Impact on Senior Drivers Detroit, MI

Total Crash Rate Reductions by Age

| | |
|--------------|------------|
| 25-64 | 17% |
| 65+ | 31% |

Injury Crash Rate Reductions by Age

| | |
|--------------|------------|
| 25-64 | 4% |
| 65+ | 35% |

- Crash data reflects 30 intersections on Woodward Avenue in Detroit, MI.
- Total crash rate and injury crash rate reductions are stated as crashes per registered driver.



RIDP Toolkit

- Designed for municipal leaders and planners
- Used to identify intersection safety problems
- Provides countermeasures that will positively impact these safety problems
- A template for action to implement needed changes in local jurisdictions
- Enact tested real-world solutions



Program Awards

- 1998 Federal Highway Administrator's Safety Award
- 1998 National Association of Governors Highway Safety Representatives Safety Award
- 1999 Traffic Safety Association of Michigan Recognition Award
- 2001 SEMCOG/Metropolitan Affairs Coalition Joint Public Service Award
- 2003 AAA Public Affairs National Recognition
- 2004 Council of State Governments
- 2005 Michigan Governor's Traffic Safety Award



Questions?

