



National Rural Summit on **TRAFFIC SAFETY CULTURE**

The Path to a Safer Traffic-Safety Culture

Brent O. Bair

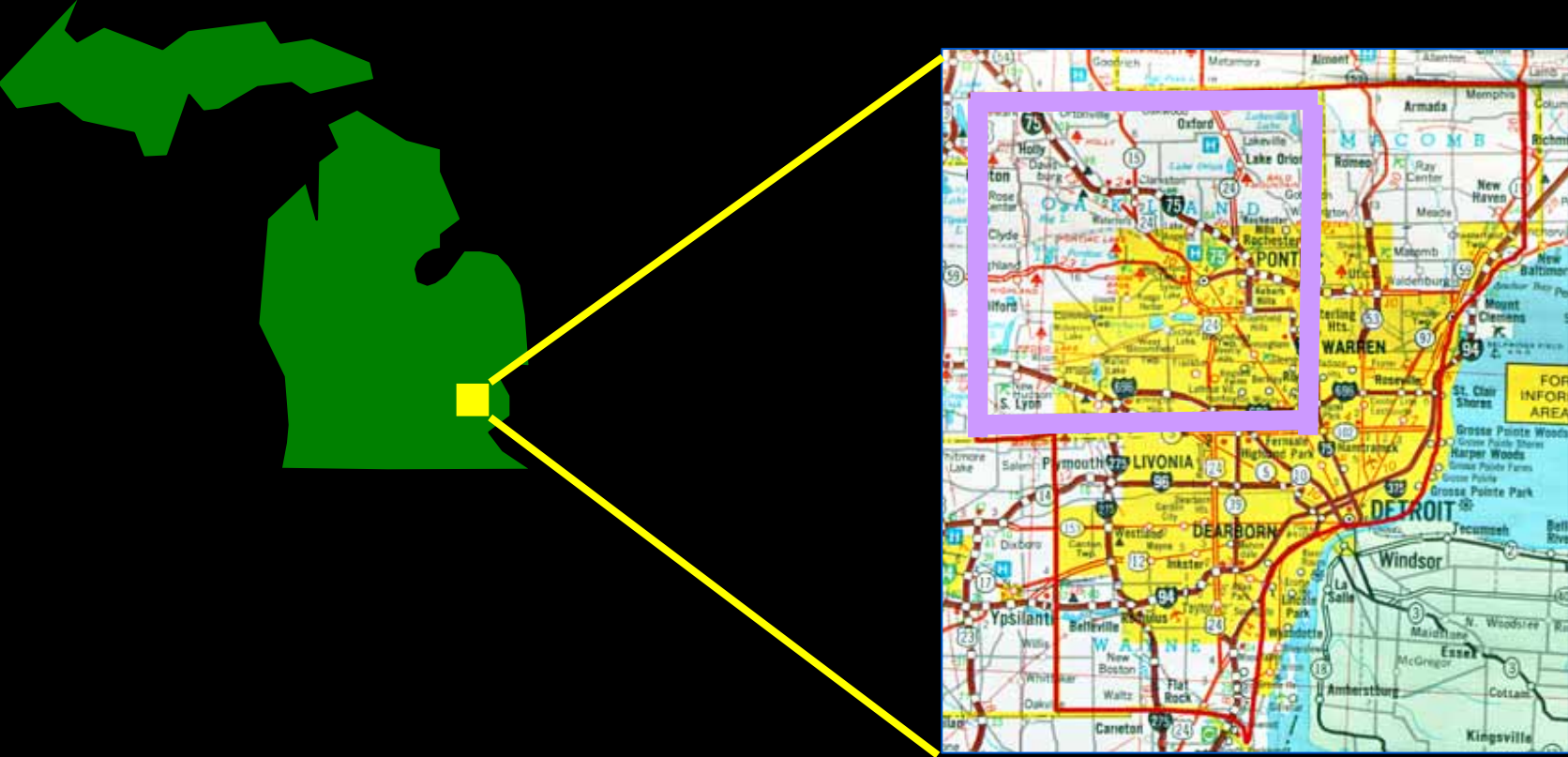
Managing Director

Road Commission

for Oakland County (Michigan)



Geographic Perspective



- Michigan is the only state with county road commissions separate from county general government.
- Largest county road system in Mich. (2,700- plus miles).

Oakland County

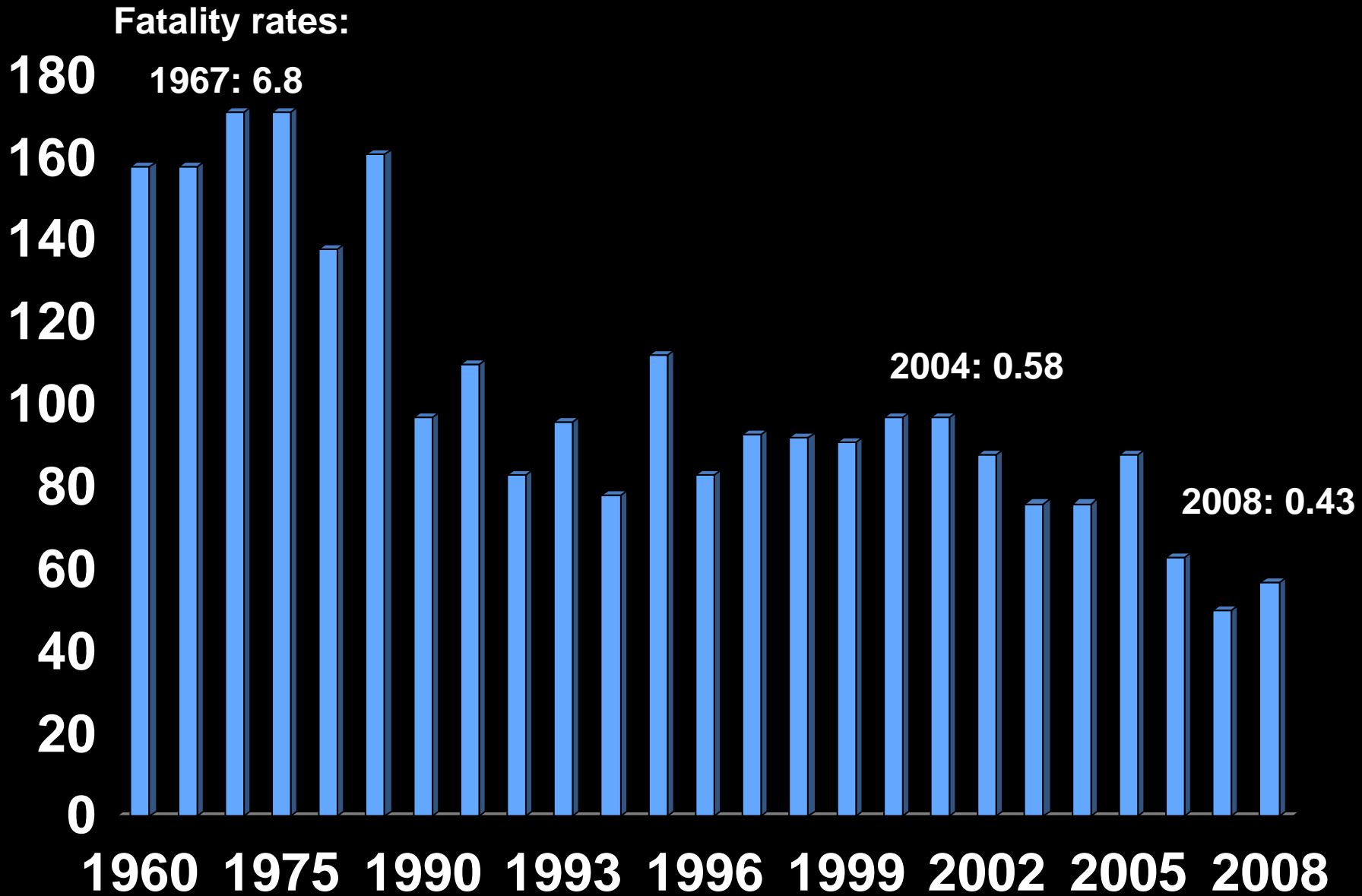
- 910 square miles.
- 1.2+ million people.
- Ranging from urban to rural.
- 4th wealthiest US county with more than 1 mil. people in per capita income?
- GDP larger than 19 US states?
- Worst road congestion in Michigan.



What does RCOC have to do with “safety culture?”

- Oakland County’s roads are among the safest in the world for a community our size.
- This was no “accident.”
- It did not happen over night!

Oakland County Total Traffic Fatalities

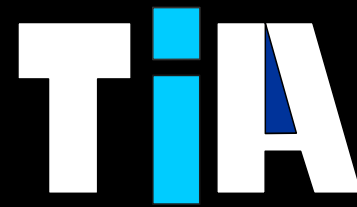


What brought this about?

- Creation of the Traffic Improvement Assoc. of Oakland County (TIA) - 1967
- Designation of “safety” as the top priority for RCOC - 1978



What is TIA?



- Non-profit agency dedicated to:
 - Reducing human & economic loss caused by traffic crashes, and
 - Improving mobility.
- Organized in 1967 by top community, academic & business leaders in Oakland County...
 - ...to address fatality rate higher than state or nation.
- Founders: MSU-Oakland Univ., “Big 3”, banks, other businesses & citizens.

TIA Continuing Membership through the years

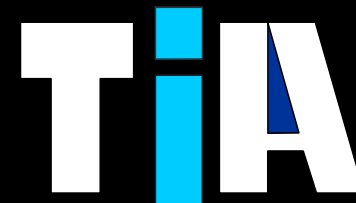


- Automotive company representatives
- Local public officials
- Business leaders

Note: From the start, RCOC has been:

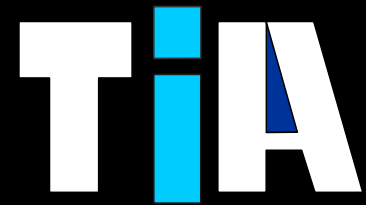
- TIA’s biggest financial supporter and
- The most frequent user of TIA data.

TIA Services



- **Engineering:**
 - Crash data analysis
 - Traffic evaluations
 - School evaluations
- **Education:**
 - Numerous programs to support traffic safety, including:
 - “Early Bird” informational meetings (avg. 70-80 attendees, primarily police officers)
 - Marketing materials for safety-belt and alcohol programs
 - Educational programs to help improve traffic-crash-data collection by law enforcement
 - Extensive elderly mobility program (baby boomers)

TIA Services continued



- **Enforcement:**

- Law enforcement has always been a key partner: Crash data used for selective enforcement.
- To ensure uniformity in enforcement, TIA developed the nation's first model set of police traffic policies & procedures.
- TIA's Alcohol Enforcement Teams project is the longest-standing NHTSA grant in operation in the US.

TIA Data Analysis



- **Early Data:**
 - Intersection & link rankings by frequency & severity replaces pins on maps.
- **Today's Data & Analysis Tools:**
 - Compiled from crash reports submitted by police agencies statewide.
 - Includes data on: road geometrics & traffic volumes.
 - Data updated weekly.
 - **Traffic Crash Analysis Tool (TCAT)**
 - Computerized tool to quickly provide the following reports:
 - Intersection rankings
 - Intersection weighted rankings
 - Link rankings
 - Link weighted rankings
 - Collision diagrams

What does RCOC have to do with “safety culture”?

- Safety has been the Road Commission’s official top priority for the last 31 years.
- Since 1978, safety considerations have been:
 - The most-heavily weighted factor in road-improvement project selection
 - A major focus of road project design
 - A critical factor in the selection and performance of road maintenance activities (e.g. edge ruts & overlays)
 - The most-critical element of traffic signal, sign and road markings decisions

What does RCOC have to do with “safety culture”? continued

- More extensive safety reviews than ever before.
 - Examples:
 - Safety reviews of top 50 intersections & links
 - Include field reviews
 - To identify long-term & interim actions
 - Safety audits
 - Multi-departmental reviews of planned projects
 - To ensure they address all safety issues
 - Research on crashes by type
 - Nighttime drinking drivers...

RCOC's safety culture: End result

- Safety considerations have come to permeate every level of decision making at RCOC.
- Over time, these important changes resulted in significantly safer roads.

Why did RCOC make Safety the No. 1 priority?

Liability!

RCOC's "Highway Risk Management Program"

- Goal:
 - Change RCOC's culture from: "*We've never done it that way*"
 - To: "***We've always done it this way***" (safety orientation)

Employee Involvement

- “Pink Slip” program (why pink?)

OAKLAND COUNTY ROAD COMMISSION ROAD HAZARD REPORT FORM

NIGHT OFFICE: 358 - 4894 (STATION 4) FILE NO. _____

TO:	LOCATION OF HAZARD:	DESCRIBE PROBLEM:
TRAFFIC _____	(NAME OF ROAD) _____	_____
MAINT. _____	_____	_____
ENGINEER. _____	(NEAREST CROSS ROAD) _____	_____
PERMITS _____	_____	_____
OTHER _____	FT. _____ N S E W (DISTANCE FROM CROSS ROAD OR A REFERENCE POINT)	_____
COMPLETED BY:	ON THE N S E W SIDE OF THE ROAD	ACTION TAKEN BY YOU:
NAME: _____	_____	RADIO REPORT TO: _____ COMPLETED FORM ONLY <input type="checkbox"/>
DEPT. _____	_____	PHONE CALL TO: _____
DATE: _____ TIME: _____ A.M. P.M.	_____	_____

TO BE COMPLETED BY DEPARTMENT:	FIELD INSPECTION _____ (DATE)	CC:
TIME REPORT RECEIVED: _____ A.M.	_____	DEPT. HEAD <input type="checkbox"/>
DATE REPORT RECEIVED: _____	CREW DISPATCHED _____ (DATE)	D.C.S. <input type="checkbox"/>
COMMENTS ON ACTION TAKEN:	_____	ORIG. EMPLOYEE <input type="checkbox"/>
_____	_____	_____
_____	_____	_____

OCRC 272 12-20-73 SIGNED: _____ DATE: _____

- Employee safety

RCOC: Spreading the safety culture to other agencies

- The Oakland County Federal Aid Task Force (includes RCOC and all cities & villages).
- Distributes most “categorical” federal road funds coming to the county.
- RCOC, cities and villages all agreed to make “safety” the top priority in project rating system.

How are RCOC, city & village projects rated?

<u>Category</u>	<u>Maximum Points</u>	
	<u>STP</u>	<u>TEDF</u>
<u>Engineering Considerations</u>		
•Crash reduction	35	30
•Improve roadway cond.	25	15
•Improve traffic oper.	20	35
•Improve soc., econ. & envir.	9	10
<u>Planning Considerations</u>		
•Importance to system	16	
•Coord. with other modes	4	16
<u>Funding Considerations</u>		<u>4</u>
•Local contributions	<u>3</u>	
	103	100

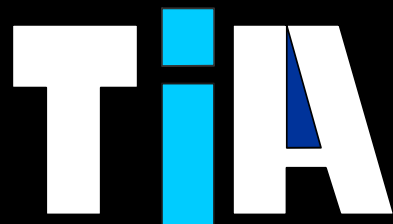
- Recognized 25+ yrs. ago by FHWA as a fair & objective way to select projects for federal funds (one of 4 models).

Results:

- More than 30 years of federally funded RCOC, city & village road projects selected based on a safety orientation.
- More than \$3/4 billion invested in safety-oriented road improvements.

Today at RCOC:

- Reduced fatalities
- Fewer observable “pink slip” problems to report
- Continual monitoring and follow-up



OAKLAND COUNTY STATISTICS

	<u>1967</u>	<u>2004</u>	<u>2008</u>
• Population	600,000	1.2 Mil	1.2 + Mil
• NUMBER OF JOBS	250,400	850,000+	850,000 +
• VEHICLE MILES TRAVELED (VMT)	3.0 Billion	13.1 Bil	13.4 Bil
• TRAFFIC FATALITIES	206	76	57
• FATALITY RATE	6.8	0.58	0.42

Traffic Safety Comparisons

Fatality Rates

(per 100 million vehicle miles of travel)

	<u>1967</u>	<u>2007</u>
– Oakland County	6.8	0.35
– Michigan	6.5	1.04
– USA	5.7	1.36

Safety Belt Usage in Michigan – 94.3%

Second highest usage rate in the US

RCOC recognized by FHWA for dramatically impacting fatality rate

From Federal Highway Administration's "Innovative Intersection Safety Improvement Strategies and Management Practices: A Domestic Scan" (September, 2006)

CHAPTER 2. SAFETY MANAGEMENT AND COMPREHENSIVE SAFETY PROCESSES

This chapter presents findings related to safety management and comprehensive safety processes that were identified and discussed during the scan. It is believed that these processes have a positive influence on intersection safety, although there have been limited attempts to correlate specific crash reductions with the specific processes. It is important to recognize that several of the items discussed in this chapter are broader in scope than just intersection safety. However, it became apparent during many of the interviews and site visits that intersection safety is positively affected by safety management practices of agencies and communities. For these reasons, safety management should be discussed first, before the focus of this report shifts to traffic control, traffic operations, and intersection geometric treatments.

An Uncompromising Commitment to Safety

In terms of intersection safety, there was one public agency that stood out... due to its concentrated attention to safety. The reason for this is that the RCOC in Michigan is responsible for the design, operation, maintenance, and construction of 10,000 miles of county roads – about half of its public roads – in this large, rapidly urbanizing county north of Detroit. The notable item about the RCOC is its fundamental commitment to safety. Many years ago, the RCOC management essentially made safety a priority in road decisions. The RCOC created a process in which crash data were to be used to measure the safety of its highways. In addition, RCOC instituted formal documentation of its safety performance goals. Not only that, but the RCOC set about to assure that improvements in safety were the direct result. For example, when the Council of Governments solicits projects as part of the regional constrained long-range transportation plan, the RCOC considers safety as one factor in selecting improvement projects.

In deciding where and how Michigan Transportation Economic Development Fund (TEDF-Category C funds) money is distributed, Oakland County employs a project priority rating that assigns a weight of 30 points out of a possible 103 points for a project's assessed potential to reduce crashes. Table 1 (page 8) presents the factors and their associated weights used in the rating scheme. For the application of Surface Transportation Program (STP) funds, they employ a slightly different project priority rating scale that actually weights crash reduction even higher (35 points out of 103 points). Oakland County's 40 cities and villages, which are eligible recipients of both TEDF (C) and STP funds, also had to agree to the point system (in effect, the Road Commission and the cities/villages compete for the use of these funds). Safety improvements have been taking place on both county roads and city/village streets across the county.

Along the way, the RCOC has created a culture of safety that has allowed for significant improvements in highway safety while growing from a county of 300,000 in 1967 to 1.2 million people in 2004. During the scan team's visit, the RCOC indicated that they were able to achieve this safety culture by building safety as a highly weighted factor into federal investment decisions, by requiring safety to be the Number One priority of the agency so that it is driving decisions, and by getting good crash data.

From: FHWA's "*Innovative Intersection Safety Improvement Strategies & Management Practices: A Domestic Scan*," 2006

"In terms of intersection safety, there was one public agency that stood out...due to its concentrated attention to safety.... The notable item about RCOC is its fundamental commitment to safety."

"RCOC has created a culture of safety that has allowed significant improvement in highway safety while growing from a county of 600,000 to 1.2 million."

Innovative Intersection Safety Improvement Strategies and Management Practices: A Domestic Scan

Performance-Based Safety Systems

To achieve appreciable and meaningful reductions in intersection crashes, several agencies indicated that there is a pressing need for a performance-based safety management system. In order to advance the safety agenda in the United States, especially with respect to rural areas, safety systems are needed to ensure that the safety of these areas is brought up to performance standards. Many highway agencies have identified a variety of obstacles and impediments; however, the RCOC has learned that it was not simply enough to claim expected benefits from projects. Rather, RCOC learned that it needed to evaluate the effects of its road decisions on safety, specifically crashes. Hence, it was determined that continuously monitoring the safety performance of roads was needed, in terms of reported crash frequency, crash rates, and crash severity. This, in turn, allowed better decisions to be made in roadway investments. It is because of the systems put in place by the RCOC that the organization can cite the statistics in table 2, which show that over a period of nearly 40 years, despite a four-fold growth in travel in the county, traffic fatalities have been reduced by 64 percent and traffic fatality rates have been reduced by more than 91 percent.

Table 2. Changes in Oakland County's Population, VMT, Crashes, Fatalities, and Crash Fatality Rate.

	1967	2004
Population	300,000	1,200,000
Annual Vehicle Miles Traveled (VMT)	3.0 Billion	13.1 Billion
Traffic Fatalities	206	75
Traffic Fatality Rates, in fatalities per 100 MVM:		
Oakland County, Countywide average	6.8	0.57
Michigan, Statewide Average	No data	1.1
United States, National Average	5.3	1.4

MVM = Million Vehicle Miles
 Source: TIA and SEMCOG

“Systems are needed to ensure that safety performance can be measured and compared to performance standards. Many highway agencies do not have such a system in place...RCOC has implemented a system.”

“It is because of the systems put in place by RCOC that the organization can ... show that over a period of nearly 40 years, despite a four-fold growth in travel ... traffic fatality rates have been reduced by more than 91 percent.”

What were the key elements of success for RCOC?

- Strong, consistent & continuous support from the top.
- Availability of data and analysis (TIA).
- Employee buy-in.
 - Annual Safety Banquet
 - Recognition of success agencywide.



Recognizing All Employees

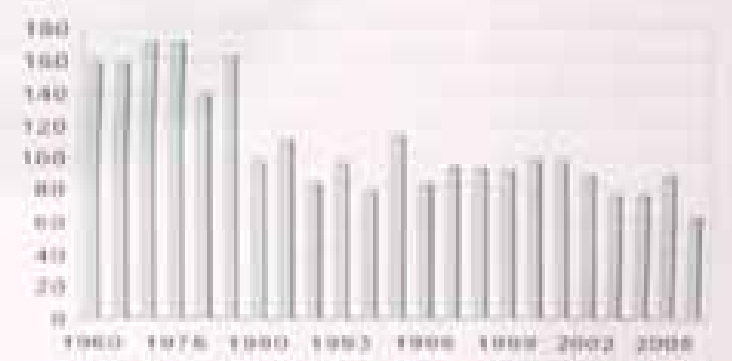
ROAD COMMISSION

Oakland County: Among the Safest Roads in the World

...And it's No Accident!



Oakland County Total Traffic Fatalities

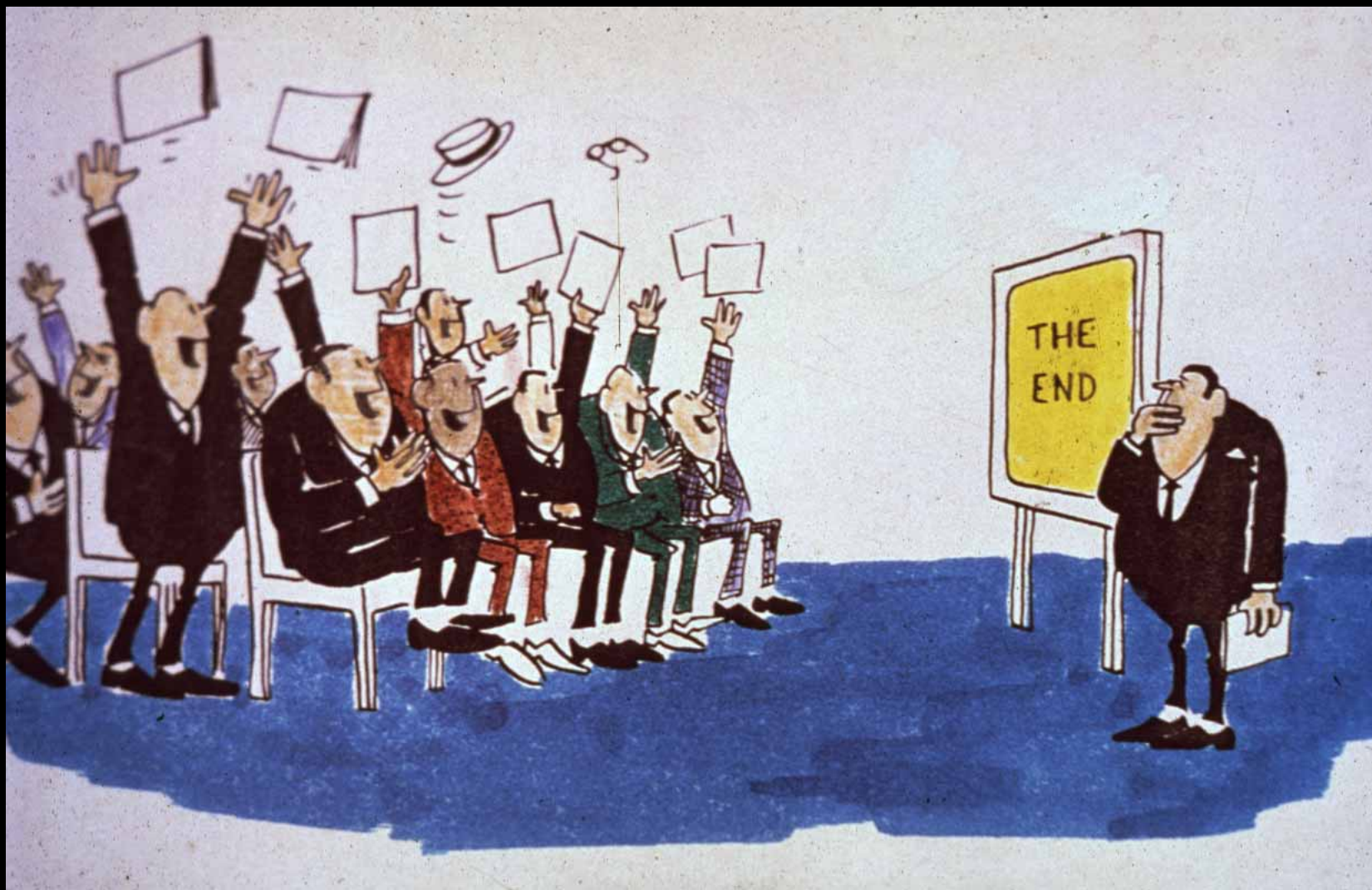


Thanks Signal Systems for your hand in making our roads so safe!

Bottom line:

Think about it ...

There are children/grandchildren in Oakland County today who would not have been born if we hadn't reduced our fatality rate.



QUESTIONS ???

