

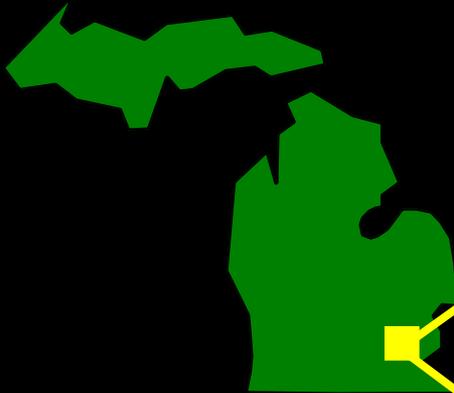
Oakland County's Highway Safety Success Story: Creating a Traffic-Safety Culture

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Geographic Perspective



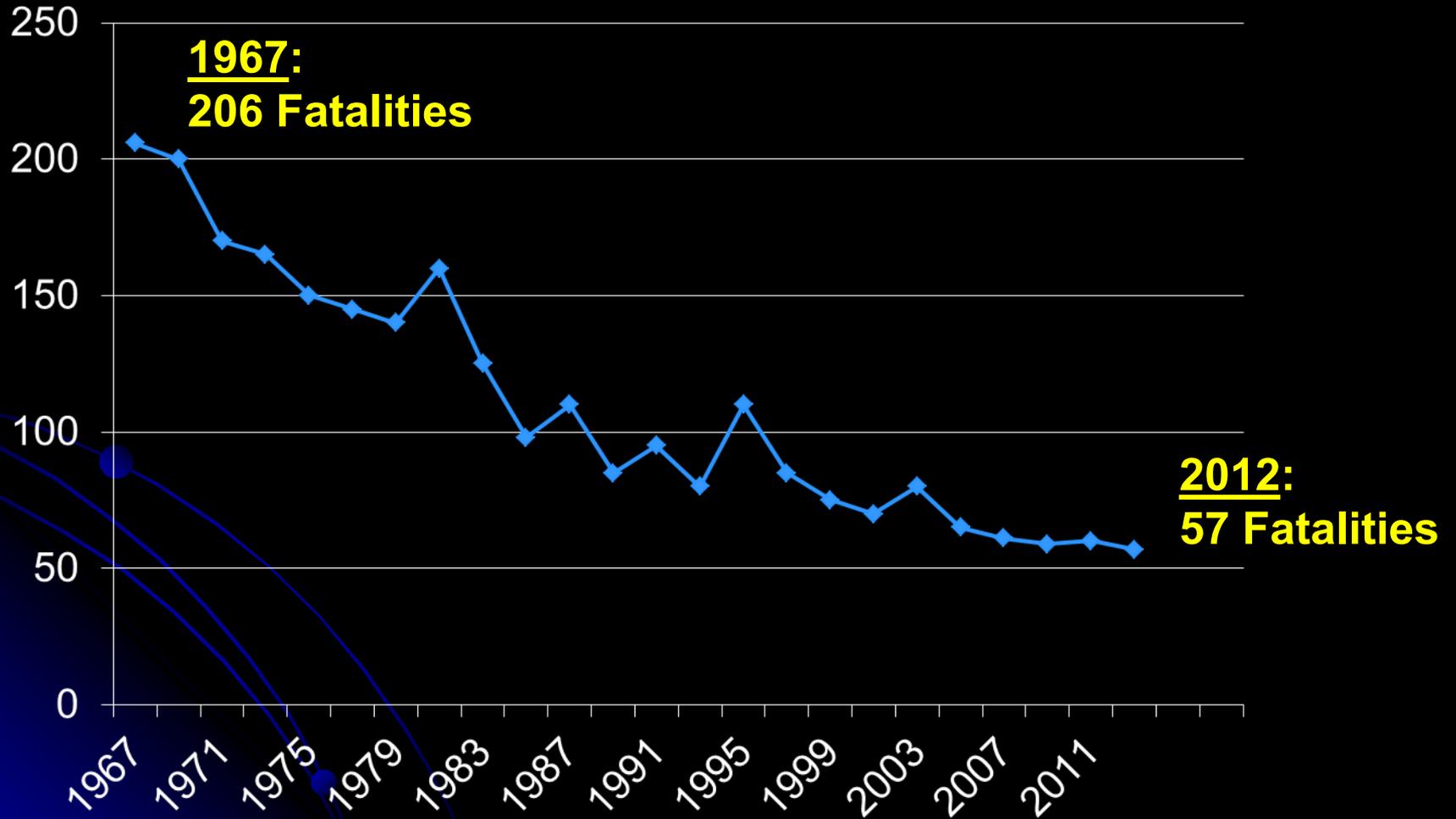
- 910 square miles
- 1.2 million-plus people
- Urban to rural
- RCOC: Largest county road system in Mich. (2,700-plus miles).

Oakland County's Safety Success Story

- Today, Oakland County's roads are among the safest in the world for an area our size.
- This was no "accident."
- It did not happen over night!



Oakland County Total Traffic Fatalities



Oakland County Statistics

	<u>1967</u>	<u>2012</u>
• POPULATION	600,000	1.2 + Mil
• NUMBER OF JOBS	250,400	850,000 +
• DAILY COMMUTERS FROM OTHER COUNTIES		300,000
• VEHICLE MILES TRAVELED (VMT)	3 Billion	13.4 Bil
• TRAFFIC FATALITIES	206	57
• FATALITY RATE	6.8	0.46

Fatality Rates (per 100 million vehicle miles of travel)

	<u>1967</u>	<u>2012</u>
Oakland County	6.8	0.46
Michigan	6.5	0.99
USA	5.7	1.14

What brought this about?

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



What is TIA?

- Non-profit agency dedicated to:
 - Identifying traffic safety trends that negatively impact society, and
 - Developing solutions that can be implemented to save lives, prevent injuries, and improve mobility in Michigan.
- Created in 1967 by more than two-hundred government, business, and academic leaders in Oakland County to address Oakland's fatality rate; higher than state and national rates.



TIA Membership and Support Through the Years

- Corporate
 - Automotive, Energy, Insurance, etc.
- Government
 - State, County, and Local Government



Three Primary Factors in Crashes

- Driver
- Vehicle
- Roadway

TIA focused on two:

- Driver
- Roadway



The Driver



- **Education:**

- Numerous programs to support traffic safety
 - Remembering Ally: Distracted Driving Awareness Campaign, which received a national award and included a video that was viewed in more than 90 countries
 - “Early Birds” traffic safety seminars (avg. 50-100 attendees from the law enforcement, traffic engineering, corporate, and elected official sectors)
 - Drunk driving and safety belt awareness materials

- **Enforcement:**

- TIA manages several traffic enforcement grants in Oakland County
- TIA crash data is used for selective enforcement.



The Roadway

TIA services

- Engineering:
 - Traffic evaluations
 - School evaluations
 - Crash data analysis capabilities enhanced
- Early data:
 - Transition from pins on a map to Intersection & link rankings by frequency & severity.



Traffic Crash Analysis Tool (TCAT)

- Customized software database
- Includes data on road geometrics & traffic volumes
(able to compare intersections & links)
- Data updated weekly
- Computerized to quickly provide the following reports
 - Intersection rankings
 - Link rankings
 - RCOC Customized weighted rankings
 - Collision diagrams



Creating RCOC's Safety Culture

- Managing Director designating “safety is first”
- Creation of the “Highway Risk Management Program”
- Goal: Include safety in everything we do.
 - Change RCOC's culture from: “*We've never done it that way*”
 - To: “*We've always done it this way*”
(safety orientation)

Creating RCOC's Safety Culture

- From the start, RCOC has been:
 - TIA's largest financial supporter
 - The most frequent user of TIA data
- 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 marking decisions

Creating RCOC's Safety Culture

- Extensive safety reviews
 - Safety reviews of top 50 intersections, links (paved & gravel)
 - Multi-departmental team
 - Includes field reviews
 - Identify long-term & interim actions
 - Safety audits
 - Multi-departmental reviews of planned projects
 - To ensure they address all safety issues before project design begins
 - Research on crashes by type
 - Nighttime drinking drivers...
 - In-depth review of all fatalities and pedestrian accidents

Creating RCOC's Safety Culture

- Employee involvement
 - “Pink Slip” program (why pink?)

OAKLAND COUNTY ROAD COMMISSION ROAD HAZARD REPORT FORM

NIGHT OFFICE: 858 - 4834 (STATION 4)	FILE NO. _____
TO: LOCATION OF HAZARD: _____	DESCRIBE PROBLEM: _____
TRAFFIC _____ (NAME OF ROAD) _____	_____
PAINT _____	_____
ENGINEER _____ (NEAREST CROSS ROAD) _____	_____
PERMITS _____	_____
OTHER _____ (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) _____
TIME REPORT RECEIVED: _____ A.M.	CREW DISPATCHED (DATE) _____
DATE REPORT RECEIVED: _____	CC: <input type="checkbox"/>
	DEPT. HEAD <input type="checkbox"/>
	D.C.S. <input type="checkbox"/>
	DEED: <input type="checkbox"/>
	EMPLOYEE <input type="checkbox"/>
COMMENTS ON ACTION TAKEN: _____	
OCRC 272-12-20-73	SIGNED: _____ DATE: _____

- Increased employee safety efforts
- Day 1 submersion

Spreading the Safety Culture

- 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 federal STP project rating system & 2nd highest for TEDF rating.
- Providing technical expertise to locals
- Close relationship with MDOT to focus maintenance efforts on safety

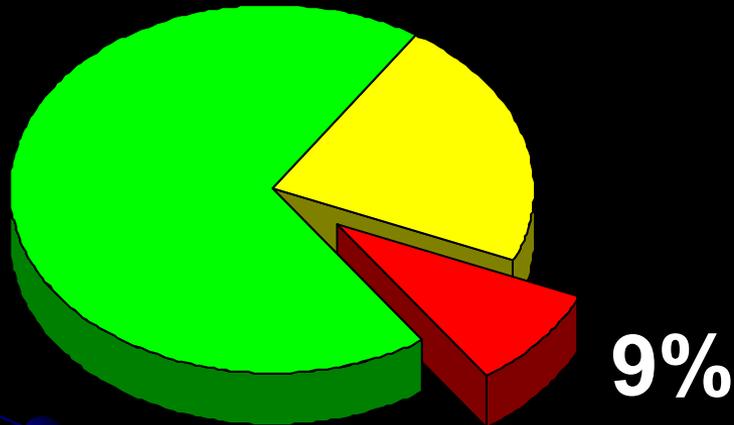
RCOC's Safety Culture: End Result

- Safety considerations have come to permeate every level of decision making at RCOC.
- Cities & villages followed suit, applying the safety priority to their streets.
- More than 30 years of federally funded RCOC, city & village road projects selected based on a safety orientation.
- Nearly a billion dollars invested in safety-oriented road improvements.
- Possibly the Lowest Fatality Rate in the Nation

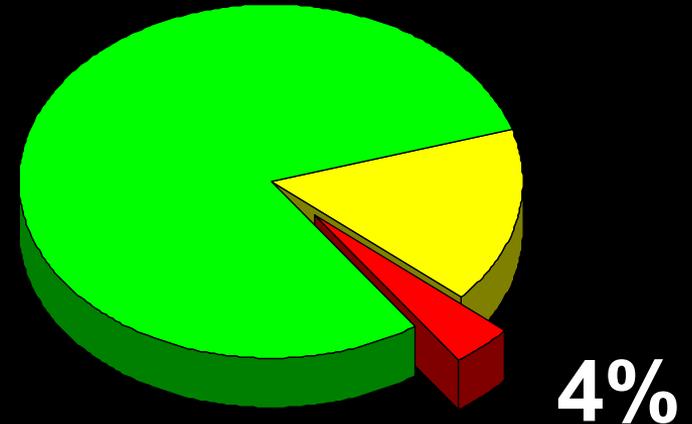
FAST-TRAC BENEFITS

Accident Severity Analysis

BEFORE



AFTER

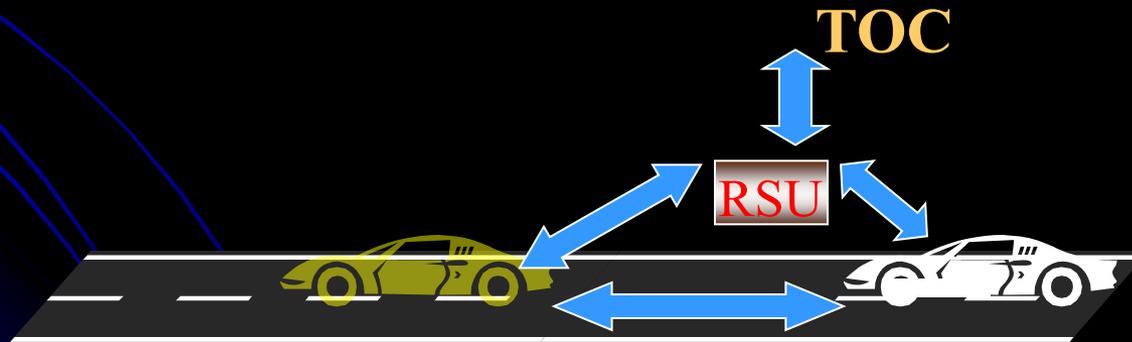


-  *Possibly Injured*
-  *Non-Incapacitating*
-  *Incapacitating*

Connected Vehicles

Definition: To create an “Enabling Communication Infrastructure” to support Vehicle-to-Vehicle and Vehicle-to-Infrastructure Communications... the “*Wireless Superhighway*”

Purpose: To enable a number of new applications that provide significant safety, mobility, and commercial benefits



Paradigm Shift for Roadway Safety Connected Vehicles

- **Move from passive safety to active safety**
- **“While crashworthiness....will continue to be very important, we are reaching the point of diminishing returns....., the biggest return on investment in terms of lives saved....in the future will come from.....crash avoidance technologies” – Dr. Jeffrey Runge, former Administrator of NHTSA**

**RCOC recognized by FHWA for
dramatically impacting fatality rate in
2006 report:**

***“Innovative Intersection Safety
Improvement Strategies &
Management Practices: A
Domestic Scan,”***



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, the RCOC is due to its concentrated attention to safety in Michigan is responsible for the design, operation, and maintenance of approximately 10,000 miles of county roads – about half of its public roads – in this large, rapidly urbanizing area 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 significant improvements in highway safety while growing from a county of 300,000 to 1.2 million people in 2004. During the scan team's visit, the RCOC indicated that they achieved this safety culture by building safety as a highly weighted factor into federal grant 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.

“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.”

Performance-Based Safety Systems

To achieve appreciable and meaningful results, it is indicated that there is a pressing need for a system in place in order to advance the safety agenda in the United States, especially with respect to intersection safety, systems are needed to ensure that the safety performance can be measured and compared to performance standards. Many highway agencies do not have such a system in place and point to a variety of obstacles and impediments; however, the RCOC has implemented a system. Agency administrators learned years ago that it was not simply enough to claim expected safety 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, Crash Fatalities, and Crash Fatality Rate.

	1967	2004
Population	300,000	1,000,000
Annual Vehicle Miles Traveled (VMT)	3.0 Billion	12.0 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.”

Key elements of success for RCOOC

- Relentless, consistent & continuous support from the top
- Availability of data and analysis (TIA).
 - Data drives decisions
- Safety is ubiquitous
- Employee buy-in
 - Annual Safety Banquet
 - Safe Driver/Safe Worker
 - Recognition of success agency-wide



Recognizing All Employees

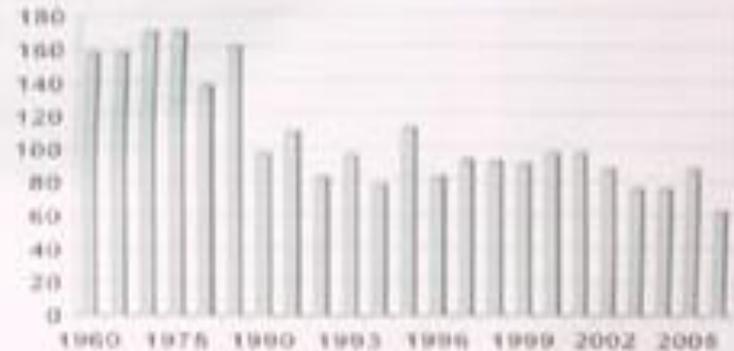
(May 2007)

Oakland County: Among the Safest Roads in the World

...And it's No Accident!



Oakland County Total Traffic Fatalities

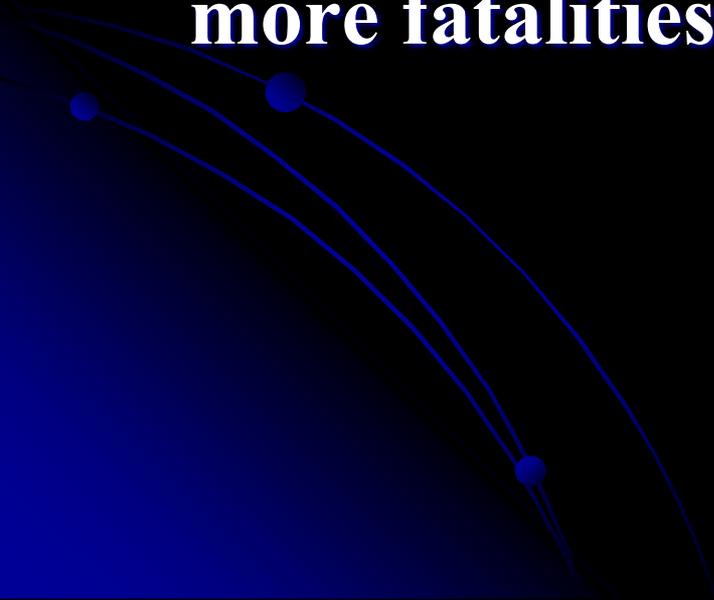


Thanks Signal Systems for your hand in making our roads so safe!

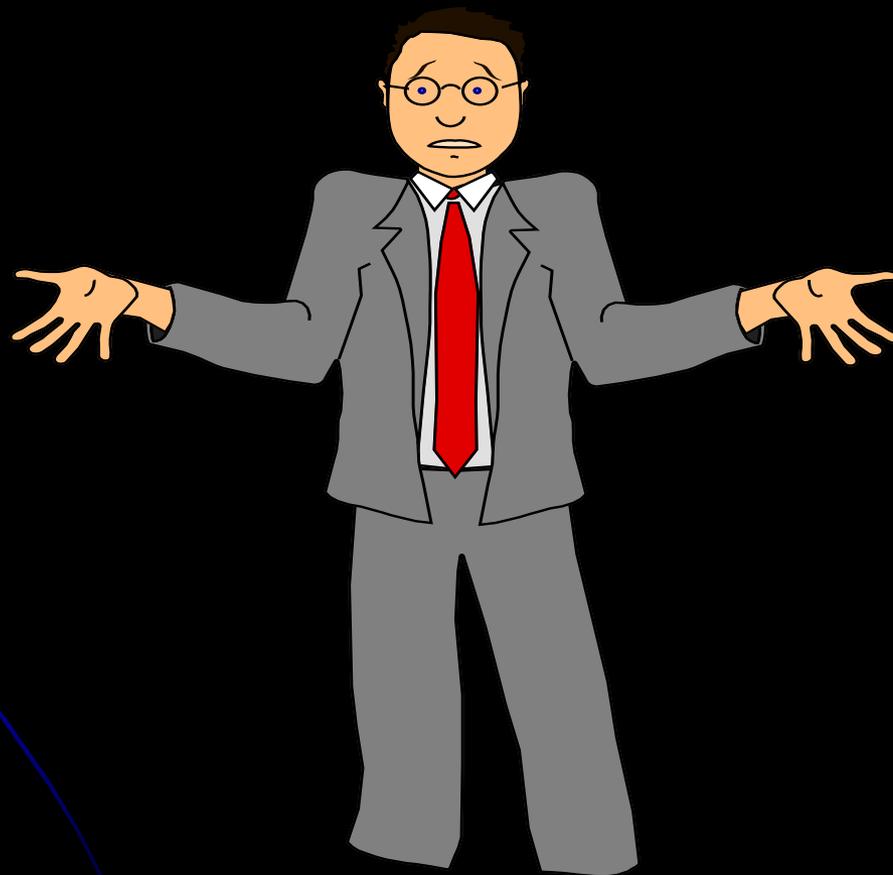
Bottom line:

Think about it ...

If Oakland County met the average national fatality rate, there would have been **over 80 more fatalities on our roads in 2012.**



QUESTIONS ???



How does the FAC rate projects?

Category

Maximum Points

Engineering Considerations

- Crash reduction
- Improve roadway cond.
- Improve traffic oper.
- Improve soc., econ. & envir.

STP

TEDF

35

30

25

15

20

35

9

10

Planning Considerations

- Importance to system
- Coord. with other modes

16

16

4

4

Funding Considerations

- Local contributions

3

3

103

103

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

Oakland County Total Traffic Fatalities

