AGING ROAD USERS STRATEGIC SAFETY PLAN

Work Order # GPC VI-20

Submitted by:

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Submitted to:

TPO
Miami-Dade Transportation Planning Organization

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Planning Organization

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SUMMARY

The goal of the Miami-Dade County Road Users Strategic Safety Plan is: *To improve the safety and mobility of the County's aging road users by reducing their fatalities, serious injuries, and crashes, while maintaining their mobility and independence.* An "aging road user" is a driver, passenger, pedestrian, bicyclist, transit rider, motorcyclist, or operator of a non-motorized vehicle, who is 65 years of age and older.

In 2015, Florida led the nation in older adults with 19 percent of its population 65 years of age and older. By the year 2045, about 22 percent of Floridians will be 65 or older. Mirroring this anticipated trend, older adults in Miami-Dade County numbered about 400,000 in 2015, representing 15 percent of the County's total population.

With this information and the goal of the project in mind, the study's objectives and performance measures are presented in **TABLE S-1**.

The issues surrounding each type of "aging road user" are presented next.

Auto Users

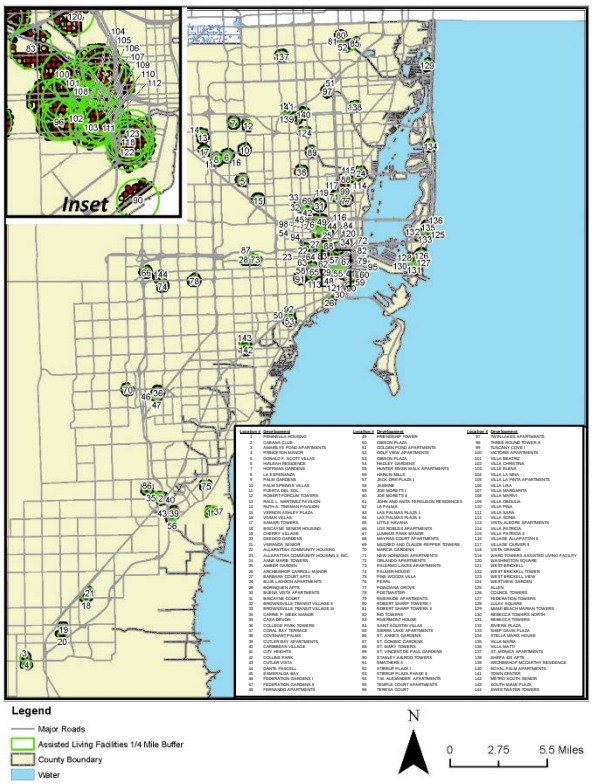
In 2014, motor vehicle crashes in Miami-Dade County (MDC) for people 65 and older accounted for 8.7 percent of all crashes in the county. Older person injury crashes (982) were five percent of all crashes in the county in that year, while fatal crashes involving aging road users represented 0.3 percent. The trend in these three categories of crashes for persons 65 years of age and older indicate total crashes in Miami-Dade County between 2008 and 2014 (inclusive) increased by 127 percent, while injury crashes rose 25 percent, and fatal incidents averaged 49 per year with a range of 37 in 2008 to 59 in 2014. It is noted the trend in aging road users by gender in the categories of total and injury crashes in MDC were very similar, but the pattern of ***fatal*** crashes involving men is always higher than women.

Table S-1: Project Objectives & Performance Measures

PROJECT OBJECTIVES & PERFORMANCE MEASURES	
Objective	Performance Measure
1. Ensure that aging road users have knowledge of transportation resources agencies, etc.), and how to use them.	1. Number of resources identified and/or developed and implemented; 2. Number of outreach presentations and attendees; 3. Number of pieces of educational material distributed.
2. Ensure a variety of "non-driver" transportation options (transit, on-demand, etc.) are accessible by aging road users.	1. Number of alternative transportation options established; 2. Number of transit stops added; 3. Number of people using mobile apps to access on-demand transportation.
3. Advocate and implement streets that are safe for all users.	1. Number of Complete Street policies developed and implemented; 2. Number of crashes involving aging road users in total and within one-quarter of residential living centers for older adults.
4. Provide access to information and education for aging road users on "transitioning from driving."	1. Number of resources identified and/or developed and implemented; 2. Number of outreach presentations and attendees.
5. Measure of the success of achieving the above objectives by surveying aging road users.	1. Conduct, on a regular basis, a countywide survey of aging road users.

While these broad trends are not alarming, they don't point to specific issues or locations at which improved safety should be afforded to seniors. To gain such insights, analyses of crash patterns for 140+ older adult residential living centers were conducted (**FIGURE S-1**). Specifically, the following were examined: total crashes of all types, and crashes involving persons 65 and older as auto users, pedestrians, or bicyclists that occurred within one-quarter-mile of such centers. From 2008 through 2014, between ten percent and 11 percent of all crashes in MDC occurred within one-quarter-mile of these assisted living locations. However, it should be noted that during that period incidents countywide, and those within one-quarter-mile of an assisted living facility, increased by 70 percent and 60 percent, respectively.

Figure S-1: Analysis of Crash Patterns



Year	Total # of Crashes All Ages	# of ALL AGE Crashes within ¼-Mile of Assisted Living Facilities	Percent of Total Crashes
2008	133,711	14,644	11.0%
2009	143,837	16,498	11.5%
2010	157,820	15,105	9.6%
2011	160,051	15,925	9.9%
2012	164,749	17,763	10.8%
2013	178,933	18,923	10.6%
2014	228,589	23,431	10.3%

Tier I Sites		Tier II Sites		Tier III Sites	
#	NAME	#	NAME	#	NAME
16	Vivian Villas	59	Joe Moretti I	99	Tuscany Cove I
60	Joe Moretti II	64	Las Palmas Plaza II	65	Little Havana
3	Buena Vista Apartments	10	Palm Springs Villas	28	Blue Lagoon Apartments
6	Hialeah Residence	63	Las Palmas Plaza I	78	Postmaster
58	Jasmine	144	Sweetwater Towers	87	St. Dominic Gardens
		118	Vista Grande	103	Villa Elena
		121	West Brickell	11	Puerta Del Sol
		111	Villa Sara	113	Vista Alegre Apartments
		123	West Brickell View	41	City Heights
				122	West Brickell Tower
				71	New Horizons Apartments
				126	Council Towers

Source: The Corradino Group

Each location was then ranked from highest to lowest based on the total number of crashes within one-quarter-mile in 2012, 2013, and 2014. The sites were also ranked by the number of crashes of any type involving aging road users in those three years. Each time a site ranked in the Top Five, 20 points were assigned. Each time a site was in the Top Ten ranking, it was awarded ten points. The points were then totaled to determine the sites which are of the highest priority (most points) and, therefore, qualified for detailed analysis of local street/intersection conditions to develop countermeasures to protect aging road users.

The sites in three "tiers" are shown in **TABLE S-2**: Tier I is the top priority; Tier II sites are next in line for detailed field work/counter measure analysis; and, Tier III is third in line.

Table S-2: Field Analysis Priority of Assisted Living Sites

Tier I Sites		Tier II Sites		Tier III Sites	
#	NAME	#	NAME	#	NAME
16	Vivian Villas	59	Joe Moretti I	99	Tuscany Cove I
60	Joe Moretti II	64	Las Palmas Plaza II	65	Little Havana
3	Buena Vista Apartments	10	Palm Springs Villas	28	Blue Lagoon Apartments
6	Hialeah Residence	63	Las Palmas Plaza I	78	Postmaster
58	Jasmine	144	Sweetwater Towers	87	St. Dominic Gardens
		118	Vista Grande	103	Villa Elena
		121	West Brickell	11	Puerta Del Sol
		111	Villa Sara	113	Vista Alegre Apartments
		123	West Brickell View	41	City Heights
				122	West Brickell Tower
				71	New Horizons Apartments
				126	Council Towers

Source: The Corradino Group

It is suggested that in 2018, Road Safety Audits (RSAs) be conducted at the "Tier I" assisted living facilities. These should be followed by RSAs at the Tier II and Tier III sites, as resources permit. A Road Safety Audit is a systematic process for

checking the safety implications of roadways/intersections. The objective is to minimize future crash occurrence and severity by recommending improvements to correct unsafe conditions. Combining RSA results of the Tier I sites, with the following strategies (which are applicable throughout Miami-Dade County) can create a manageable "laboratory" to implement improvements and measure their success.

The body of the report offers "countermeasures" to those issues affecting each category of aging road user—driver, passenger, pedestrian, bicyclist, transit rider, motorcyclist, or operator of a non-motorized vehicle. Also, recommendations are made to reduce aging road user incidents in terms of: facility improvements, like signing, lighting and use of changeable message equipment; application of new technology, such as "smart crosswalks" with inroad LED lights that begin to illuminate and flash when a pedestrian is present and ready to cross; and, innovative projects like "It Takes a Village," and a Rapid Senior Mentor Program.

It is imperative that this *Aging Road User Safety Plan* be evaluated and revised on a regular basis. Two primary measures to be used to evaluate progress are the changes in the number of traffic-related fatalities and serious injuries that occur on an annual basis. Both problem identification and continual evaluation require effective record-keeping identifying the frequency and types of older-driver crashes, so countermeasures can be implemented.

INTRODUCTION

To improve the safety and mobility of the County's aging road users by reducing their fatalities, serious injuries, and crashes, while maintaining their mobility and independence—that is the goal of the Miami-Dade County *Road Users Strategic Safety Plan*. An "aging road user" is a driver, passenger, pedestrian, bicyclist, transit rider, motorcyclist, or operator of a non-motorized vehicle, who is 65 years of age and older.

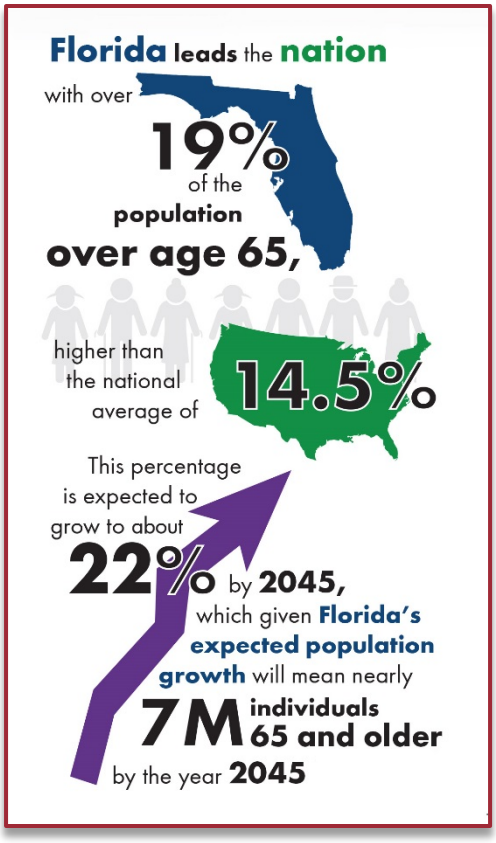
BACKGROUND

In 2015, Florida led the nation in older adults with 19 percent of its population 65 years of age and older. By the year 2045, about 22 percent of Floridians will be 65 or older. Mirroring this anticipated trend, older adults in Miami-Dade County numbered about 400,000 in 2015, representing 15 percent of the County's total population.[1]

Some people believe that older drivers pose a threat to others on the road. To the contrary, the AAA Research Foundation for Traffic Safety has published the following facts:

- **FACT:** Older drivers are considered among the safest on the road, in part because they're less likely to speed, drive while intoxicated and/or text while driving. In 2014, 8.7 percent of traffic crashes in Miami-Dade County were related to people 65 and older. On average, Florida teenage drivers experience crashes at a rate that is much higher than that of older people.

- **FACT:** It's not age but the mental and physical fitness of the individual driver that makes the driving difference. There are many drivers in their 50s who have no business on the road because of physical challenges or vision issues, and an ample number of sharp 75-year-olds who still are excellent drivers.



- **FACT:** Older drivers can take steps to extend their driving years. The most common effective strategy is self-restricting based on when and where someone feels most comfortable driving, and avoiding other situations, such as driving at night or in bad weather. In addition, there are several options for seniors who want to continue driving safely—they range from doing physical and mental exercises to taking defensive driving courses.[2]

About 80 percent of the 46 million older adult drivers are still behind the wheel. Yet, seniors make fewer

[1] *http://edr.state.fl.us/Content/population-demographics/data/PopulationEstimates2016.pdf*

[2] *http://www.minnesotatzd.org/whatistzd/mntzd/partners/mmap/*

than three percent of trips on public transit, and nearly 55 percent of seniors live in communities without public transit.[3]

Nonetheless, it is recognized the time may come when driving is not an option. Signs of when that time is near are when the older adult:

- Forgets to buckle up;
- Does not obey stop signs or traffic lights;
- Fails to yield to the right of way;
- Drives too slowly or too quickly;
- Often gets lost, even on familiar routes;
- Stops at a green light or at the wrong time;
- Does not seem to notice other cars, walkers, or bike riders on the road; and,
- Does not stay in his or her lane.

People age differently. However, there are certain physical factors that deteriorate as a person ages which affect proficiency behind the wheel. Older drivers need to be aware of the following items to continue to safely meet the demands of driving:

- Having regular eye and medical exams;
- Limiting night time driving because aging eyes become more sensitive to bright light and glare;
- Avoiding stressful driving situations such as rush hour travel;
- Avoiding travelling in bad weather;
- Avoiding medications before driving; and,
- Following leading vehicle with a three-to-four-second gap.[4]

Studies indicate that many senior drivers would consider limiting or stopping their driving, if presented with alternatives. That being said, most hesitate at the thought of life without driving. Concerns that may prevent seniors from transitioning to the passenger seat include:

- Depression;
- Losing independence;
- Becoming less active;
- Difficulty finding alternative forms of transportation; and,
- Feeling isolated—45 percent.

To mitigate the potential adverse effects of driving cessation on health and well-being in older adults, intervention programs ensuring safe mobility and social functions must be in place.

The reader is directed to **APPENDIX A** in which dozens of information sources are presented in "abstract" form. Also, the reader should consider taking the survey in **APPENDIX B** to assess his/her personal driving situation.[5, 6, 7]

PROJECT GOAL / OBJECTIVES / PERFORMANCE MEASURES

With this information and the goal of the project in mind, the following objectives and performance measures are presented:

- **OBJECTIVE 1:** Ensure that aging road users have knowledge of transportation resources (agencies, literature, programs, agencies, etc.), and how to use them.
  - ✓ *Performance Measure:* Number of resources identified and/or developed and implemented;
  - ✓ *Performance Measure:* Number of outreach presentations and attendees; and,
  - ✓ *Performance Measure:* Number of pieces of educational material distributed.

[3] *https://safety.fhwa.dot.gov/older_users/noteworthy/elderlymobilitynpg.pdf*
[4] *http://www.maine.gov/dps/bhs/programs/mature_drivers.html*
[5] *http://newsroom.aaa.com/2015/07/giving-up-the-keys-equals-increased-risk-of-health-problems-in-older-adults/*
[6] *https://dps.sd.gov/licensing/driver_licensing/agingdrivers.aspx*
[7] *afods.org/category/c14-news/c103-older-drivers-in-the-news/*

- **OBJECTIVE 2:** Ensure a variety of "non-driver" transportation options (transit, on-demand, etc.) are accessible by aging road users.
  - ✓ *Performance Measure:* Number of alternative transportation options established;
  - ✓ *Performance Measure:* Number of transit stops added; and,
  - ✓ Performance Measure: Number of people using mobile apps to access on-demand transportation.
- **OBJECTIVE 3:** Advocate and implement streets that are safe for all users.
  - ✓ *Performance Measure:* Number of Complete Street policies developed and implememted;
  - ✓ *Performance Measure:* Number of crashes involving aging road users in total and within one-quarter-mile of residential living centers for older adults as shown in **TABLES 1–4** and **FIGURES 1–3**.
- **OBJECTIVE 4:** Provide access to information and education for aging road users on "transitioning from driving."
  - ✓ *Performance Measure:* Number of resources identified and/or developed and implemented;
  - ✓ *Performance Measure:* Number of outreach presentations and attendees; and,
  - ✓ *Performance Measure:* Number of pieces of educational material distributed.
  - ✓ *Performance Measure:* Number of and type of media used as outreach tools.
- **OBJECTIVE 5:** Measure the success of achieving the above objectives by surveying aging road users.
  - ✓ *Performance Measure:* Conduct, on a regular basis, a countywide survey of aging road users.

Aging Road User by Type

As noted earlier, an "aging road user" is a driver, passenger, pedestrian, bicyclist, transit rider, motorcyclist, or operator of a non-motorized vehicle, who is 65 years of age and older. The issues surrounding each type are presented next:

Auto Users

In 2014, motor vehicle crashes in Miami-Dade County for people 65 and older accounted for 8.7 percent of all crashes in the county. Older person injury crashes (982) were five percent of all crashes in the county in that year (982 ÷ 19,874) (**TABLES 1** and **2**), while fatal crashes involving aging road users represented 0.3 percent (59 ÷ 19,874) (**TABLES 1** and **3**). The trend in these three categories of crashes for persons 65 years of age and older indicate total crashes in Miami-Dade County between 2008 and 2014 (inclusive) increased by 127 percent (**TABLE 1** and **FIGURE 1**), while injury crashes rose 25 percent (**TABLE 2** and **FIGURE 2**), and fatal incidents averaged 49 per year with a range of 37 in 2008 to 59 in 2014 (**TABLE 3** and **FIGURE 3**). It is noted the trend in aging road users by gender in the categories of total and injury crashes in MDC were very similar (**FIGURES 1** and **2**); but, the pattern of fatal crashes of male and female road users diverges then merges then diverges again over this seven-year period (**FIGURE 3**), but fatal crashes involving men is always higher than women.[8]

These broad trends are not alarming, but they don't point to specific issues or locations at which improved safety should be afforded to seniors. To gain such insights, analyses of crash patterns for 140+ older adult residential living centers were conducted (**FIGURE 4**).

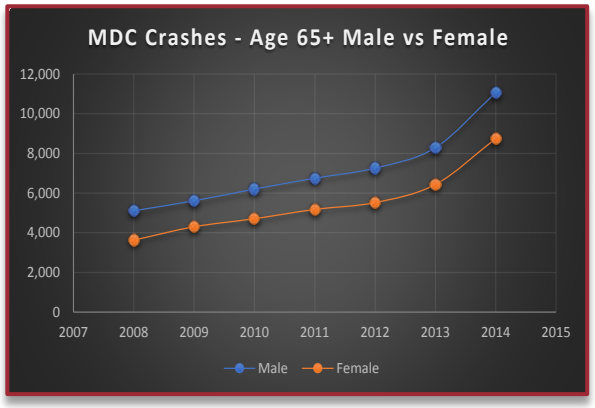
[8] *http://www.iihs.org/iihs/topics/t/older-drivers/fatalityfacts/older-people#Population-and-mileage-rates*

Table 1: TOTAL Crashes Miami-Dade County

Year	Total	AGE 65+	Male	Female
2008	133,711	**8,769**	5,115	3,629
2009	143,837	**9,927**	5,618	4,303
2010	157,820	**10,923**	6,206	4,711
2011	160,051	**12,065**	6,754	5,179
2012	164,749	**12,896**	7,263	5,524
2013	178,933	**14,860**	8,294	6,438
2014	228,589	**19,874**	11,066	8,753

Source: Florida Department of Transportation

Figure 1: Miami-Dade County TOTAL Crashes



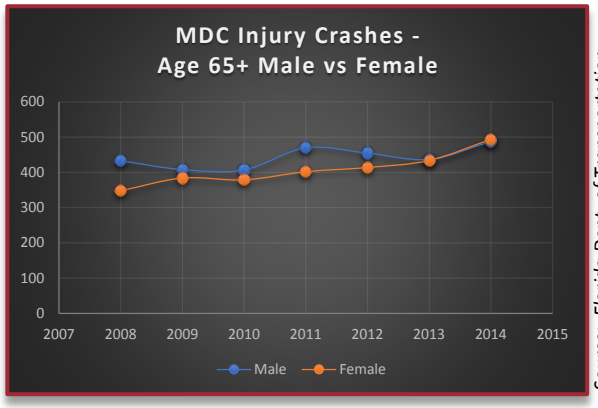
Source: Florida Dept. of Transportation

Table 2: Older Adult INJURY Crashes Miami-Dade County

	AGE 65+ INJURY Crashes	
Year	Male	Female
2008	433	348
2009	408	384
2010	407	379
2011	470	402
2012	455	414
2013	437	434
2014	488	494

Source: Florida Department of Transportation

Figure 2: Miami-Dade County INJURY Crashes



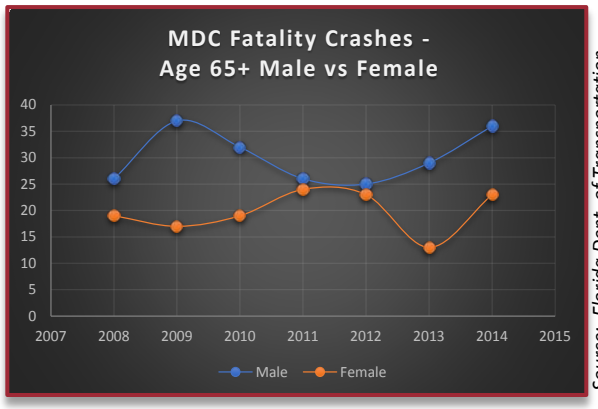
Source: Florida Dept. of Transportation

Table 3: Older Adult FATAL Crashes Miami-Dade County

	AGE 65+ FATAL Crashes	
Year	Male	Female
2008	26	19
2009	37	17
2010	32	19
2011	26	24
2012	25	23
2013	29	13
2014	36	23

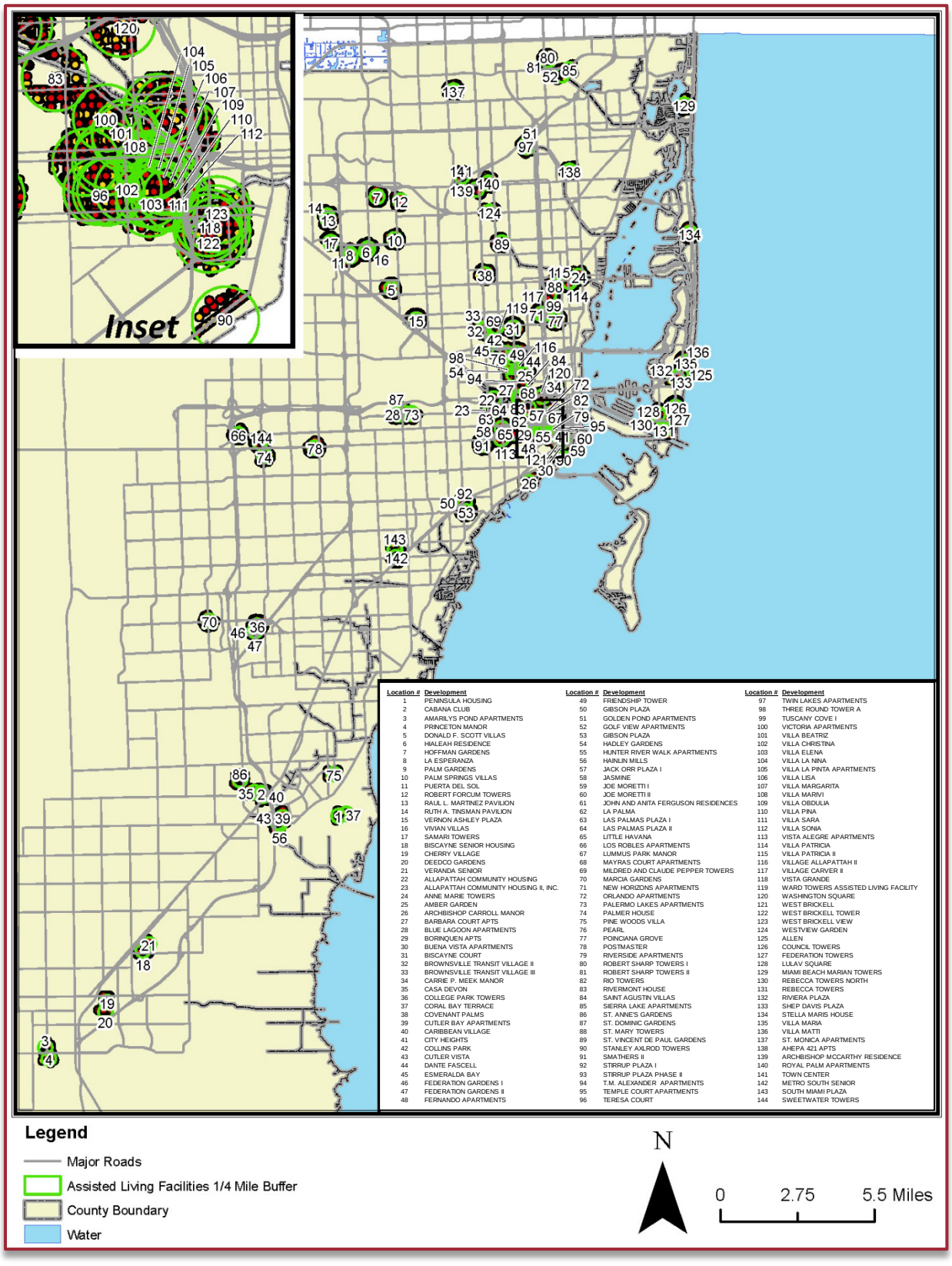
Source: Florida Department of Transportation

Figure 3: Miami-Dade County FATALITY Crashes



Source: Florida Dept. of Transportation

Figure 4: Miami-Dade County Assisted Living Facilities



Location #	Development
1	PENINSULA HOUSING
2	CABANA CLUB
3	AMARILYS POND APARTMENTS
4	PRINCETON MANOR
5	DONALD F. SCOTT VILLAS
6	HIALEAH RESIDENCE
7	HOFFMAN GARDENS
8	LA ESPERANZA
9	PALM GARDENS
10	PALM SPRINGS VILLAS
11	PUERTA DEL SOL
12	ROBERT FORCUM TOWERS
13	RAUL L. MARTINEZ PAVILION
14	RUTH A. TINSMAN PAVILION
15	VERNON ASHLEY PLAZA
16	VIVIAN VILLAS
17	SAMARI TOWERS
18	BISCAYNE SENIOR HOUSING
19	CHERRY VILLAGE
20	DEEDCO GARDENS
21	VERANDA SENIOR
22	ALLAPATTAH COMMUNITY HOUSING
23	ALLAPATTAH COMMUNITY HOUSING II, INC.
24	ANNE MARIE TOWERS
25	AMBER GARDEN
26	ARCHBISHOP CARROLL MANOR
27	BARBARA COURT APTS
28	BLUE LAGOON APARTMENTS
29	BORINQUEN APTS
30	BUENA VISTA APARTMENTS
31	BISCAYNE COURT
32	BROWNSVILLE TRANSIT VILLAGE II
33	BROWNSVILLE TRANSIT VILLAGE III
34	CARRIE P. MEEK MANOR
35	CASA DEVON
36	COLLEGE PARK TOWERS
37	CORAL BAY TERRACE
38	COVENANT PALMS
39	CUTLER BAY APARTMENTS
40	CARIBBEAN VILLAGE
41	CITY HEIGHTS
42	COLLINS PARK
43	CUTLER VISTA
44	DANTE FASCELL
45	ESMERALDA BAY
46	FEDERATION GARDENS I
47	FEDERATION GARDENS II
48	FERNANDO APARTMENTS
49	FRIENDSHIP TOWER
50	GIBSON PLAZA
51	GOLDEN POND APARTMENTS
52	GOLF VIEW APARTMENTS
53	GIBSON PLAZA
54	HADLEY GARDENS
55	HUNTER RIVER WALK APARTMENTS
56	HAINLIN MILLS
57	JACK ORR PLAZA I
58	JASMINE
59	JOE MORETTI I
60	JOHN AND ANITA FERGUSON RESIDENCES
61	LA PALMA
62	LAS PALMAS PLAZA I
63	LAS PALMAS PLAZA II
64	LITTLE HAVANA
65	LOS ROBLES APARTMENTS
66	LUMMUS PARK MANOR
67	MAYRAS COURT APARTMENTS
68	MILDRED AND CLAUDE PEPPER TOWERS
69	MARCIA GARDENS
70	NEW HORIZONS APARTMENTS
71	ORLANDO APARTMENTS
72	PALERMO LAKES APARTMENTS
73	PALMER HOUSE
74	PINE WOODS VILLA
75	PEARL
76	POINCIANA GROVE
77	POSTMASTER
78	RIVERSIDE APARTMENTS
79	ROBERT SHARP TOWERS I
80	ROBERT SHARP TOWERS II
81	RIO TOWERS
82	RIVERMONT HOUSE
83	SAINT AGUSTIN VILLAS
84	SIERRA LAKE APARTMENTS
85	ST. ANNE'S GARDENS
86	ST. DOMINIC GARDENS
87	ST. MARY TOWERS
88	ST. VINCENT DE PAUL GARDENS
89	STANLEY AXLROD TOWERS
90	SMATHERS II
91	STIRRUP PLAZA I
92	STIRRUP PLAZA PHASE II
93	T.M. ALEXANDER APARTMENTS
94	TEMPLE COURT APARTMENTS
95	TERESA COURT
96	TWIN LAKES APARTMENTS
97	THREE ROUND TOWER A
98	TUSCANY COVE I
99	VICTORIA APARTMENTS
100	VILLA BEATRIZ
101	VILLA CHRISTINA
102	VILLA ELENA
103	VILLA LA NINA
104	VILLA LA PINTA APARTMENTS
105	VILLA LISA
106	VILLA MARGARITA
107	VILLA MARVI
108	VILLA OBDULIA
109	VILLA PINA
110	VILLA SARA
111	VILLA SONIA
112	VISTA ALEGRE APARTMENTS
113	VILLA PATRICIA
114	VILLA PATRICIA II
115	VILLAGE ALLAPATTAH II
116	VILLAGE CARVER II
117	VISTA GRANDE
118	WARD TOWERS ASSISTED LIVING FACILITY
119	WASHINGTON SQUARE
120	WEST BRICKELL
121	WEST BRICKELL TOWER
122	WEST BRICKELL VIEW
123	WESTVIEW GARDEN
124	ALLEN
125	COUNCIL TOWERS
126	FEDERATION TOWERS
127	LULAV SQUARE
128	MIAMI BEACH MARIAN TOWERS
129	REBECCA TOWERS NORTH
130	REBECCA TOWERS
131	RIVIERA PLAZA
132	SHEP DAVIS PLAZA
133	STELLA MARIS HOUSE
134	VILLA MARIA
135	VILLA MATTI
136	ST. MONICA APARTMENTS
137	AHEPA 421 APTS
138	ARCHBISHOP MCCARTHY RESIDENCE
139	ROYAL PALM APARTMENTS
140	TOWN CENTER
141	METRO SOUTH SENIOR
142	SOUTH MIAMI PLAZA
143	SWEETWATER TOWERS

Specifically, the following were examined: total crashes of all types, and crashes involving persons 65 and older as auto users, pedestrians, or bicyclists that occurred within one-quarter-mile of such centers. From 2008 through 2014, between ten percent and 11 percent of all crashes in MDC occurred within one-quarter-mile of these assisted living locations. However, it should be noted that during that period incidents countywide, and those within one-quarter-mile of an assisted living facility, increased by 70 percent and 60 percent, respectively (**TABLE 4**).

Table 4: Total Crashes within ¼ Mile of Assisted-Living Centers in Miami-Dade County

Year	Total # of Crashes All Ages	# of ALL AGE Crashes within ¼-Mile of Assisted Living Facilities	Percent of Total Crashes
2008	133,711	14,644	11.0%
2009	143,837	16,498	11.5%
2010	157,820	15,105	9.6%
2011	160,051	15,925	9.9%
2012	164,749	17,763	10.8%
2013	178,933	18,923	10.6%
2014	228,589	23,431	10.3%

Source: The Corradino Group

Each location was then ranked from highest to lowest based on the total number of crashes within one-quarter-mile in 2012, 2013, and 2014. The sites were also ranked by the number of crashes of any type involving aging road users in those three years. Each time a site ranked in the Top Five, 20 points were assigned. Each time a site was in the Top Ten ranking, it was awarded ten points. The points were then totaled to determine the sites which are of the highest priority (most points) and, therefore, qualified for detailed analysis of local street/intersection conditions to develop countermeasures to protect aging road users. The sites in three "tiers" are shown in **TABLE 5**: Tier I is the top priority; Tier II sites are next in line for detailed field work/counter measure analysis; and, Tier III is third in line. It is noted that all five Tier I assisted living centers are considered *urban*; of the nine sites in Tier II, only Sweetwater Towers is considered *suburban*, being located near the Miami-Dade County Fair and Exposition Center. Among the 12 Tier III facilities, all but one—Puerta Del Sol—is considered urban. Puerto Del Sol is located on SW 88th Street west of the Don Shula Expressway.

Table 5: Field Analysis Priority of Assisted Living Sites

Tier I Sites		Tier II Sites		Tier III Sites	
#	NAME	#	NAME	#	NAME
16	Vivian Villas	59	Joe Moretti I	99	Tuscany Cove I
60	Joe Moretti II	64	Las Palmas Plaza II	65	Little Havana
3	Buena Vista Apartments	10	Palm Springs Villas	28	Blue Lagoon Apartments
6	Hialeah Residence	63	Las Palmas Plaza I	78	Postmaster
58	Jasmine	144	Sweetwater Towers	87	St. Dominic Gardens
		118	Vista Grande	103	Villa Elena
		121	West Brickell	11	Puerta Del Sol
		111	Villa Sara	113	Vista Alegre Apartments
		123	West Brickell View	41	City Heights
				122	West Brickell Tower
				71	New Horizons Apartments
				126	Council Towers

Source: The Corradino Group

Pedestrians/Bicyclists/Motorcyclists

In 2016, eight out of the ten most dangerous U.S. metro areas for pedestrians were in Florida, according to the National Complete Streets Coalition. Cape Coral-Ft. Myers ranked as the most dangerous metro area in the nation. Miami-Ft. Lauderdale-West Palm Beach ranked 11th.

2016 rank	Metro area
1	Cape Coral-Fort Myers, FL
2	Palm Bay-Melbourne-Titusville, FL
3	Orlando-Kissimmee-Sanford, FL
4	Jacksonville, FL
5	Deltona-Daytona Beach-Ormond Beach, FL
6	Lakeland-Winter Haven, FL
7	Tampa-St. Petersburg-Clearwater, FL
8	Jackson, MS
9	Memphis, TN-MS-AR
10	North Port-Sarasota-Bradenton, FL
11	Miami-Fort Lauderdale-West Palm Beach, FL

Source: https://smartgrowthamerica.org/dangerous-by-design/

In Miami-Dade County, except for 2011 when senior pedestrian-related incidents were 158 (Table 6), involvement of senior pedestrians in crashes averaged 206 per year and ranged between 195 and 222. These data translate to one to two percent of all aging road user incidents in MDC between 2008 and 2014. On the other hand, it is noteworthy that within one-quarter-mile of 140+ assisted living facilities in Miami-Dade County in 2012, there were 38 crashes involving older pedestrians, or 18 percent of the countywide total. In 2013 there were 37 pedestrian incidents among older adults within one-quarter-mile of an assisted living facility, or 19 percent of the countywide total. Then in 2014, 20 percent of countywide senior pedestrian incidents occurred within one-quarter mile of senior living facilities.

Older adult bicyclists crashes were at a high of 206 in 2009 countywide, with a low of 116 incidents in 2013 (**TABLE 6**). The yearly average for the period 2008-2014 was 158. Older bicyclists were not involved in any crashes around the 140+ MDC assisted living facilities in 2013. In 2012 and 2014, only one incident occurred at nine and eight sites, respectively.

Common Problems and Counter Measures

Taking into consideration how aging effects driving, these are the most common problem areas by road user type:

Auto Users

Issue: Changing Lanes/Merging

Making a lane change can be dangerous. A driver should never weave in and out of lanes of traffic, but changing lanes is appropriate when: a lane is ending; turning at an upcoming intersection requires a different lane; hazards or obstacles are in the driving lane; and, to pass safely when the vehicle ahead is driving slower than the speed limit.

- **COUNTERMEASURES:**
  - ✓ Always use blinkers or turn signals;
  - ✓ Only change one lane at a time;
  - ✓ Look into the rearview mirror, over the shoulder and to the sides to check for approaching vehicles;

Table 6: Aging Road Users/Pedestrian & Bicyclist Crashes in Miami-Dade County

Year	Total Crashes Involving at Least 1 Pedestrian	All Pedestrians Involved in These Crashes	Total Crashes Involving at Least 1 Senior Pedestrian	Summary
2008	1,314	1,386	195	1,368 pedestrians involved in 1,314 crashes; 195 crashes involved 1 or more Senior pedestrians.
2009	1,305	1,356	205	1,356 pedestrians involved in 1,305 crashes; 205 crashes involved 1 or more Senior pedestrians.
2010	1,211	1,284	201	1,284 pedestrians involved in 1,211 crashes; 201 crashes involved 1 or more Senior pedestrians.
2011	1,054	1,139	158	1,139 pedestrians involved in 1,054 crashes; 158 crashes involved 1 or more Senior pedestrians.
2012	1,156	1,245	212	1,245 involved in 1,156 crashes; 212 crashes involved 1 or more Senior pedestrians.
2013	1,168	1,241	199	1,241 pedestrians involved in 1,168 crashes; 199 crashes involved 1 or more Senior pedestrians.
2014	1,220	1,299	222	1,299 pedestrians involved in 1,220 crashes; 222 crashes involved 1 or more Senior pedestrians.

Source: Florida Department of Transportation

- ✓ Do not speed up to change lanes;
- ✓ Never cut anyone off while changing lanes;
- ✓ Don't change lanes when moving through an intersection; and,
- ✓ Check twice for motorcyclists.

Issue: Obeying Traffic Signals

Driving requires operating the vehicle in all kinds of conditions, understanding and obeying traffic signs and signals, and getting to a destination safely while processing other information encountered. Faulty cognition, which often occurs with age, may result in:

- ✓ Distraction or disorientation;
- ✓ Problems maintaining control of the vehicle;
- ✓ Slow response to traffic signs, signals, and/or markings;
- ✓ Trouble recognizing changes in traffic conditions, traffic hazards, and emergencies;
- ✓ Delayed reaction to seeing and responding to the position of other vehicles as they change lanes or enter the roadway;
- ✓ Trouble recognizing and safely responding to pedestrians and bicyclists;
- ✓ Problems properly operating vehicle controls, such as confusing the brake and gas pedals;
- ✓ Improper use of turn signals to warn other drivers when turning or changing lanes; and,
- ✓ Frequently becoming lost or confused when driving.[9]

- **COUNTERMEASURE:** When a number of these symptoms are evident, the aging driver may have to transition away from the wheel.

Issue: Making Left Turns

A 2010 U.S. Department of Transportation study of over two million U.S. car crashes found that drivers making bad left turns caused 22.2 percent of the crashes, compared to just 1.2 percent caused by right turns. What makes turning left particularly hard, especially with age, is older drivers are not very good at judging the speed and distance of objects coming from straight ahead. Left turns require extra caution as they can be dangerous due to potential conflict with oncoming vehicles traveling at high speeds, changing signals, pedestrians utilizing a crosswalk, and limited visibility due to large vehicles, trucks or other obstructions. Often, left turns are made at the same time another vehicle is making a right turn to the same street. In this case, the vehicle making the right turn has the right-of-way. Making a left turn on a red light from a one-way street into another one-way street is permissible, unless otherwise posted, but requires caution. A vehicle making a left turn against oncoming traffic never has the right-of-way, unless given the right-of-way by a green arrow, signifying unobstructed use of the road. Regardless of the situation, that driver should still proceed with caution.

- **COUNTERMEASURE:** The use of protected-only left-turn operations is recommended for all left-turning movements, whenever appropriate. In particular, protected left-turn phasing should be considered where minimum intersection sight distance requirements are not achieved through the use of offset left-turn lanes or other geometric design features, or where a pattern of permissive left-turn crashes occurs. Research has shown use of protected left-turn operations significantly reduces crashes.[10]

[9] *https://www.michigan.gov/documents/mdot/MDOT_OlderDriver-Guide_455323_7.pdf*

[10] *http://www.drivesmartcolorado.com/wp-content/uploads/2015/11/Older-Driver-Booklet-FINAL-PRINT.pdf*

Issue: Following Too Close

Some drivers think that they're going to arrive at their destination sooner if they stay within a few feet of the car in front of them. Tailgating is the fifth leading cause of auto collisions according to the US Department of Public Safety.

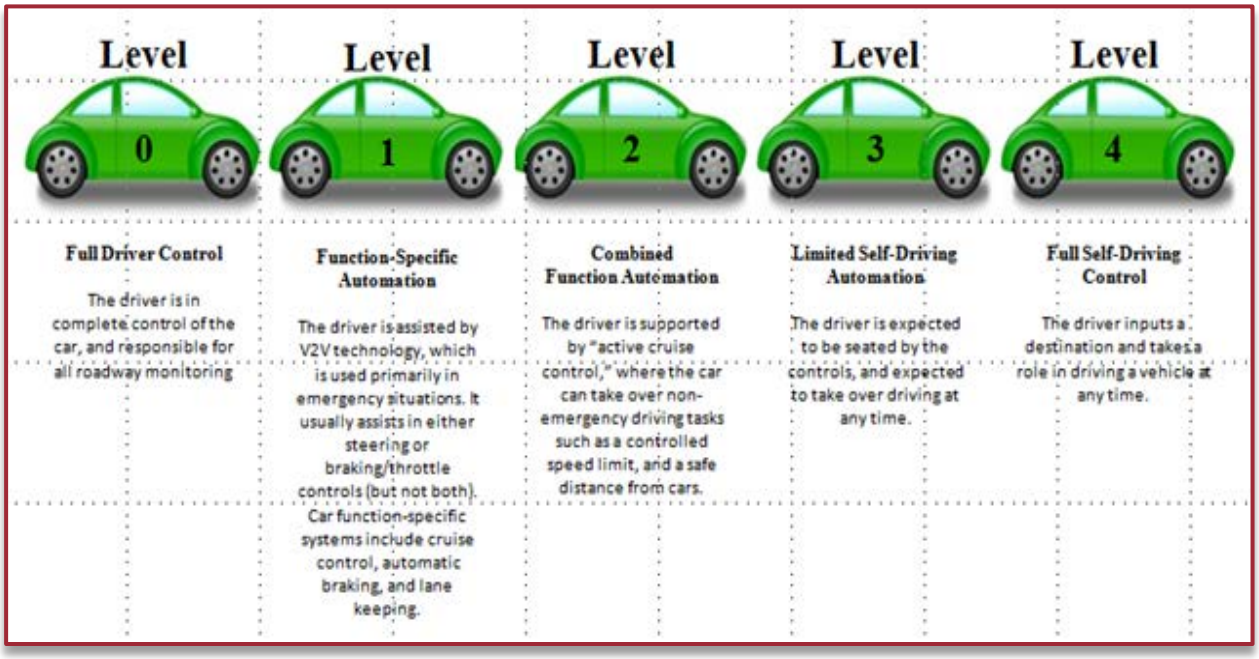
- **COUNTERMEASURE:** Use the "The Three-second Rule" by picking an inanimate object beside the roadway and mentally noting when the leading vehicle passes the object. Then start counting "one thousand one, one thousand two…." If the driver of the following-vehicle gets to "one thousand three" before it passes the object, then the following vehicle is three seconds behind the leading car. For speeds between 35 and 55 mph, in ideal driving conditions (good road surface, good weather, light traffic) three seconds allows time to brake or to safely drive around, if the vehicle ahead stops unexpectedly. Conditions, like wet pavement, which affect the ability to stop, require more than three seconds.[11]

Some say that the future for all drivers is autonomous vehicles, or self-driving cars; and, many surveys have examined this issue.

In 2016, an American Automobile Association (AAA) survey found that three-quarters of Americans reported feeling *afraid* to ride in a self-driving car. One year later, a new AAA survey found that fear is unchanged. While the majority are afraid to ride in a *fully* self-driving vehicle, the latest survey also found that the majority (59%) of Americans are keen to have autonomous features in their next vehicle. This marked contrast suggests that American drivers are ready embrace autonomous technology, but they are not yet ready to give up full control.

Additional survey findings include:

- Half (54%) of U.S. drivers feel *less safe* at the prospect of sharing the road with a self-driving vehicle, while one-third (34%) feel it *wouldn't make a difference* and only ten percent say they would *feel safer*.



[11] *http://www.comedyguys.com/defensive-driving-tips/defensive-driving-tip-8/*

- Baby Boomers (85%) are more likely to be afraid than Millennials (73%) and Generation X (75%) drivers.
- Women (85%) are more likely to be *afraid* than men (69%).

Issue: Alcohol Use

Researchers have examined the effects of alcohol consumption on aging road users' functioning, and some have addressed alcohol's effects on crash risk. Generally, the findings have shown that alcohol is less a factor in crashes for older, as compared to younger, drivers. Approximately ten percent of drivers 65 and older who were injured in crashes, and whose records documented Blood/Alcohol Content (**BAC**), tested positive. This was well below the rates observed for drivers in younger age groups. However, when older drivers tested positive, their BACs were, generally, well above the limit of .08 percent level to signify impaired driving set in most states. This fact highlights the need to provide more attention on countermeasures for drinking and driving among those 65 and older.[12]

Pedestrians/Bicyclists/Motorcyclists

- **COUNTERMEASURES FOR PEDESTRIANS:**
  - ✓ Only cross in a marked crosswalk, especially on multi-lane and higher speed streets;
  - ✓ Use extra caution at intersections;
  - ✓ Avoid roads and interstates where pedestrians are restricted or prohibited;
  - ✓ Use sidewalks when provided. When there is no sidewalk, walk facing traffic on the shoulder of the roadway;
  - ✓ Make it easy for drivers to see you by dressing in light colors and wearing reflective material both in front and back;
  - ✓ Use a flashlight at night or in dimly lit locations;
  - ✓ Do not count on drivers always paying attention;
  - ✓ Make eye contact with drivers to be sure they see you;

When a pedestrian is approaching a dangerous crossing the reflector—which features sensors, LED lights, wireless charging, and communications—can be made to blink and alert car drivers.

  - ✓ Avoid any alcohol or drugs, which can impair your ability to walk safely; and,
  - ✓ Stay alert.
- **COUNTERMEASURES FOR BICYCLISTS:**
  - ✓ Always ride with traffic and follow the rules of the road;
  - ✓ Ride on the trail, paved shoulder, bike lane or bike route;
  - ✓ Do not ride on the sidewalk;
  - ✓ Dress in bright colors in reflective material both in front and back;
  - ✓ Wear appropriate safety gear, including a helmet;
  - ✓ Watch for debris; and,
  - ✓ Watch for turning traffic.
- **COUNTERMEASURE FOR MOTORCYCLISTS:**
  - ✓ Get properly trained and endorsed;
  - ✓ Wear appropriate safety gear, including a helmet, gloves, boots, eye protection and a jacket to protect you in a crash;
  - ✓ Pay particular attention to the signals

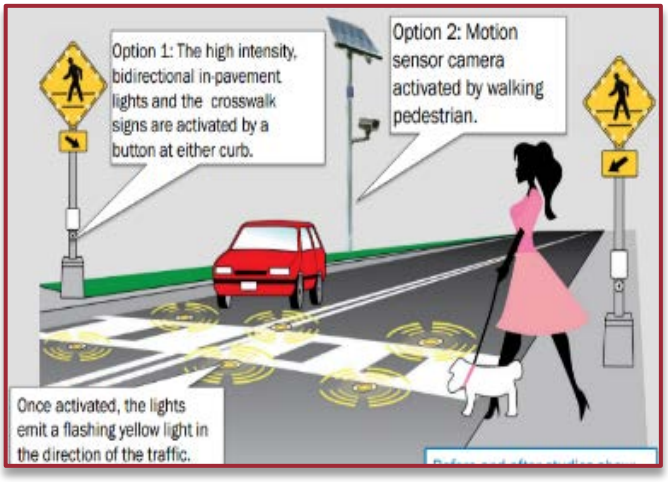
[12] *https://www.nhtsa.gov/sites/nhtsa.dot.gov/files/812063-alcoholandolderdrivercrashes.pdf*

and brake lights of other vehicles, especially trucks;

- ✓ Conduct a safety inspection of your motorcycle before each ride;
- ✓ Watch your speed, especially in bad weather or at night; and,
- ✓ Avoid staying in a vehicle's blind spot.[13]

In addition to these countermeasures, there needs to be better technology utilized at all signalized intersections. These can involve:

- Real-time knowledge of pedestrian activity at traffic signals;
- Use of thermal imaging to extend walk times while crossing an intersection;
- Installation of inroad LED lighting to highlight crosswalks;
- If a mid-block crosswalk is used, make it a "smart crosswalk" such that when a pedestrian is present and ready to cross, the inroad LED lights begin to illuminate and flash;



- Consider technology/signs that are outlined with LED's that flash when the pedestrian is present to help inform a distracted driver of the presence of pedestrians; and,
- Tie together traffic signals—red, yellow, and green—with inroad LED lighting to give additional warning to distracted drivers that a traffic signal is going to change.

Golf Cart Users

There is a growing trend in Miami-Dade County, and elsewhere, to allow golf cart use on streets. Golf cart ordinances exist in Key Biscayne, Palmetto Bay, and Cutler Bay, among other Florida communities. Under Florida Statutes, **cities** may grant permission to use golf carts only on streets under city jurisdiction. Operating golf carts on or crossing roads under Miami-Dade County or Florida State jurisdiction requires the approval of these associated entities.

Florida law defines a golf cart as *"a motor vehicle that is designed and manufactured for operation on a golf course for sporting or recreational purposes and that is not capable of exceeding speeds of 20 miles per hour."*

Florida Statutes define a low-speed vehicle (LSV) as "any four-wheeled electric vehicle whose top speed is greater than 20 miles per hour but not greater than 25 miles per hour, including neighborhood electric vehicles. Low-speed vehicles must comply with the safety standards in 49 C.F.R. s. 571.500 and s. 316.2122." Municipalities in regulating these vehicles must consider "the speed, volume, and character of motor vehicular traffic using the road(s) in making such a determination."

Low-speed vehicles are currently allowed on streets with a speed limit of 35 mph or less. They must meet certain federal safety standards, such as being equipped with seat belts, windshields, mirrors, and

[13] *http://www.drivesmartcolorado.com/wp-content/uploads/2015/11/Older-Driver-Booklet-FINAL-PRINT.pdf*

turn signals, and must be registered and insured, just like other motor vehicles.

In terms of Aging Road Users, widespread use of golf carts is limited because of safety issues. According to Jana Lynott, a senior policy adviser at AARP who specializes in transportation: *"People in these vehicles are at as much risk as someone on a bicycle. There's very little protection."*

Jessica Cicchino, vice president at the Highway Safety Institute, noted her organization conducted a crash test in 2010 between an LSV and a car. The driver in the LSV would have suffered serious or fatal injuries, she said. A driver in a regular golf cart would likely be even more at risk. "They are not crashworthy," Cicchino said. Cicchino also indicated it's particularly worrisome when older people are involved. "They're more fragile and more susceptible to injuries in a crash, so it can be especially dangerous."

The perception of safety is markedly different for Low Speed Vehicles on local roadways, and additional risks apply for elderly pedestrians and bicyclists. While vehicles at lower speed results in different injuries, golf carts operate at the threshold speeds where the severity of injuries markedly increase. Where golf carts are utilized improperly, especially along mixed-use pathways where golf cart drivers may become confused, or erroneously on wider sidewalks, they potentially create new pedestrian or bicycle conflict points with vehicles.

As noted in a U.S. Department of Transportation study, a "Literature Review on Vehicle Travel Speeds and Pedestrian Injuries," vehicular crashes with pedestrians disproportionately result in fatalities for the elderly, even at the lower speeds at which golf carts travel. The severity of non-fatal injuries, incapacitating injuries in particular, also increases significantly at the 21–25 mph speed which golf carts can achieve.

There are contrary opinions by others. So, with limited study on this somewhat new conveyance, municipalities are alerted, in making a decision on permitting golf cart use on their streets by Aging Road Users, to examine the research as it evolves.

Facility Improvements to Reduce Aging Road User Incidents

Based on the data presented earlier in this report, the following measures are proposed to help make vehicle travel safer for aging road users and all road users, for that matter:

- **SIGNS:** Larger, simpler, and better-placed guide signs and street signs—larger lettering (one inch/33 feet); retroreflective materials; placed well in advance of the "event" (such as an intersection or exit ramp). Confusing and multiple signs need to be eliminated. Signs should be placed higher, overhead, and in advance of upcoming streets to announce these.

- **CROSSWALKS:** Crosswalks and pedestrian areas, in general, can be made safer by using retroreflective pavement markings to increase visibility; countdown signals so pedestrians know the amount of time needed to safely cross; longer walk times for slower-paced pedestrians (three feet/second); easier-to-reach, and larger buttons with pedestrian signal plaques to help pedestrians properly understand signals. Pedestrian refuge islands at large streets also help.

- **LEFT-TURN LANES:** Having a signalized intersection with an arrow and a left-turn lane (rather than leaving it to the judgment of the driver to determine when there is a sufficient break in traffic) will reduce the number of dangerous "right angle" collisions. "Offset" left-turn lanes also improve visibility because the vehicle going in the opposite direction doesn't block the path.

- **STOP SIGNS:** The minimum size of stop signs, regardless of approaching vehicle speed, should be 30 inches to deal with reduced visual acuity in the older population. The retro-reflectivity of stop signs must be maintained, not only so they can be read, but so they will be noticed. "STOP AHEAD" signs are useful in situations where drivers appear not to notice stop signs. In special cases, lines or rumble strips across the roadway before a stop sign can help alert drivers.

  Motorists experience the benefits of retro-reflectivity whenever light from their headlights shines on traffic signs. Signs made with retroreflective sheeting materials appear to glow in the dark, making them easier to see. The sign's shape, color, and legend provide important information to motorists as they navigate the nation's highways, streets, and roads at night.

  While signs and markings installed by agencies typically have good retroreflective properties when they are installed, their performance degrades over time due to exposure to the elements. Adequately maintained retroreflective signs are critical to meeting the driver's visibility needs at night because they heighten motorists' understanding of the roadway, enhance traffic flow, and have the potential to improve highway safety. Nighttime visibility of traffic control devices is becoming increasingly important as our population ages. By the year 2020, about one-fifth of the U.S. population will be 65 years of age or older. In general, older individuals have declining vision and slower reaction times. Signs that are easier to see and read at night can help older drivers retain their freedom of mobility and remain independent.

- **LIGHTING:** With age, the lens of the eye becomes less clear and the pupil actually shrinks so less light enters the eye. Eyesight begins to worsen at age 40, and by 60, a driver needs three times more light to see as at 16 years of age. Because more light is required to see the same objects with age, better lighting for both highways and city streets is needed.

- **PAVEMENT MARKINGS:** Brighter road markings—edge markings and other pavement markings—should be retroreflective so drivers can see curbs, lanes, and intersections/crosswalks more easily (to avoid hitting curbs or pedestrians and to stay within lanes). "Run off the road" crashes would be reduced.

- **TRAFFIC SIGNALS:** Larger traffic signal heads—the diameter should be at least eight inches but larger signal heads (12 inches) may be needed in some locations. Back plates for traffic signals (to provide more contrast) also improve visibility because "contrast sensitivity" decreases with age. "All red" periods for traffic signals allow for a margin of error. "No right-turn on red (RTOR)" at an intersection(s) can also improve safety if vehicles turning right at an intersection have to encounter heavy volume along the roadway in which they intend to turn right onto. However, no RTOR may also negatively impact capacity, creating longer queues and longer delays. Utilizing electronic messaging RTOR signs that operate during off-peak hours only could be a solution.

- **FREEWAY EXITS AND ENTRANCES:** Large and clear signs marking exit ("wrong way") and entrance ramps would prevent drivers from making the mistake of going the wrong way on a highway.

- **WORK ZONES:** Work zones are constantly changing environments that challenge all drivers because they don't know what to expect. Large, bright, well-maintained and carefully-placed work zone devices (barrels, cones, etc.), including flashing-arrow panels for lane closures, should be used to help guide drivers.

Crashes occur at work zones because drivers are unprepared for new situations. Work zones will only become more common with the aging of the transportation infrastructure, and older drivers have more difficulty negotiating these unexpected areas.

- **CHANGEABLE MESSAGE SIGNS:** Changeable message signs help drivers understand varying conditions and situations. To be effective, changeable message signs should use short, simple words, easily understood abbreviations, and not exceed two "panels." If more information needs to be conveyed than can be displayed on two panels, additional signs are needed.[14]

NEW TECHNOLOGIES / INNOVATIVE PROJECTS

Below are a few suggested approaches to further address the safety needs of aging road users:

New Technologies

Over the next few decades, technology will continue to revolutionize our way of life. The phenomenon of connecting "everything" through technology is termed the "Internet of Things" (**IOT**).

The key to planning for this IoT future is to establish a network of technology infrastructure that is capable of supporting human needs. This network must provide for the technology infrastructure to be upgraded quickly and efficiently. The impacts, the potential benefits, and the disruptive changes to everyday life as we know it, are just beginning. Here are a few concepts to increase the safety of aging road users.

Safety Reflector

VTT Technical Research Centre (Finland), and the Finnish safety reflector company Coreplast Laitila, have collaborated to create a smart reflector that can be wirelessly controlled via a mobile phone application. When a pedestrian is approaching a dangerous crossing, the reflector—which features sensors, LED lights, wireless charging, and communications—can be made to blink and alert drivers. In the future, the reflector will be able to communicate directly with smart traffic lights or cars to warn, for example, a truck driver who is making a turn that a pedestrian is in the area of a crossing.[15]

Solar-powered In-road Light System

A field study of 100 lighted crosswalks with 427 million vehicle crossings demonstrated that the accident rate was 80 percent less than predicted for uncontrolled, unlit crosswalks. The newest technology to achieve this performance is a solar-powered in-road light system that alerts motorists to the presence of a pedestrian crossing or preparing to cross the street. Lights are embedded in the pavement on both sides of the crosswalk and oriented to face oncoming traffic. In-road warning lights produce a daytime-visible light focused directly in the driver's line of sight clearly indicating a curve, hazard, crosswalk, variable lane, or

[14] *http://newsroom.aaa.com/wp-content/uploads/2011/10/TopRoadImprovements.pdf*

[15] *http://www.smart2zero.com/news/safety-reflector-pedestrians-gets-connected-iot*

lane edge that is ahead. When the pedestrian activates the system, either by using a push-button or through detection from an automated device, the lights begin to flash in unison, warning the motorist that a pedestrian is in the vicinity of the crosswalk ahead. The flashing LEDs shut off after a set period of time, i.e., the time required for a pedestrian to safely cross the street.[16]

Video Recording

New security cameras, launched in China by Intel's Internet of Things Group, are assisting law enforcement agencies in the analysis of vehicle and pedestrian traffic with real-time results. Background footage is automatically removed while pedestrians, vehicles and bicyclists are extracted and categorized in real time. Hour-long videos can be "compressed" to a few minutes, as well as into a smaller file. These devices can assist in prioritizing locations at which solar-powered lighting systems are deployed.[17]

Green Man+

Green Man+ is an initiative by the Land Transport Authority (LTA) of Singapore to address the needs of elderly pedestrians and Persons with Disabilities who may require more time to cross a street. Elderly pedestrians and Persons with Disabilities can expect up to 12 seconds more of green traffic signal time when they make use of signalized pedestrian crossings fitted with the **Green Man+**. This is done by tapping the **Green Man+** card on the reader mounted above the standard push button on the traffic light pole. Once the card reader verifies that it is a valid card, the system will extend green time, which ranges from three to 12 seconds depending on the size of the crossing. With the extension of the crossing time, elderly pedestrians and Persons with Disabilities will be able to complete the crossing at a more comfortable pace. Senior citizens use the **Green Man+** app connected to the Singapore LTA's concession card program, with persons with disabilities receiving their cards via mobile app through one of five designated service organizations.

Source: http://www.ahtc.sg/green-man-by-lta/

Innovative Projects

Complete Streets

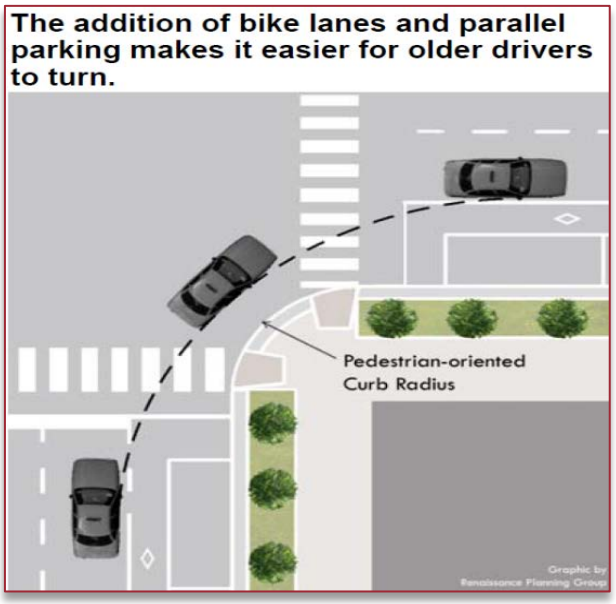
Complete Streets encourages local, regional, and state planning agencies to change policies and procedures so that non-auto forms of travel become a routine part of project development. Complete Streets address the needs of older drivers and pedestrians. Three basic planning and design principles can simplify the road environment and increase its safety:

- **SLOW DOWN:** Reduce vehicle travel speeds in areas where vehicles and pedestrians interact and where older drivers and pedestrians need more time to make decisions and execute changes. Speed matters! This is especially true at intersections where vehicles and pedestrians interact and where older drivers need more time to react to traffic and execute turns. Half of all older driver deaths occur at intersections. Roads can be engineered for slower speeds through changes to curb radii, lane widths, or replacement of typical intersections with roundabouts.

[16] *30TUhttps://www.google.com/webhp?sourceid=chrome-instant&ion=1&espv=2&ie=UTF-8#q=solar%20pedestrian%20crossing%20pavementU30T*

[17] *http://www.intelfreepress.com/news/smart-ip-traffic-cameras/8915/U31T*

- **MAKE IT EASY:** Make the physical layout of transportation systems easy to navigate for older drivers and pedestrians who have lost some of their dexterity. Intersections can be improved by providing travelers with a connected network of lower-speed streets that are easier to maneuver. This type network spreads traffic across many routes rather than channeling it on to just a few arteries. As noted earlier, protected left-turn lanes with green arrows can cut left-turn crashes in half. They should be used where pedestrians are present, and in areas of high traffic volume.



- **ENJOY THE VIEW:** Make it easy for older drivers and pedestrians to notice, read, understand, and respond to visual cues and information. Design treatments can make roads easier to navigate, including: reducing sign clutter; better placement of driveways and medians; use of larger sign fonts; reflective signs and pavement markings; and, improvements to landscaping and lighting.

- **BALANCE COMPETING NEEDS:** Application of focused design principles often requires that engineers balance the competing needs of different road users. While older drivers benefit from a rounded curb, it increases turning speeds and pedestrian crossing distance. One way to address this is to provide bike lanes and parallel parking. This increases the effective turning radius without reducing the safety and comfort of pedestrians. The next graphic provides an example of how road designers can balance the needs of older drivers and pedestrians using a Complete Streets approach.[18]

"It Takes a Village"

"It Takes a Village" was conceived in 2001 by Beacon Hill residents in Boston, Mass. The Village-to-Village Network, a joint partnership between the Beacon Hill Village and Capital Impact Partners, a nationwide non-profit focused on community development, connects each Village through a peer-to-peer network, providing a platform to share ideas with other Villages to strengthen and sustain their organizations. According to the Village-to-Village Network, "145 Villages are operating across the country, in Canada, Australia and the Netherlands."

The Village model was born from the need for reliable, affordable, and readily available services to support the aging population. Villages are non-profit, grass-roots organizations, offering services and programs catered towards their specific members' demographics and to assist with "aging in place." They are membership-driven, usually requiring a recurring fee. This allows the Village to maintain some permanent staff who, along with volunteers, provide health and wellness services for older adult members and provide a transportation service that reflects the needs of the Village members and the characteristics

[18] *http://assets.aarp.org/rgcenter/il/inb167_streets.pdf*

of the surrounding community. The Village administration also organizes social events, trips, and even home repairs—whatever the members request. Transportation is the most-requested service that Villages provide to their members.[19]

CarTrade™

CarTrade™ was developed by ITN (Independent Transportation Network of America) to assist seniors trade-in vehicles that are no longer needed, and, then, apply the money of the trade for rides provided to them by others. As part of the initiative, the Transportation Social Security Program gives volunteers transportation credits in the system when they drive others. The "Roads Scholar Program" encourages volunteers to donate these credits for low-income riders who cannot afford their share of the fare. ITN supplements publicly-funded transportation by making teams of drivers available to seniors 24 hours a day, seven days a week for any purpose, without restriction. Through innovative payment plans, ITN integrates previously inaccessible private resources to help pay for rides, storing the resources in personal transportation accounts, and sending members monthly account statements. Merchants and healthcare providers participate through the "Ride & Shop" and "Healthy Miles" programs. Seniors and people with visual impairments describe ITN as "the next best thing to driving."[20]

Rapid Senior Mentor Program

The Rapid Senior Mentor Program assists those unfamiliar with public transportation to learn a new system. Developed in Grand Rapids, Mich., the program pairs an experienced senior volunteer with any senior who may be new to using fixed-route service. Through the guidance of these peer mentors, new senior passengers learn how easy and safe using transit can be. The mentor plans the route to a destination of the passenger's choosing, and travels with the new passenger. The program also provides the participant a free, ten-ride fare card to start bus travel. All training programs are free to participants, including free rides during training.[21, 22, 23]

STRATEGIES

Several strategies to effect improved safety for aging road users are presented here. But, first it is suggested that in 2018, Road Safety Audits (**RSA**s) be conducted at the "Tier I" assisted living facilities. These should be followed by RSAs at the Tier II and Tier III sites, as resources permit. A Road Safety Audit is a systematic process for checking the safety implications of roadways/intersections. The objective is to minimize future crash occurrence and severity by recommending improvements to correct unsafe conditions. Combining RSA results of the Tier I sites, with the following strategies (which are applicable throughout Miami-Dade County) can create a manageable "laboratory" to implement improvements and measure their success.

- **AUTO USERS MOBILITY AND SAFETY STRATEGY:**
  - ✓ Promote and sponsor research on senior mobility issues;
  - ✓ Plan for an aging mobility and transportation dependent population;
  - ✓ Promote the design and operation of roadways with features that better accommodate the special needs of older drivers and pedestrians;

[19] *https://safety.fhwa.dot.gov/older_users/noteworthy/elderlymobilitynpg.pdf*
[20] *https://safety.fhwa.dot.gov/older_users/noteworthy/elderlymobilitynpg.pdf*
[21] *https://safety.fhwa.dot.gov/older_users/noteworthy/elderlymobilitynpg.pdf*
[22] *http://www.smart2zero.com/news/safety-reflector-pedestrians-gets-connected-iot*
[23] *http://www.intelfreepress.com/news/smart-ip-traffic-cameras/8915/U31T*

- ✓ Develop and/or enhance programs to identify older drivers at increased risk of crashing and take appropriate action;
- ✓ Encourage senior-friendly transportation options;
- ✓ Improve communication and coordination among partners at the state, regional, and local levels to enhance senior mobility; and,
- ✓ Provide recommendations related to senior mobility and safety legislation.

- **PEDESTRIAN AND BICYCLE SAFETY STRATEGY:**
  - ✓ Identify and promote the use of best practices when designing and operating facilities;
  - ✓ Raise awareness of pedestrian and bicycle safety;
  - ✓ Provide recommendations related to pedestrian and bicyclist safety legislation;
  - ✓ Recognize successful pedestrian and bicycle safety initiatives; and,
  - ✓ Determine communities, cities, and agencies for priority assistance.
- **GENERAL INFRASTRUCTURE STRATEGY:**
  - ✓ Broaden the use of currently accepted and proven countermeasures;
  - ✓ Develop, research, and pilot test new countermeasures;
  - ✓ Promote infrastructure safety through outreach and communication;
  - ✓ Promote and sponsor research on infrastructure safety;
  - ✓ Identify and resolve safety data issues; and,
  - ✓ Collaborate with partners to identify and promote opportunities for funding.

EVALUATION AND DATA

It is imperative that this *Aging Road User Safety Plan* be evaluated and revised on a regular basis. Two primary measures to be used to evaluate progress are the changes in the number of traffic-related fatalities and serious injuries that occur on an annual basis.[24, 25]

Both problem identification and continual evaluation require effective record-keeping identifying the frequency and types of older-driver crashes, so countermeasures can be implemented. Effective evaluation requires:

- Supporting detailed analyses of police accident reports involving older drivers;
- Encouraging, supporting, and training localities in process, impact, and outcome evaluation of local programs;
- Evaluating the effectiveness of educational programs by measuring behavior and attitude changes;
- Evaluating the use of program resources and the effectiveness of existing countermeasures for the general public and high-risk populations;
- Ensuring that evaluation results are used to identify problems, plan new programs, and improve existing programs;
- Conducting and publicizing statewide surveys of public knowledge and attitudes about older

[24] *https://www.michigan.gov/documents/msp/SHSP_2013_08_web_412992_7.pdf*

[25] *https://www.michigan.gov/GTSAC*

driver safety; and,

- Maintaining awareness of trends in older driver crashes at the national and state levels and how this might influence activities in Miami-Dade County.[26]

CONCLUSION

Broad trends—from and including 2008–2014—in aging road user crash incidents (in total, as well as injuries and fatalities) are not alarming, but they don't point to specific issues or locations at which improved safety should be afforded to seniors. To gain such insights, analyses of crash patterns for 140+ older adult residential living centers in Miami-Dade County were conducted. As a result, it is suggested that, in 2018, Road Safety Audits (RSAs) be conducted at five assisted living facilities: Vivian Villas, Joe Moretti II, Buena Vista Apartments, Hialeah Residence, and Jasmine. These should be followed by RSAs at another 21 sites, as resources permit. These steps, and other measures/strategies cited throughout this report, will bring to the aging road user information and improved conditions that allow them to use the roads in Miami-Dade County safely and with peace of mind.

[26] *https://safety.fhwa.dot.gov/older_users/noteworthy/elderlymobilitynpg.pdf*

APPENDIX A

Abstracts

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Enhanced Mobility for an Aging Population

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Florida Crash and Citation Reports and Statistics (Abstract 2 of 2)

Florida Department of Transportation: 2017 Highway Safety Plan

Florida Department of Transportation: Aging Road Users

Florida Department of Transportation: Data on Aging Drivers

Florida Driver Licensing Laws for Seniors

Florida Grand Driver: How Aging Affects Driving

Florida Leads Nation In Most Dangerous Metro Areas for Preventable Pedestrian Deaths

Georgia's Older Driver Safety Program (Georgia Department of Public Health)

Georgia's Older Driver Safety Program (Georgia Governor's Office of Highway Safety)

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Hanging Up The Keys?

Helpful Facts for Aging Drivers: Thinking About Giving Up Your Driver License?

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Mobility for Minnesota's Aging Population

National Center for Statistics and Analysis (NCSA), an office of the National Highway Traffic Safety Administration, 2017 Crash Stats

North American Conference on Elderly Mobility – Noteworthy Practices Guide: *Adaptive LED Lighting in New Zealand*

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North American Conference on Elderly Mobility – Noteworthy Practices Guide: *ITNAmerica*

North American Conference on Elderly Mobility – Noteworthy Practices Guide: *It Takes a Village*

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Older Driver Safety – Highway Safety Program Guideline No. 13

Older Drivers – 7 Tips for Driver Safety

Older Drivers in the Workplace: How Employers and Workers Can Prevent Crashes

Older drivers – There are more drivers 70 and over today, but they crash less often than they used to.

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Planning Complete Streets for an Aging America

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Seniors Continue Driving Despite Declining Physical Abilities, Nearly All Would Consider Stopping for Right Reason

Seniors: Evaluate Your Driving Ability

Smart Features for Older Drivers

Smart Vehicle Features for Older Drivers

Straight Talk For Mature Drivers: Maintaining Your Vehicle

Straight Talk for Mature Drivers: Meeting the Challenge

The Definition of "OLDER"

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Traffic Safety Facts – 2012 Data

Understanding Older Drivers: An Examination of Medical Conditions, Medication Use, and Travel Behaviors

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Miami-Dade County MPO Aging Road Users Safety Plan

Topic: 2015 Data Released in 2017 Fatalities in Traffic Crashes by State and Age Group, (Abstract 1 of 2)

Source: https://crashstats.nhtsa.dot.gov/Api/Public/ViewPublication/812372

Author(s): National Highway Traffic Safety Administration

Date: 2017

Abstract:

Fatalities in Traffic Crashes by State and Age Group, 2015

State	Total Fatalities	Age 65+			Age Group							
		Fatalities 65+	Percentage of Total	Rate per 100,000 Population	<40	40–64	65–69	70–74	75–79	80–84	85+	Unknown
Alabama	849	125	14.7%	16	426	295	44	22	11	22	26	3
Alaska	65	13	20.0%	18	32	20	2	4	4	3	0	0
Arizona	893	165	18.5%	15	388	336	43	41	24	31	26	4
Arkansas	531	84	15.8%	18	255	190	29	17	12	10	16	2
California	3,176	494	15.6%	10	1,582	1,093	152	94	83	72	93	7
Colorado	546	94	17.2%	13	251	201	28	26	13	12	15	0
Connecticut	266	44	16.5%	8	117	105	14	10	7	3	10	0
Delaware	126	18	14.3%	11	56	52	6	5	3	2	2	0
Dist of Columbia	23	4	17.4%	5	11	8	1	1	1	1	0	0
Florida	2,939	539	18.3%	14	1,292	1,075	148	109	89	87	106	33
Georgia	1,430	260	18.2%	20	676	492	88	62	55	23	32	2
Hawaii	94	15	16.0%	6	42	34	1	3	1	6	4	3
Idaho	216	37	17.1%	15	99	80	13	9	6	6	3	0
Illinois	998	191	19.1%	10	471	334	60	31	27	22	51	2
Indiana	821	148	18.0%	15	368	305	35	31	32	25	25	0
Iowa	320	73	22.8%	15	141	106	20	11	8	15	19	0
Kansas	355	66	18.6%	15	165	124	26	9	8	9	14	0
Kentucky	761	118	15.5%	18	363	279	34	35	18	19	12	1
Louisiana	726	95	13.1%	15	377	252	31	23	15	12	14	2
Maine	156	34	21.8%	14	67	55	4	7	5	10	8	0
Maryland	513	89	17.3%	10	239	184	25	17	15	14	18	1
Massachusetts	306	70	22.9%	7	147	87	23	17	13	10	7	2
Michigan	963	183	19.0%	12	455	325	45	41	28	26	43	0
Minnesota	411	99	24.1%	12	165	147	27	17	21	15	19	0
Mississippi	677	94	13.9%	21	337	246	35	23	10	17	9	0
Missouri	869	166	19.1%	17	412	291	44	38	28	30	26	0
Montana	224	40	17.9%	22	117	67	18	9	3	3	7	0
Nebraska	246	35	14.2%	13	123	88	9	3	6	8	9	0
Nevada	325	59	18.2%	14	159	107	14	15	14	8	8	0
New Hampshire	114	23	20.2%	11	43	48	4	4	3	5	7	0
New Jersey	562	128	22.8%	10	241	193	34	24	23	19	28	0
New Mexico	298	36	12.1%	11	168	94	15	5	9	4	3	0
New York	1,121	251	22.4%	8	482	382	55	52	39	39	66	6
North Carolina	1,379	269	19.5%	18	632	477	70	53	54	47	45	1
North Dakota	131	17	13.0%	16	76	38	4	6	1	2	4	0
Ohio	1,110	224	20.2%	12	510	375	60	52	52	24	36	1
Oklahoma	643	110	17.1%	19	315	218	26	25	25	26	8	0
Oregon	447	79	17.7%	12	186	182	34	17	12	8	8	0
Pennsylvania	1,200	242	20.2%	11	530	427	75	39	45	41	42	1
Rhode Island	45	5	11.1%	3	27	13	1	2	1	0	1	0
South Carolina	977	133	13.6%	17	489	355	45	29	27	16	16	0
South Dakota	133	21	15.8%	16	54	58	8	6	4	1	2	0
Tennessee	958	181	18.9%	18	427	350	61	42	34	22	22	0
Texas	3,516	462	13.1%	14	1,862	1,173	132	116	91	67	56	19
Utah	276	53	19.2%	17	137	86	15	15	6	8	9	0
Vermont	57	12	21.1%	11	19	26	5	2	2	0	3	0
Virginia	753	149	19.8%	13	319	282	50	32	25	24	18	3
Washington	568	124	21.8%	12	261	183	27	33	21	19	24	0
West Virginia	268	44	16.4%	13	121	103	14	11	7	3	9	0
Wisconsin	566	139	24.6%	15	242	185	40	19	25	20	35	0
Wyoming	145	11	7.6%	13	79	55	5	2	3	0	1	0
U.S. Total	35,092	6,165	17.6%	13	16,553	12,281	1,799	1,316	1,069	916	1,065	93
Puerto Rico	309	64	20.7%	10	146	96	9	22	12	15	6	3

Source: FARS 2015 ARF. Population: Bureau of the Census.

Miami-Dade County MPO Aging Road Users Safety Plan

Topic: 2015 Data Released in 2017 of Fatalities in Traffic Crashes by State and Age Group (Abstract 2 of 2)

Source: https://crashstats.nhtsa.dot.gov/?_ga=1.169131041.1636299236.1487088386#/PublicationList/32

Author(s): National Highway Traffic Safety Administration

Date: 2017

Abstract:

This is the second of two abstracts dealing with 2017 crash date of older drivers. Key findings are presented here.

Key Findings

- In 2015 there were 6,165 people 65 and older killed in traffic crashes in the United States, 18 percent of all traffic fatalities.
- Older drivers made up 18 percent of all licensed drivers in 2015 compared to 15 percent in 2006.
- The population of people 65 and older increased by 29 percent from 2006 to 2015; however, driver fatalities in crashes involving older drivers increased by 3 percent over this period.
- From 2006 to 2015 older male driver fatalities increased by 10 percent compared with an 11 percent decrease in older female driver fatalities.
- In 2015 most traffic fatalities in crashes involving older drivers occurred during the daytime (74%), on weekdays (70%), and involved other vehicles (67%). This is an increase compared to all fatalities, which was 49 percent during the daytime, 59 percent on weekdays, and 44 percent involving another vehicle.
- In 2015 passenger vehicle occupants 65 and older involved in fatal traffic crashes were more likely to be restrained.
- For older pedestrians, 68 percent of fatalities in 2015 occurred at non-intersection locations.
- Among the older population, the traffic fatality rate per 100,000 population in 2015 was highest for the 85-and-older age group.

Table 5
Driver Involvement in Fatal Traffic Crashes by State and Age Group, 2015

State	Total Drivers Involved	Age 65+			Age Group							
		Drivers 65+	Percentage of Total	Rate per 100,000 Licensed Drivers*	<40	40–64	65–69	70–74	75–79	80–84	85+	Unknown
Alabama	1,180	144	12.2%	18	575	440	57	36	14	21	16	21
Alaska	88	13	14.8%	19	47	26	3	3	5	2	0	2
Arizona	1,223	169	13.8%	20	541	453	50	42	29	31	17	60
Arkansas	732	92	12.6%	21	334	300	31	25	13	12	11	6
California	4,382	438	10.0%	11	2,220	1,570	165	96	67	57	53	154
Colorado	787	99	12.6%	15	372	305	30	30	16	11	12	11
Connecticut	370	43	11.6%	9	177	145	19	9	5	5	5	5
Delaware	189	18	9.5%	12	86	79	10	2	2	2	2	6
Dist of Columbia	30	1	3.3%	2	13	13	0	1	0	0	0	3
Florida	4,137	581	14.0%	18	1,966	1,458	168	140	105	86	82	132
Georgia	2,041	293	14.4%	25	948	763	115	68	51	30	29	37
Hawaii	125	17	13.6%	10	66	42	4	9	1	3	0	0
Idaho	280	41	14.6%	19	136	103	14	12	5	6	4	0
Illinois	1,357	205	15.1%	14	644	480	69	38	33	23	42	28
Indiana	1,163	149	12.8%	18	533	459	46	35	27	22	19	22
Iowa	421	66	15.7%	15	184	170	16	16	10	14	10	1
Kansas	465	71	15.3%	19	204	188	26	15	11	6	13	2
Kentucky	1,070	126	11.8%	22	506	427	44	33	20	16	13	11
Louisiana	998	113	11.3%	18	502	363	44	25	21	11	12	20
Maine	190	31	16.3%	14	89	70	7	8	6	5	5	0
Maryland	716	109	15.2%	15	307	282	40	23	15	13	18	18
Massachusetts	409	64	15.6%	7	210	132	21	19	13	6	5	3
Michigan	1,435	178	12.4%	13	711	519	54	48	30	20	26	27
Minnesota	589	101	17.1%	15	257	224	32	18	21	15	15	7
Mississippi	872	100	11.5%	26	428	329	39	24	16	13	8	15
Missouri	1,224	185	15.1%	23	580	428	59	41	36	30	19	31
Montana	267	44	16.5%	28	137	86	18	11	6	3	6	0
Nebraska	328	35	10.7%	13	170	121	11	4	4	11	5	2
Nevada	453	51	11.3%	15	228	164	17	12	10	5	7	10
New Hampshire	142	27	19.0%	13	52	62	9	7	2	4	5	1
New Jersey	756	122	16.1%	11	344	267	38	29	20	14	21	23
New Mexico	383	41	10.7%	15	202	129	17	8	11	2	3	11
New York	1,499	217	14.5%	10	671	570	66	59	27	26	39	41
North Carolina	1,935	283	14.6%	22	887	746	95	60	54	41	33	19
North Dakota	166	15	9.0%	17	87	64	6	4	0	2	3	0
Ohio	1,630	252	15.5%	16	731	623	77	61	51	30	33	24
Oklahoma	886	116	13.1%	23	445	315	35	27	22	22	10	10
Oregon	596	94	15.8%	16	243	253	44	23	11	9	7	6
Pennsylvania	1,662	277	16.7%	15	723	642	100	65	39	47	26	20
Rhode Island	58	5	8.6%	3	41	11	1	1	1	0	2	1
South Carolina	1,399	156	11.2%	21	686	540	67	32	30	16	11	17
South Dakota	167	22	13.2%	16	68	77	8	6	5	2	1	0
Tennessee	1,347	215	16.0%	23	609	512	91	46	36	20	22	11
Texas	4,836	496	10.3%	19	2,511	1,717	181	126	95	54	40	112
Utah	415	58	14.0%	21	209	145	19	16	7	10	6	3
Vermont	69	11	15.9%	9	33	25	4	2	2	0	3	0
Virginia	1,015	170	16.7%	16	447	383	63	39	26	27	15	15
Washington	788	120	15.2%	13	380	276	31	33	21	18	17	12
West Virginia	355	47	13.2%	17	170	134	19	13	6	2	7	4
Wisconsin	797	148	18.6%	19	354	286	47	29	24	26	22	9
Wyoming	191	21	11.0%	26	86	84	8	3	6	2	2	0
U.S. Total	48,613	6,490	13.4%	16	23,150	18,000	2,235	1,532	1,088	853	782	973
Puerto Rico	395	42	10.6%	18	217	118	13	12	8	7	2	18

Source: FARS 2015 ARF. Licensed Drivers: Federal Highway Administration.

Miami-Dade County MPO Aging Road Users Safety Plan

Topic: 2017–2018 State of Michigan *Strategic Highway Safety Plan*

Source: https://www.michigan.gov/documents/msp/SHSP_2013_08_web_412992_7.pdf and www.michigan.gov/GTSAC

Author(s): Governor's Traffic Safety Advisory Commission

Date: December, 2016

Abstract:

2017-2018 SHSP GOALS

As substantial progress has been made toward the goals from the 2013 SHSP, revised goals were established for 2017-2018. These goals are as follows:

• Prevent traffic fatalities from reaching 967 in 2018. • Prevent serious traffic injuries from reaching 4,600 in 2018.

EMPHASIS AREAS

To facilitate improvements of this magnitude, a well-integrated comprehensive safety program is required that focuses upon those areas where resources can be crashes, injuries, and fatalities. To this end, the 2017-2018 SHSP was focused on addressing traffic safety issues within four broad emphasis areas.

1. High-Risk Behaviors; 2. At-Risk Road Users;3. Engineering Infrastructure; and, 4. System Administration

Within these emphasis areas, action teams were created to provide more targeted guidance on area-specific safety issues. Structuring these action teams under the broad umbrella of these four emphasis areas created efficiencies given the degree of overlap among these teams.

HIGH-RISK BEHAVIORS

Despite continuous efforts that have improved the safety of roadways, that safety is ultimately reliant upon road-user behavior. Research has shown that the vast majority of crashes are due to errors by these users. Fortunately, many of these errors are ultimately preventable and strategies to encourage the safe behavior of road users are integral to highway safety improvement efforts. At the statewide level, implementation strategies are guided by three action teams:

• Distracted Driving; • Impaired Driving • Occupant Protection

AT-RISK ROAD USERS

Prior research and crash statistics illustrate that there are specific groups of road users who are overrepresented in traffic crashes, injuries, and fatalities. As such, understanding the contributing factors that lead to this overrepresentation allow for the identification of appropriate strategies and countermeasures to address these at-risk road users.

The action teams that fall under this emphasis area are:

• Commercial Motor Vehicle Safety• Motorcycle Safety• Pedestrian and Bicycle Safety• Senior Mobility and Safety• Drivers Age 24 and Younger

ENGINEERING INFRASTRUCTURE

Engineering infrastructure is one aspect of traffic safety where involved stakeholders can exert direct control. Geometric design elements, traffic control devices, and targeted policies and programs allow for countermeasures aimed at encouraging or discouraging specific behaviors among road users. Under this emphasis area, guidance as to the state-of-the-art and state-of-the-practice is provided by one action team: • Traffic Safety Engineering design elements, traffic control devices, and targeted policies and programs allow for countermeasures aimed at encouraging or discouraging specific behaviors among road users. Under this emphasis area, guidance as to the state-of-the-art and state-of-the-practice is provided by one action team: • Traffic Safety Engineering

STRATEGIES

• Conduct effective communication and outreach activities. • Implement effective low-cost roadway countermeasures.

• Explore improvements in data collection on driver distractions involved in crashes. • Encourage enforcement of the state's texting law. • Monitor development of new countermeasures and identify those that could be implemented in Michigan. • Monitor national pilot projects related to distracted driving.• Provide recommendations related to distracted driving legislation.

Miami-Dade County MPO Aging Road Users Safety Plan

Topic: AAA – Driver Improvement Courses for Seniors/Roadwise Driver

Source: http://seniordriving.aaa.com/maintain-mobility-independence/driver-improvement-courses-seniors/

Author(s): American Automobile Association

Date: 2017

Abstract:

Driving is a skill that can and should be continually improved. AAA's Roadwise Driver™ is a course that can be taken online or in a classroom to help senior drivers keep driving knowledge fresh and get the most out of your vehicle, while reducing risk to the driver, passengers and others on the road. The course covers topics like:

- Extending a Safe Driving Career
- Distractions, Drowsiness, Aggressive Driving & Road Rage
- Managing Visibility, Time & Space
- Alcohol & Medications
- Comfort & Safety Tips

Although SeniorDriving.AAA.com contains many driving tips, taking a comprehensive driving improvement course will ensure that you have the most up-to-date driving techniques and understand the latest vehicle technologies.

As a person ages, it is important for senior drivers to know and understand how to adjust for slower reflexes, weaker vision and other changes. Some of the benefits related to taking AAA's Roadwise Driver™ improvement course are:

- Potential discount on insurance premiums.
- Learning the latest in vehicle technology, such as adaptive cruise control and lane-departure warning systems and how to use them.

As a group, senior drivers are at a higher risk of having a serious collision per mile driven than any other age group except for those under age 25. Drivers in their late 70s have about the same number of injury-involved crashes per mile driven as drivers in their early 20s. And driver's age 85 and older are injured or killed in crashes at a higher rate than any other age group. This is due primarily to increased fragility that comes with age. Older senior drivers are generally less able to withstand the forces of a crash, so they are more likely to become injured, compared with younger, stronger and fitter individuals. Older adults also don't typically recover from injuries as quickly as they once did

Miami-Dade County MPO Aging Road Users Safety Plan

Topic: AAA – Roadwise RX

Source: http://seniordriving.aaa.com/understanding-mind-body-changes/medical-conditions-medications/roadwise-rx/

Author(s): American Automobile Association

Date: 2017

Abstract:

Eight out of ten senior drivers age 65 and older take medications on a regular basis. And despite high prescription and over-the-counter medication use, almost half of senior drivers using medications have never talked with their health care providers about how the drugs might affect their safe driving abilities.

Roadwise Rx is a free, confidential tool developed by the AAA Foundation for Traffic Safety that adults can use to explore how medications may affect safe driving.

How it works

Roadwise Rx offers a way for you to record all medications in one central location. It also provides customized feedback on how prescription and over-the-counter drugs, herbal supplements and foods, as well as their interactions with each other, can affect safe driving.

Launch Roadwise Rx

Enter your medications
Simply begin typing in the name of the medication, prescription or over-the-counter, by its brand or generic name. Roadwise Rx will provide you a list of matching medications from which you can select your medication with one quick click. Users can enter multiple medications, as well as herbal supplements.

Learn how the medications you take affect your driving
While most medications do not interfere with the ability to drive safely, some common medications can have side effects that impact safety behind the wheel. Drowsiness, confusion, and blurred vision are examples of side effects that directly impact your ability to drive safely.

Roadwise Rx highlights the potential driving effects of your medications, in addition to showing users the potential interactions their medications may have with other medications or with common foods.

Take your confidential results to your doctor

Miami-Dade County MPO Aging Road Users Safety Plan

Topic: AAA – Top Ten Ways to Make Roads Safer

Source http://newsroom.aaa.com/wp-content/uploads/2011/10/TopRoadImprovements.pdf

Author(s): AAA Michigan Road Improvement Demonstration Project as well as the Federal Highway Administration guidelines.

Date: July, 2003

Abstract:

The following measures will help make the roads safer for all drivers, but especially baby-boomers and seniors.

1. SIGNS: Larger, simpler, and better-placed guide signs and street signs—larger lettering (1 inch/33 ft); retroreflective materials; placed well in advance of the "event" (such as an intersection or exit ramp); confusing & multiple signs need to be eliminated. Signs should be placed higher, overhead, and in advance to announce upcoming streets.

2. CROSSWALKS: Crosswalks and pedestrian areas in general can be made safer—retroreflective pavement markings to increase visibility; countdown signals so pedestrian knows the amount of time needed to safely cross; longer walk times for slower paced pedestrians (3 ft/second); easier to reach and larger buttons, pedestrian signal plaques (to help pedestrians properly understand signals). Pedestrian refuge islands at large streets also help.

3. LEFT-TURN LANES: Dedicated, protected left-turn lanes and phases when there is a traffic signal, preferably "off-set"—left turns at intersections are one of the most dangerous traffic conditions for seniors. Having a signalized intersection with an arrow and a left turn lane (rather than leaving it to the judgment of the driver to determine when there is a sufficient break in traffic) will reduce the number of dangerous "right angle" collisions. "Offset" left turn lanes also improve visibility because the car going in the opposite direction doesn't block you.

4. STOP SIGNS: Some intersections do not require a signal light, but if they have stop signs, their safety can be improved. The minimum size of stop signs, regardless of the speed, should be 30-inches to help deal with the reduced visual acuity in the older population; the retro-reflectivity of stop signs must be maintained, not only so they can be read, but so they will be noticed; STOP AHEAD signs are useful in situations where drivers appear not be noticing the stop signs - and since older drivers are often cited for "failure to yield to a traffic control device" this does seem to be a problem. In special cases, lines or rumble strips across the roadway before a stop sign can help alert drivers.

5. LIGHTING: Better lighting overall—with age, the lens of the eye becomes less clear and the pupil actually shrinks so less light enters the eye. Eyesight begins to worsen at age 40 and by 60, a driver needs 3 times more light to see as at 16. Since more light is required to see the same objects as we age, better lighting for both highways and city streets are needed

6. PAVEMENT MARKINGS: Brighter road markings—edge markings and other pavement markings should be retroreflective so drivers can see curbs, lanes, and intersections/crosswalks more easily (to avoid hitting curbs or pedestrians and to stay within lanes). "Run off the road" crashes would be reduced.

7. TRAFFIC SIGNALS: Larger traffic signal heads—the diameter should be at least 8 inches but larger may be needed (12 inches) in some locations. Back plates (to provide more contrast) for traffic signals also improve visibility since our contrast sensitivity decreases with age. "All red" periods for traffic signals allow for a margin of error.

8. FREEWAY EXITS & ENTRANCES: Large, advance, and clearer signs marking exit (wrong way) ramps and entrance ramps would prevent vehicles from the dangerous mistake of going the wrong way on a highway.

9. WORK ZONES: Work zones are constantly changing environments that challenge all drivers because they don't know what to expect; large, bright, well maintained and carefully placed work zone devices (barrels, cones, etc.) including flashing arrow panels for lane closures should be used to help guide drivers through these difficult situations. Crashes occur at work zones because drivers are unprepared for new situations. Work zones will only become more common with the aging of the transportation infrastructure, and older drivers have more difficulty negotiating these unexpected areas.

10.CHANGEABLE MESSAGE SIGNS: Changeable message signs help drivers understand changing conditions and situations (which affect us more as we age); to be effective, changeable message signs should use short simple words, easily understood abbreviations and not exceed two "panels". If more information needs to be conveyed than can be displayed on two panels, additional signs are needed.

Miami-Dade County MPO Aging Road Users Safety Plan

Topic: AARP – What Is a Formal Driving Assessment?

Source: http://www.aarp.org/home-family/getting-around/driving-resource-center/info-08-2013/formal-driving-assessment.html

Author(s): AARP Driving Resource Center

Date: September, 2013

Abstract: A comprehensive driving evaluation by a trained professional is an objective process for determining:

- Whether you have the skills and abilities to drive safely;
- What corrections (if any) are needed;
- What specific steps you can take to become a better, safer driver;
- What on-the-road training may be necessary to improve your skills.

Formal driving evaluations generally take two to three hours. They usually consist of a clinical evaluation (including a variety of cognitive, visual and physical assessments) and an on-the-road test with oral feedback or a written report on the results. Programs may vary somewhat; some programs may also use a driving simulator as part of their evaluation process. There may be fees associated with some of these assessments.

Reasons to Consider a Formal Driving Assessment –

- If you feel that your driving continues to be fine, you may appreciate getting a professional opinion to verify your confidence
- .If you feel like you are not seeing as well as you once did, or are experiencing slowed reaction time or a loss of flexibility, you may benefit from learning how these changes could affect your driving and discover new strategies or tips to keep your driving skills sharp.
- If you have one or more medical conditions or physical limitations that may lead to a loss of range of motion, flexibility or strength in your arms or legs, you may benefit from an evaluation. It may also provide you with a plan for rehabilitation and/or assistive equipment, if appropriate.
- If you have experienced a loss of peripheral vision or depth perception or have another vision-related change, a driving evaluation can help.
- If you have been told that you should stop or limit driving — but you disagree — getting an opinion from an occupational therapist who is also a trained driver rehabilitation specialist may be beneficial. You will undergo a thorough evaluation process that takes a complete picture of your driving skills and abilities and your potential for improvement.
- If you would like to resume driving after a period of not driving, you could benefit from getting a driving "checkup." For example if you stopped driving after an illness such as a stroke, an evaluation could show you what effects, if any, the stroke had on your ability to drive safely. It could also point out strategies, rehabilitation therapies or special equipment that could help you drive safely again.
- If a lifestyle change such as a recent move or illness affects where or how much you drive you may benefit from a driving evaluation to sharpen skills and build confidence.
- If you have been diagnosed with dementia or Alzheimer's disease but are in the early stages, you may not need to stop driving immediately. A comprehensive driving evaluation can determine whether you can continue to drive safely for the time being. It can also help you make plans for other ways to travel in the future.

Benefits of a Formal Driving Assessment -- A formal driving assessment can provide many benefits: Behind-the-wheel practice to reduce or eliminate any problems or unsafe behaviors;

- Behind-the-wheel practice to reduce or eliminate any problems or unsafe behaviors;
- Flexibility exercises to keep you in good driving shape;
  - ✓ Counseling and advice on how to meet your specific transportation needs if driving is found to be unsafe. Professional prescriptions and instructions for assistive equipment that can help you drive longer. These include: 1. Pedal extenders; 2. Panoramic rear and side view mirrors; 3. Seat lifts to aid in getting into and out of the car; 4. Spinner knobs for steering wheel or other hand controls; 5. Seat belt extenders.

Resources for Formal Assessments -- There may be several community resources available to help you conduct a more formal assessment available to help you conduct a more formal of your driving. Your local hospital could be a good source for finding these resources:

- Occupational therapy driver rehabilitation specialists Programs sponsored by your county or city office on aging
- Veterans Administration and other rehabilitation facilities
- Your state's bureau or department of motor vehicles or motor vehicle administration, which may have special programs or special licensing options.

Miami-Dade County MPO Aging Road Users Safety Plan

Topic: Action Plan for an Age-Friendly Miami-Dade (Miami-Dade Age-Friendly Initiative, 2015)

Source: http://www.marc.org/Community/KC-Communities-for-All-Ages/PDFs/Miami-Dade_AFI-Action-Plan-Booklet.pdf

Author(s): Miami-Dade County *Action Plan Work Group*

Date: 2015

Abstract:

The Miami---Dade Age---Friendly Initiative was developed In order to take advantage of the opportunities and meet the challenges presented by the growing number of older adults in South Florida. Initiative is a partnership between several agencies in Miami---Dade County and our lead agencies—AARP Florida, Alliance for Aging, Health Foundation of South Florida, Miami---Dade County, United Way of Miami---Dade and Urban Health Partnerships. The ability to readily access desired destinations is vital to independent living; transportation is a cross---cutting issue and one of the most important components of active aging. One way to overcome transportation issues is by implementing Complete Streets principles, which provide appropriate infrastructure for all modes and all ages and abilities.

The model for an age---friendly community includes multi---sector involvement and incorporates all aspects of the natural, built and social environment.[6] These domains include: Outdoor Spaces and Buildings; Transportation; Housing; Social Participation; Respect and Social Inclusion; Civic Participation and Employment; Communication and Information; and Community Support and Health Services. The specific transportation strategies of the plan are presented below.

Specific Transportation - Strategies & Actions

1. **ACTIVE TRANSPORTATION & SAFE STREETS *Priority for Year 1**
   Advocate and implement streets that are safe for all modes, users and mobility.

   - **Standards, Policies and Planning**
     - ✓ Develop model policies and model plans for adoption by municipalities o Advocate for adoption of policies and plans at the local level o Ensure all ages and abilities are considered in all aspects of policies and plans.

   - **Safe Routes to Age in Place**
     - ✓ **Engineering:**
       - Design the physical environment to create safer, more convenient connections to the community and to local resources and services.
       - Conduct an audit of routes within communities commonly used by older adults in order to obtain an accurate understanding of the difficulty of certain routes and what can be to make them better and safer.
       - Conduct audits together with local nonprofits, planning organizations, and older adult residents.
     - ✓ **Education:**
       - Increase knowledge about transportation safety and how it can affect access to healthy food, recreational opportunities, healthcare, open spaces, libraries, and employment and economic opportunities in order to allow older adults to live in community confidently and independently for as long as possible.
       - Educate community members about 3---1---1 system that can be used to report any hazards or issues ! Promote safety programs for older adults such as the Alliance for Aging's Safe Steps/Pasos Seguros program
     - ✓ **Encouragement:**
       - Ensure that laws and policies, such as driving and pedestrian laws, keep older adults safe and help improve the environment
       - Utilize audits and crash data to prioritize areas for Complete Streets modifications.

- ✓ **Enforcement:**
  - Ensure that laws and policies, such as driving and pedestrian laws, keep older adults safe and help improve the environment
- ✓ **Evaluation:**
  - Measure the results (outcomes) of the efforts or steps taken as part of this program.

- **Improve Crosswalks**
  - ✓ **Identify** the most dangerous crossings for older adults within communities utilizing existing data (local studies, crash data or walking audits) to identifying intersections in need of change
  - ✓ **Work** with Miami---Dade Public Works to expand the crosswalk time at intersections that dangerous and heavily used by older adults Implement additional crosswalk improvements where needed such as shorter crossings, flashing lights, and audible crosswalks.

2. MOTORIZED AND ON-DEMAND TRANSPORTATION

Ensure older adults have the opportunity to drive safely as well as have knowledge of and access to on-demand transportation services.

- **Education**
  - ✓ Promote safe---driver education and resources Develop a usable list of all on---demand services with contact information, eligibility information and cost within the county or in individual municipalities
- Promote current on---demand services to older adults as alternatives to driving **Entrepreneurial Programs**
  - ✓ Encourage new, entrepreneurial programs that work towards an unmet need aimed at older adults. A program in which older adults could request a driver at a particular time of their choosing in order to travel to a location of their choosing
  - ✓ Provide grants, stipends or "hack---a---thon" events to develop ideas, cultivate individuals to champion those ideas and develop programming.

3. BETTER ACCESS AND QUALITY OF TRANSIT STOPS **Ensure that older adults have knowledge of resources for transit and how to use them, as well as have better access to quality transit stops.**

- **Education**
  - ✓ Promote and Educate the community about the Golden Passport – a free card available to eligible Miami---Dade residents for free public transit throughout the county.
  - ✓ Develop short educational trips for groups of older adults to learn to utilize public transit with a trip to local cultural centers to encourage use.
- **Research and Focus Groups**
  - ✓ Develop focus groups and research to understand the needs of older adults using public transit, especially those who use buses, in order to gain information about the gaps and needed amenities.
- **Improve Quality of and Access to Stops**
  - ✓ Advocate for programs or plans to place public transit, especially bus stops, at corners or near crosswalks, with adequate seating (height and quality) and sufficient cover (from rain and sun) so that older adults can easily and comfortably access them.
  - ✓ Advocate for additional public transit stops in areas to serve older adults' needs and connect them to libraries, public spaces and parks.

Miami-Dade County MPO Aging Road Users Safety Plan

Topic: **Age and Driving, Safety Tips and Warning Signs for Older Drivers**

Source: https://www.helpguide.org/articles/aging-well/age-and-driving-safety-tips.htm

Author(s): Joanna Saisan, M.S.W., Monika White, Ph.D., and Lawrence Robinson.

Date: Last updated: December 2016.

Abstract:

As we age, it's normal for our driving abilities to change. By reducing risk factors and incorporating safe driving practices, many of us can continue driving safely long into our senior years. But we do have to pay attention to any warning signs that age is interfering with our driving safety and make appropriate adjustments. Even if you find that you need to reduce your driving or give up the keys, it doesn't mean the end of your independence. Seeking alternative methods of transportation can offer health and social benefits, as well as a welcome change of pace to life.

Understanding how aging affects driving

Everyone ages differently, so there is no arbitrary cutoff as to when someone should stop driving. However, older adults are more likely to receive traffic citations and get into accidents than younger drivers. In fact, fatal crash rates rise sharply after a driver has reached the age of 70. What causes this increase? As we age, factors such as decreased vision, impaired hearing, or slowed motor reflexes may become a problem. You may have a chronic condition that gradually worsens with time, or you may have to adjust to a sudden change, such as a stroke.

Safety tips for older drivers

- Stay on top of your health
  - ✓ Get your eyes checked every year
  - ✓ Have your hearing checked annually
  - ✓ Talk with a doctor about the effects that ailments or medications
  - ✓ Get plenty of sleep.
- Find the right car and any aids needed for driving
- Drive defensively
- Know your limitations
- Listen to the concerns of others

Know the warning signs of unsafe driving

- Issues with health
  - ✓ Conflicting medications
  - ✓ Eyesight problems
  - ✓ Hearing problems
  - ✓ Problems with reflexes and range of motion
  - ✓ Problems with memory

Know your transportation alternatives

- Public transportation
- Ride sharing
- Community shuttles/senior transit.
- Taxis or private drivers
- Walking/cycling
- Motorized wheelchair

Benefits of not driving

- Save money on the cost of car ownership
- Improve your health
- Expand your social circle
- Appreciate the change of pace

How to talk to a loved one about driving concerns

- Be respectful
- Give specific examples
- Find strength in numbers
- Help find alternatives
- Understand the difficulty of the transition

Miami-Dade County MPO Aging Road Users Safety Plan

Topic: Age Demographics, Statistics for U.S. Counties Map

Source: http://www.governing.com/gov-data/age-65-older-population-map-usa-counties.html

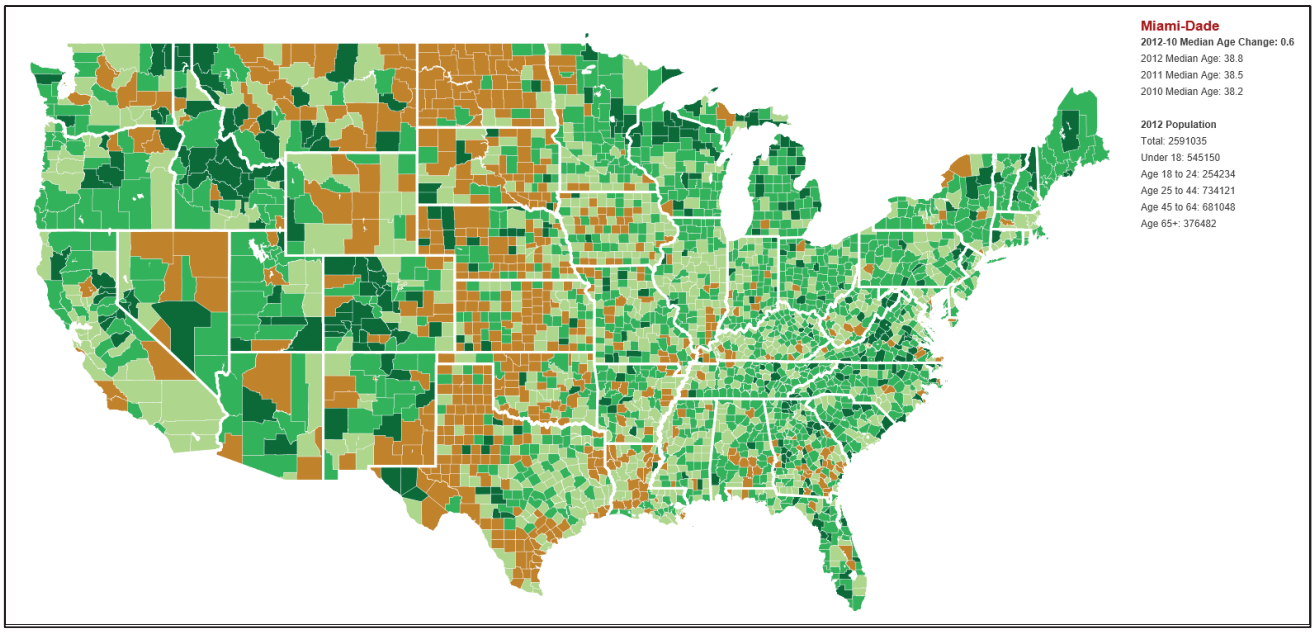
Author(s): Governing/The States and Localities

Date: 2010 -2012 Data

Abstract: **Miami-Dade**

2012 Population
Total: 2591035
Under 18: 545150
Age 18 to 24: 254234
Age 25 to 44: 734121
Age 45 to 64: 681048
Age 65+: 376482

2012-10 Median Age Change: 0.6
2012 Median Age: 38.8
2011 Median Age: 38.5
2010 Median Age: 38.2



Miami-Dade County MPO Aging Road Users Safety Plan

Topic: Age-Friendly Business District Information

Source: https://agefriendlymiami.org/project/age-friendly-business-district/

Author(s): AGE FRIENDLY INITIATIVE Miami-Dade County

Date: District was started in 2013

Abstract:

An "Age-Friendly Business District" has helped businesses become more aware of older patrons, educating stores on how to be age-friendly, and how to retain older employees.

This initiative has been implemented through a five "E" model including:

- **Engineering** – assessment and visioning of a physical environment designed to create safer, more convenient connections for customers to the business community.
- **Education** – increase knowledge about the benefits of a Business District.
- **Encouragement** – promotion of the Business District and get business to participate and customers to shop.
- **Enforcement** – increase awareness of laws and policies that keep us safe.
- **Evaluation** – measurement of the results (outcomes) of the efforts or steps taken as part of this program.

The Age-Friendly Business District pilot is an area that has been developed with an objective to empower businesses with resources and education to better serve customers of all ages. A geographic area within Little Havana with a high older adult concentration was selected as the pilot area for the Age-Friendly Business District. A walkable, half-mile radius area surrounding the Vista Alegre Retirement Home was selected. There are currently 29 participating business members of the Age-Friendly Business District.

The Little Havana official geographic boundaries are the Miami River to the North, SW 27th Avenue to the West, SW 11thSt to the South, and US1/the Miami River to the East

Miami-Dade County MPO Aging Road Users Safety Plan

Topic: Aging Driver and Pedestrian Safety: Parking Lot Hazards Study

Source: https://psy.fsu.edu/~adapts/adapts_research.html

Author(s): Charness, N., Boot, W., Mitchum, A., Stothart, C., & Lupton, H. , Florida State University and Florida Department of Transportation

Date: 2012

Abstract:

This study, repeated in 2009, 2011 and 2012, included three tasks in the 2012 version. In Task 1, pedestrian crash data were analyzed for parking lots in West Central Florida, finding: 1) Seasonal variation in crash frequency in parking lots, with higher frequencies in winter and spring, likely associated with tourist influxes to Florida; 2) Variation in crash frequency during daytime hours with peaks from noon to 6 pm; 3) Greater crash risk (per 1000 population) for all crashes and serious crashes for younger (age 15-19) and older (age 75+) pedestrians, as well as for younger (age 20-24) and older (age 65+) drivers; 4) Greater crash frequencies in smaller than larger parking lots and in residential parking lots; 5) No significant variation in crash frequency by parking space angle or by presence of crosswalks; and, 6) Greater frequency of back-out crashes for older pedestrians (age 75+) and forward driving crashes for younger (age 14 and below) pedestrians.

In Task 2, an observational study of pedestrian behavior in parking lots, found: 1) Greater use of crosswalks by all age groups (young, middle, old) in larger parking lots, though no significant age variation occurred in using crosswalks; 2) No significant age variation in lateral distance to parked cars when pedestrians were navigating; and, 3) Greater distracted walking by younger than older pedestrians.

In Task 3, a field experiment requiring middle-aged and older pedestrians to navigate through an open parking lot and a parking garage wearing eye-tracking equipment, found: 1) Age differences in walking speeds when navigating parking lots with older pedestrians, aged 65 and older, walking about 0.6 feet/sec. slower than middle-aged adults, aged 50 to 64; and 2) No significant age differences in attention patterns when navigating parking lots, as indicated by scanning behavior (e.g., head turns, eye fixation patterns) or in response to a backing-out threat (fixation response time, walking path deviation).

Conclusion: The most likely reason for the differential crash types in parking lots for older compared to younger pedestrians probably lies in the reduced speed with which older pedestrians can react to hazardous events. Potential countermeasures to improve safety could include age-targeted educational campaigns and development and deployment of collision-avoidance technology. Also, future work should focus on developing new ways to assess pedestrian crash exposure in parking lots that take into account walking speed and distance from parking spaces to store fronts.

Miami-Dade County MPO Aging Road Users Safety Plan

Topic: Aging Drivers and the Law

Source: http://www.elderlawanswers.com/aging-drivers-and-the-law-1094

Author(s): Elder Law Attorneys

Date: 2013

Abstract:

In many places, cars are the only convenient link to the outside world. Unfortunately, as people age, driving can become more difficult and more dangerous. The elderly drive less, but have more accidents per mile than younger drivers, partially because elderly individuals are more likely to be affected by poor eyesight, chronic disease, and medications that might impair driving.

States vary widely on how they treat older drivers. (For information each state's laws, click here.) While no state will revoke a driver's license based only on the driver's age, some states put restrictions on license renewals for elderly drivers. Other states do not differentiate based on age, and still others have fewer requirements for older drivers.

The states that put restrictions on license renewals do so in a number of ways. Many have accelerated renewal periods for people over a certain age. These periods can vary widely. For example, Colorado requires everyone age 61 and older to renew their license every five years as opposed to every 10 years for people under age 61. Illinois has a 4-year renewal period, but the period shortens to two years if the driver is between the ages of 81 and 86, and then to 1 year if the driver is age 87 or older.

Some states require elderly drivers to take a vision test when renewing a license. Another way states monitor older drivers is by prohibiting drivers over a certain age from renewing their licenses by mail. Finally, Illinois requires a road test if the driver is 75 years old or older.

While not all states put restrictions on license renewals, all state Departments of Motor Vehicles, Highway Safety, or Transportation have an office where a family member or doctor can make a referral about an unsafe driver. The state office will investigate the claim, and the driver may have to take a road test. Doctors are generally not required to report patients they feel are unsafe. In California; however, doctors must report demented patients and in California, and a few other states, doctors must report patients with epilepsy.

Two states have laws that actually put fewer restrictions on older drivers. In Tennessee, drivers over age 65 do not have to renew their license. In North Carolina, drivers 60 and older are not required to parallel park in the road test.

For information on state laws about older drivers, go to http://www.iihs.org/laws/state_laws/older_drivers.html

Miami-Dade County MPO Aging Road Users Safety Plan

Topic: **Alcohol and Older Driver Crashes**

Source: https://www.nhtsa.gov/sites/nhtsa.dot.gov/files/812063-alcoholandolderdrivercrashes.pdf

Author(s): National Highway Traffic Safety Administration

Date: **2014**

Abstract: Researchers have examined the effects of alcohol consumption on older adults' functioning, and some have addressed alcohol's effects on older drivers' crash risk. Generally, the findings have shown that alcohol is less likely to be a factor in crashes for older, as compared to younger, drivers. Table 1 displays the percentage of people 65 and older who sustained injuries, either as drivers in crashes or from falls, who had positive Blood Alcohol Content (BACs). The data showed that the older drivers were somewhat less likely to have positive BACs than were those treated for fall-related injuries.

Table 1. Age 65 and Older % Alcohol Positive by Circumstance of Injury

Injury Circumstance	Alcohol Positive	Total Group *n*
Driver in Crash	10.1%	1,392
Fall	13.3%	4,135
Total	12.5%	5,527

The groups' mean BACs were similar. The drivers' mean BAC was higher than that for the 18- to-20-year-old drivers in the study (who could not legally drink), but lower than those for drivers in the middle age groups. Most of the drivers over 65 who tested positive for alcohol had BACs above .16.

Approximately 10% of the drivers 65 and older injured in crashes, whose records documented BACs, tested positive. This was well below the rates observed for drivers in the younger age groups in this study. These findings were consistent with data for drivers involved in fatal crashes for the United States, as a whole.

Results also showed older drivers with positive BACs at the time of their crashes had notably worse driving records than their crash-involved counterparts with negative BACs. Crash responsibility determinations showed that older drivers with positive BACs were more likely to be deemed responsible for the crash than were their counterparts with negative BACs. These findings highlight effects of alcohol that extend beyond the effects of aging alone.

Overall, the study found that the drivers 65 and older were less likely than their younger counterparts to test positive for alcohol after crashes that required treatment at a trauma center. However, when older drivers tested positive, their BACs were generally high, well above the limit of .08% for driving set in most states. Moreover, the strong relationship between older drivers' BAC and poor driving and DUI records, and high crash responsibility highlight the need to focus more attention on countermeasures for drinking and driving among those 65 and older.

Miami-Dade County MPO Aging Road Users Safety Plan

Topic: An Examination of Medical Conditions, Medication Use, and Travel Behaviors

Source: https://www.aaafoundation.org/sites/default/files/Medical%20Conditions%20%26%20Travel%20Behavior%20FS_0.pdf

Author(s): ***Sandra Rosenbloom and Robert Santos, The Urban Institute***

Date: 2014

Abstract: One in six drivers on U.S. roads today are 65 years of age or older. Though generally a very safe group of motorists, older Americans may be more likely to have a medical condition or use medications that can affect their driving. Moreover, as people age, fragility begins to make crash survival and recovery more difficult. As such, finding ways to keep seniors safe and mobile is among the AAA Foundation's top priorities. Key Findings of this study are that it corroborates numerous findings in older driver research, particularly pertaining to the higher prevalence of medical conditions and medication usage among older drivers, and the active steps many take to limit their driving to favorable conditions. There is also clear evidence that higher-income seniors drive more and self-regulate less, even when they have medical conditions. More specific findings are:

Licensing and Travel Patterns

Older drivers are an active group:

- ✓ Over 75% of male drivers and 60% of female drivers over age 85 drove five or more days per week; and
- ✓ Among the same group, fewer than 5% of men and 10% of women drove less than once a week.

- Licensing rates have increased sharply among older drivers:
  - ✓ In the early 1970s, **barely half** of all Americans ages 65 and older had licenses;
  - ✓ By 2010, this had increased to almost **84%**.
- Between 1990 and 2009, every measure indicates increased automobility of older drivers:
  - ✓ Daily travel patterns for drivers 65+ indicate more trips, more miles driven, and more time spent driving in 2009 than 1990.

Medical Conditions and Medication Use

- Older drivers are significantly more likely to report a medical condition than younger drivers:
  - ✓ Drivers ages 65-69 are twice as likely to report having a medical condition as drivers 24-64
- Medication use is very high among older drivers:
  - ✓ Over 90% of older drivers take prescription medications; and
  - ✓ Of those who take any medication, over two-thirds take multiple medications.
- Gender differences are extremely large in all aspects of medication use, travel behavior, and driving self-regulation among motorists ages 65 and older:
  - ✓ Women without a medical condition drive less than men with a medical condition;
  - ✓ Women drivers who use medications or who have a medical condition are more likely to self-regulate their driving than are comparable men; and
  - ✓ Women are more likely to report having a medical condition and using multiple medications.
- Older drivers who report using medications or having a medical condition are more likely to self-regulate their driving behavior:
  - ✓ Three-quarters of drivers ages 65 and older who have a medical condition report reduced daily travel;
  - ✓ Older drivers using medications avoid night driving at double the rate of drivers ages 24-64; and
  - ✓ Older drivers using medications drive fewer days each week.
- Income appears to play a role in ways that warrant future research:
  - ✓ Self-regulatory behavior declines with increasing income among people taking multiple medications or who have a medical condition; and
  - ✓ Women drivers ages 65-69 with incomes under $13,000 were 62% more likely to restrict nighttime driving than women of the same age with incomes over $70,000.

Miami-Dade County MPO Aging Road Users Safety Plan

Topic: Arizona Driving Laws for Seniors and Older Drivers

Source: http://www.nolo.com/legal-encyclopedia/arizona-driving-laws-seniors-older-drivers.html

Author(s): Barbara Kate Repa

Date: 2013

Abstract: Special rules apply to Arizona drivers who are 65 and older who seek to renew their licenses.

Time limits: Drivers age 65 and older must renew in person every five years; those younger than 65 need to renew every 12 years.
New photos: Identifying photographs, taken at the driver license facility, must be updated every 12 years
Vision test: Required at in-person renewal. DOT personnel will conduct a test free, or drivers can have an exam performed by an outside ophthalmologist or optometrist, who must complete a Vision Examination Report and conduct the exam within three months of the renewal request.
Road test: Required only if there are indications of driver impairment based on a report by the driver, a law enforcement officer, a physician, insurance agent, or other concerned individual.

Possible License Restrictions

The DOT can place restrictions on a person's driver license. The most common restriction for older drivers in Arizona is to require glasses or corrective contact lenses and a daylight-only driving times.

How to Request an Unsafe Driver Investigation in Arizona

Drivers who have medical conditions that may affect their abilities to drive safely must notify the Medical Review Program by email through the Department of Transportation website or by mail. The Arizona DOT also accepts complaints and concerns about individual driver's abilities to drive safely—most often from law enforcement, medical practitioners, and other concerned citizens. The source of all complaints is kept confidential. To investigate, the agency deals only with the driver; individuals who filed complaints are not informed of the outcome.

Law enforcement: A law enforcement officer who stops a driver but does not issue a ticket may still request that the driver should be reviewed by the Medical Review Program. A law enforcement officer may report a driver by completing a Re-Examination Request form. DOT agents may also use this form to submit observations to the Medical Review Program urging that a driver should be re-examined.

Medical personnel: A doctor, registered nurse practitioner, or psychologist may voluntarily report a patient to the DOT who has a medical or psychological condition that could significantly impair the person's ability to safely operate a motor vehicle. The information must be in writing and include the name, address, and birth date of the patient. Medical professionals who submit such reports in good faith are immune from civil or criminal liability for making them.

Concerned citizens: Anyone who has direct knowledge of a driver's physical, mental, or emotional condition that may affect the ability to operate a vehicle safely can report it to the DOT by filing a Driver Condition/Behavior Report.

How to Get Parking Placards or License Plates for a Disabled Driver

Disabled person parking placards and license plates can be issued to drivers with impaired mobility if a licensed physician (including doctors of medicine, osteopathy, podiatry or chiropractic), registered nurse practitioner or hospital administrator certifies the condition.

Miami-Dade County MPO Aging Road Users Safety Plan

Topic: Association for Driver Rehabilitation Specialists

Source: http://www.aded.net

Author(s): The Association for Driver Rehabilitation Specialists

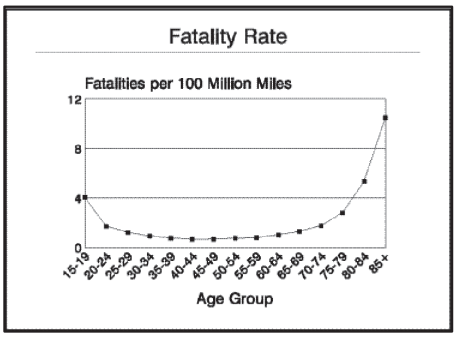
Date: 2017

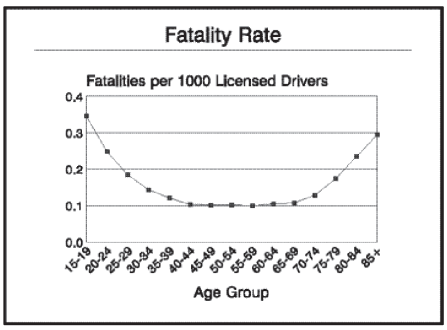
Abstract:

The Association for Driver Rehabilitation Specialists was established in 1977 to support professionals working in the field of driver education / driver training and transportation equipment modifications for persons with disabilities through education and information dissemination.

Issues Related to Older Drivers

Seniors have lower fatal crash rates per 100,000 licensed drivers when compared with teenage drivers and slightly higher rates than drivers of other age groups. One reason is that seniors drive fewer miles and take shorter trips than other drivers. Even this statistic, alone, can be misleading. When their crashes are adjusted to reflect the number of miles traveled, seniors' crash rates go up with their increased exposure. This is important to law enforcement officials because the empirical data are based on the historical likeliness that seniors were driving fewer miles as they aged. Analysts predict that more senior drivers will drive more miles in the future. The resulting projections are daunting: the Insurance Institute for Highway Safety predicts that the number of senior citizens involved in reported car crashes will increase by 178 percent between 1999 and 2030. During the same period, seniors' involvement in fatal crashes is projected to increase by 155 percent.





As shown above, fatality rates reveal that older drivers are at increased risk of dying, whether the rate is based on the number of licensed drivers or on the total vehicle miles traveled. Drivers older than 60 years of age show increasing fatality rates, indicating that older drivers suffer more serious injuries in crashes than do younger drivers.

Miami-Dade County MPO Aging Road Users Safety Plan

Topic: Associations Between Falls and Driving Outcomes in Older Adults: A Systematic Review and Meta-Analysis

Source: http://publicaffairsresources.aaa.biz/wp-content/uploads/2016/03/falls_factsheet_FINAL.pdf

Author(s): ***Laura B. Dunn***

Date: 2016

Abstract:

This study is part of the AAA Foundation for Traffic Safety's Long ROAD study effort, a national, prospective cohort study designed to examine crashes, driving, and medical issues relevant to drivers age 65 and older.

Driving is an important indicator of mobility and well-being for older adults. A fall is an event in which a person comes to rest inadvertently on the ground or floor or other lower level. Studies suggest that falls may increase the risk of subsequent motor vehicle crash (MVC) or other adverse driving outcomes. Falls have the ability to impact driving in three ways:

1. Falls may cause physical injury, limiting an older driver's ability to use the steering wheel, brake pedals, or otherwise perform essential driving maneuvers; *e.g.* a wrist fracture.
2. Falls may indirectly lead to reduced functional ability; *e.g.* increase in fear of falling leads to more limited physical activity, which may lead to physical and cognitive de-conditioning – "use it or lose it".
3. Falls may heighten self-awareness of age-related physiological changes or precipitate a fear of injury; *e.g*. may lead to self-restricting driving behaviors like reduced mileage and day-driving only

To better understand the research literature on the associations of falls in older drivers with subsequent MVCs, crash-related injuries, and driving performance and behavior a systematic literature review was conducted, including a narrative and a meta-analysis on previously-published studies related to falls and ensuing driving behaviors. This included examination of quantitative data for drivers aged 55 and older plus cohort, case-cohort, case-control, and time-series designs.

Key Findings

A fall history significantly increased the risk of subsequent crashes.

- ✓ Older adults who had fallen were 40% more likely to experience a subsequent motor vehicle crash than older adults who had not fallen.
- ✓ Many included studies adjusted for age and other factors such as neuromuscular function, vision, or cognition, suggesting that falls independently adversely affect drivers' functional abilities.

Limited evidence suggests that falls may also be associated with MVC-related injuries, hospitalizations, and deaths

Inconclusive evidence

There was no evidence that falls were associated with avoidance of: driving under certain conditions; *e.g.* at night, on highways, or alone; driving difficulty under certain conditions, while performing certain tasks; *e.g.* turning left; driving frequency, distance, or space; or, driving cessation

Miami-Dade County MPO Aging Road Users Safety Plan

Topic: Best Practices: Making Streets Work for Older Travelers

Source: http://assets.aarp.org/rgcenter/il/2009_02_streets_4.pdf

Author(s): Jana Lynott, AICP AARP PUBLIC POLICY INSTITUTE Washington, D.C. /// Jessica Haase, Kristin Nelson, ASLA, Amanda Taylor, Hannah Twaddell, Jared Ulmer, AICP RENAISSANCE PLANNING GROUP Charlottesville/// Virginia Barbara McCann NATIONAL COMPLETE STREETS COALITION Washington, D.C./// Edward R. Stollof, AICP INSTITUTE OF TRANSPORTATION ENGINEERS Washington, D.C.

Date: 2009

Abstract:

This study encourages roadway planners and engineers to employ design strategies that support older drivers and pedestrians, particularly in situations where the "status quo" design makes streets less safe for older adults. The recommendations can be summarized into the following three basic planning and design principles:

Slow Down - Reduce vehicle travel speeds in areas where drivers and pedestrians interact and where older drivers and pedestrians need more time to make decisions. Roadways can be reengineered for slower speeds through changes to curb radii, perceived or real lane widths, or replacement of typical intersections with roundabouts.

Make it Easy - Make the physical layout of the transportation network easy to navigate for older drivers and pedestrians. Some of the complexity of intersections can be removed by providing travelers a connected network of streets with lower-speed routes and intersections that are easier to maneuver.

Enjoy the View - Make it easy for drivers and pedestrians to notice, read, understand, and respond to visual cues and information. Reduction in the visual clutter of signs, better access management, and improvements to landscaping, signs, and lighting can make the roadway more intuitive.

These principles can be integrated into Complete Streets policies to change the process of transportation planning so that the needs of everyone expected to use the facility are considered from the beginning.. Once the basic policies are adopted, four implementation steps should be taken to ensure this comprehensive approach:

• Develop staff skills in planning and designing for all modes. Many planners and engineers began their careers with training that focused on the needs of automobiles, without much regard to who was driving them or to other road users. Balancing the needs of all users is a challenge, and doing so with every project requires new tools and skills.

• Rewrite and/or refocus agency policies and procedures to serve all modes. Many transportation agencies use transportation planning procedures focused on automobile capacity measures such as a higher level of service (a measure of congestion). They have not established a systematic way to determine all the types and modes of travelers along a corridor and to make sure their needs are met. The policy change should result in a restructuring of everyday procedures, beginning with much broader scoping processes, and new ways to decide on trade-offs.

• Rewrite and/or adapt design guidelines to address the needs of all travelers using all modes. This is the step most relevant to addressing the needs of older travelers, and may include new design manuals that specifically address the needs of older travelers and persons with disabilities, or they may point to current best practices manuals, such as those provided by the U.S. Access Board.

• Collect data on all users and modes for performance improvements. An important aspect of successful Complete Streets planning is having the tools to assess the success of new projects in meeting the needs of varied users.

Miami-Dade County MPO Aging Road Users Safety Plan

Topic: **California Strategic Highway Safety Plan**

Source: http://www.dot.ca.gov/trafficops/shsp/docs/SHSP15_Update.pdf

Author(s): Brian P. Kelly, Secretary, California State Transportation Agency

Date: 2015

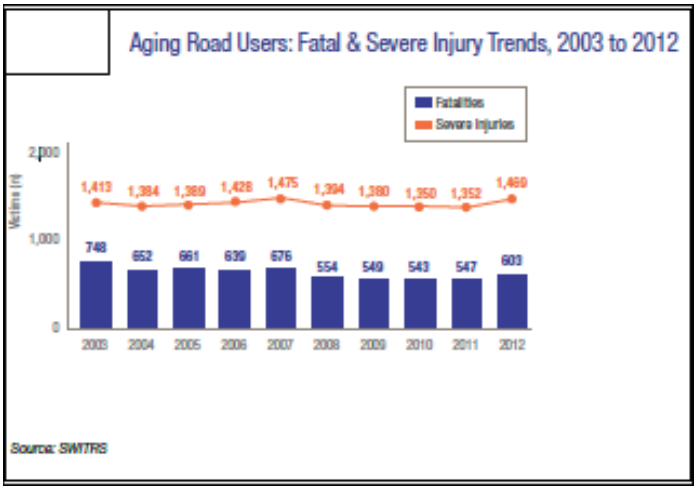
Abstract:

The Strategic Highway Safety Plan (SHSP) is a statewide, coordinated safety plan that provides a comprehensive framework for reducing highway fatalities and severe injuries on all public roads. Aging road users are defined as those drivers, pedestrians, bicyclists, and motorcyclists age 65 or older. Data displayed below involves all fatalities and severe injuries in collisions in which one or more aging roadway users were involved. According to 2010 census data, people age 65 and older make up 12.5 percent of the population in California, as compared to 14.1 percent nationally. Aging affects all aspects of driving from eyesight to judging time and distance to having the necessary strength and flexibility to operate a vehicle. While aging does affect driving, it does not do so at the same rate for every individual. Thus, the goal is to keep individuals driving for as long as it is safe to do so. In California, aging roadway users accounted for nearly 15 percent of all traffic fatalities and severe injuries in 2012. The graphic below shows that between 2003 and 2012, 6,172 aging road users died and 14,034 were severely injured.

These crashes occur mainly on local roads (66.6 percent) and in urban areas (63.7 percent). A large proportion occur between 12 noon and 6 p.m., with Fridays showing the highest numbers. There have been slight increases in fatalities and severe injuries among aging road users from 2010 to 2012.

Aging Road User Strategies:

• Develop and disseminate education materials, programs and tools that explain how the aging process may affect safe driving.
• Promote awareness of the impact of prescription and non-prescription medications and supplements on the safety of aging road users.
• Promote implementation of multi-modal guidance for aging road users, which is included in the California Manual on Uniform Traffic Control Devices.
• Promote knowledge and increased application by transportation professionals of preferred roadway design elements friendly to aging road users.



Miami-Dade County MPO Aging Road Users Safety Plan

Topic: CarFit

Source: http://www.car-fit.org

Author(s): AARP, AAA and the American occupational Therapy Association

Date: 2017

Abstract:

What is CarFit?

CarFit is an educational program created by the American Society on Aging and developed in collaboration with AAA (American Automobile Association), AARP and the American Occupational Therapy Association.

What are the Objectives of the CarFit program?

The program is designed to help older drivers find out how well they currently fit their personal vehicle, to highlight actions they can take to improve their fit, and to promote conversations about driver safety and community mobility. A proper fit in one's personal vehicle can greatly increase not only the driver's safety but also the safety of others.

In What Ways Can CarFit Improve Road Safety?

Three quick examples underscore the importance of road safety to the CarFit program, which reviews twelve key areas of the driver's fit to the personal vehicle.

1. **Example one:** Knowing how to properly adjust one's mirrors can greatly minimize blind spots for drivers who may wish to change lanes.
2. **Example two:** Good foot positioning on the gas and brake pedals is important. If the driver is reaching with his or her toes to press on the pedals, it can cause fatigue in one's leg and slowed reaction times.
3. **Example three:** Drivers run a risk of serious injury if they are sitting closer than 10 inches to the steering wheel

Is CarFit Effective?

CarFit was pilot tested in 10 cities in the spring of 2005 with more than 300 older driver participants. Based on findings from the CarFit checklists completed at the events and follow-up surveys of participants, the program appears to be highly effective on multiple fronts. Some of the results show:

- Over one-third (37%) had at least one critical safety issue needing addressed.
- One in ten (10%) were seated too close to the steering wheel.
- Approximately 20% did not have a line of sight at least 3" over the steering wheel.

In addition, the vast majority of those responding to the survey indicated that as a result of having gone through the CarFit event, they made a change to improve the fit of their vehicle, their use of safety features in their vehicle and/or their willingness to discuss their driving with family and/or health care providers.

Miami-Dade County MPO Aging Road Users Safety Plan

Topic: Centers for Disease Control and Prevention: Older Drivers

Source: https://www.cdc.gov/Motorvehiclesafety/Older_Adult_Drivers/index.html

Author(s): Center for Disease Control and Prevention

Date: 2015

Abstract: In 2015, there were more than 40 million licensed drivers ages 65 and older in the United States. Driving helps older adults stay mobile and independent. But the risk of being injured or killed in a motor vehicle crash increases with age. Thankfully, there are steps that older adults can take to stay safer on the roads.

How big is the problem?

- In 2014, more than 5,700 older adults were killed and more than 236,000 were treated in emergency departments for motor vehicle crash injuries. This amounts to 16 older adults killed and 648 injured in crashes on average every day.
- There were more than 40 million licensed older drivers in 2015, which is a 50 percent increase from 1999

Who is most at risk?

- Involvement in fatal crashes, per mile traveled, begins increasing among drivers ages 70–74 and are highest among drivers ages 85 and older. This trend has been attributed more to an increased susceptibility to injury and medical complications among older drivers rather than an increased risk of crash involvement.
- Across all age groups, males have substantially higher death rates than females.
- Age-related declines in vision and cognitive functioning (ability to reason and remember), as well as physical changes, may affect some older adults' driving abilities.

Existing protective factors that may help improve older drivers' safety include:

- High incidence of seat belt use -- While 60% of passenger vehicle occupants (drivers and passengers) ages 65-74 and 69% of passenger vehicle occupants ages 75+ killed in crashes were wearing seat belts at the time of the crash, seat belt use among younger adults ranged from 38% (among those ages 21-24) to 55% (among those ages 55-64).
- Tendency to drive when conditions are the safest --Older drivers tend to limit their driving during bad weather, at night, and on high-speed roads, in comparison to younger drivers.
- Lower incidence of impaired driving -- Older adult drivers are less likely to drink and drive than other adult drivers.[9] In 2015, only 6% of drivers ages 75+ years involved in fatal crashes had a blood alcohol concentration (BAC) of 0.08 grams per deciliter (g/dL) or higher, compared to 28% of drivers ages 21-24 years. Overall, 20% of drivers, regardless of age, involved in fatal crashes had a BAC of 0.08 g/dL or higher.
- Older adults can take several steps to stay safe on the road, including:

  - ✓ Exercising regularly to increase strength and flexibility.
  - ✓ Asking your doctor or pharmacist to review medicines–both prescription and over-the counter–to reduce side effects and interactions.
  - ✓ Having eyes checked by an eye doctor at least once a year. Wear glasses and corrective lenses as required.
  - ✓ Driving during daylight and in good weather.
  - ✓ Finding the safest route with well-lit streets, intersections with left turn arrows, and easy parking.
  - ✓ Planning your route before you drive.
  - ✓ Leaving a large following distance behind the car in front of you.
  - ✓ Avoiding distractions in your car, such as listening to a loud radio, talking on your cell phone, texting, and eating.
  - ✓ Considering potential alternatives to driving, such as riding with a friend or using public transit, which you can use to get around.

Miami-Dade County MPO Aging Road Users Safety Plan

Topic: Checklist for Aging Parents: Senior Driving Safety – Aging Wisely

Source: http://www.agingwisely.com/checklist-for-aging-parents-senior-driving-safety/#ixzz4ZigXPPGX

Author(s): Matt Gurwell

Date: 2017

Abstract: Though older drivers in general are safe drivers, age-related changes can affect driving abilities and this can be deadly. The National Highway Traffic Safety Administration indicates that on the basis of estimated annual travel, the fatality rate for drivers 85 and over is nine times as high as the rate for drivers 25 through 69 years old. Some drivers realize and acknowledge these changes, while others struggle with this transition/loss. According to the U.S. Department of Health and Human Services, men will live an average of 6 years longer than they can drive and women, 10 years.

Red flags to watch for regarding senior driving safety:

- Your parent is very cautious when driving and has narrowed driving down to only familiar locations and/or seems very nervous when driving (all of these accommodations can be good, but also indicate that your parent feels unsure and any changes could become a real issue…i.e. what would your parent do if a road was closed or something unexpected happened on the road?).
- Your parent's friends refuse to go along in the car with him/her.
- Your parent has unexplained dents in the car or has small fender-benders or hits stationary objects.
- Memory issues or dementia are present. Many people with early dementia or cognitive issues do not immediately give up driving and may not need to, but this is an issue to watch closely. Driving involves highly complex thinking which is typically compromised with dementia. A driver may remember familiar routes for now, but can be easily confused if anything changes or may do well every day up until the one day he or she gets lost.
- Eye sight, hearing, balance issues or strength are problematic. Again, there may be accommodations for many of these issues, but it is important to assess them and plan for such accommodations.

What should be done to aid an aging driver? What functional skills are needed and what red flags should cause concern?

- Drive with your aging parent and observe. This is one of the best ways to spot red flags. How is your elder parent's reaction time? Does he/she miss signs? If you ask to go to a new spot or provide directions does this cause trouble?
- Check car maintenance. Ask your parent when they have the oil changed, get the care checked out. Not all of us are good at this at any age, but this may be a sign that an aging parent can no longer handle the many tasks related to driving and auto upkeep.
- Suggest an AARP or other safe driving course. As mentioned, many things have changed with cars and traffic, so even the best driver can benefit. This may also help an aging parent come to the realization that they should not drive any more.
- Talk to a professional care manager if you feel like you need an outside assessment, help talking through/mediating about the issue and especially, a plan for post-driving.

Miami-Dade County MPO Aging Road Users Safety Plan

Topic: Colorado's Guide for Aging Drivers and Their Families

Source: http://www.drivesmartcolorado.com/wp-content/uploads/2015/11/Older-Driver-Booklet-FINAL-PRINT.pdf

Author(s): Drive Smart Colorado

Date: 2016

Abstract: This guide for aging drivers, their families and caregivers was created by DRIVE SMART COLORADO (www.drivesmartcolorado.com with support from Michigan and Florida. DRIVE SMART COLORADO is a non-profit with a mission to reduce traffic crashes and deaths through community collaboration and education.

THE IMPACT OF AGING ON DRIVING -- Most people see a steady decline in some of the skills important for driving as they get older. Generally, starting at age 55 there often is a slow decrease in how well we process information, remember and judge driving events, such as the distance of oncoming traffic. However, the changes of aging do not affect all drivers in the same way. Specific skills, such as vision, memory, strength, flexibility and reaction time decline as we age but the rate varies from person to person. Your health is closely connected to your driving. You must be able to see well enough to detect hazards in different types of lighting, judge distances, adjust to the speed of traffic and read road signs. Your brain must be alert enough to quickly decide the correct course of action in any type of traffic situation, including unexpected ones.

Your body must also be able to respond and react quickly. Driving presents particular challenges to older adults because of changes in vision, cognition and physical function. The increased use of medications as we get older may affect driving as well. It is your responsibility to understand how your limitations affect your driving. The National Highway Traffic Safety Administration (NHTSA) "Older Drivers" web page (http://www.nhtsa.gov/Driving+Safety/Older+Drivers) provides links to a series of pamphlets that address the more common medical conditions that affect an older person's ability to drive safely, such as Alzheimer's, arthritis, cataracts, stroke, etc. You may also contact NHTSA for free traffic safety information at 888-327-4236. The website (www.nhtsa.gov/Driving+Safety/Older+Drivers) also provides information for medical professionals, with two noteworthy publications: *Driver Fitness Medical Guidelines* and the *Physician's Guide to Assessing and Counseling Older Drivers*.

Vision -- The main sense you use in driving is vision. Visual decline is the most important loss for aging drivers. Aging eyes need:

- ✓ more light to help distinguish features along the roadway;
- ✓ to be closer to properly read traffic signs and markings; and
- ✓ more time to recover from the glare of bright headlights at night or the sun.

It is important that you see well to help ensure safe driving. Have your eyes checked as recommended by a vision specialist. If you wear glasses or contact lenses for driving, please remember to:

- ✓ always wear them when you drive, even if you are only traveling a short distance. If your driver's license indicates that you must wear corrective lenses and you are not wearing them, it may result in missing a stop sign, getting involved in a crash or receiving a ticket.
- ✓ keep an extra pair of glasses in your car in case your regular glasses get broken or lost. This will also help if you only use glasses for activities such as driving and you forget your regular pair when you get in the vehicle.
- ✓ avoid wearing dark glasses or tinted contact lenses when driving at night, even if you think it will help with headlight glare. Dark or tinted glasses/lenses can shut out light. You need as much light as possible to help you see clearly when driving at night.

Hearing -- Good hearing is important because it alerts you to the sirens, horns and other audio cues needed to drive. Hearing often changes as you get older. You should see your audiologist or other hearing specialist regularly because it is important to maintain

your hearing, and wear hearing aids if necessary. It is as important to keep a hearing aid up-to-date as it is the prescription for your eye glasses or contacts. Avoid turning your hearing aid down (or off) even if you think that it reduces distraction.

Medication -- Roadwise RX is a free confidential online tool developed by the AAA Foundation for Traffic Safety that adults can use to explore how medications may affect safety behind the wheel.

Cognition -- Cognition is the act of processing information for knowledge and understanding. It includes your ability to think, use your senses, pay attention, learn, read, and problem solve. Driving is a very complex activity that requires you to use many of these skills whether you are driving a short or long distance. Driving requires you to process and remember several objectives simultaneously, such as how to operate your vehicle in all kinds of conditions, what traffic signs and signals mean and how to get to your destination safely. You must be able to do all these things while processing all other information you encounter when you are behind the wheel. Faulty cognition may result in:

- ✓ distraction or disorientation as you are driving;
- ✓ problems maintaining control of your car for long distances;
- ✓ slower response to traffic signs, signals or markings;
- ✓ trouble recognizing changes in traffic conditions, traffic hazards and emergencies;
- ✓ delayed reaction to seeing and responding to the position of other cars, trucks or motorcycles as they change lanes or as you enter the roadway;
- ✓ trouble recognizing and safely responding to pedestrians and bicyclists;
- ✓ problems properly operating the controls in your car, such as confusing the brake and gas pedals;
- ✓ improper use of your turn signal to warn other drivers when your car is turning or changing lanes; or
- ✓ trouble planning and safely maneuvering your driving route. Frequently becoming lost or confused when driving. This can result in panic and sudden irrational changes while driving, such as losing control of your car.

Physical Condition -- As we age, we usually lose muscle mass and bone strength, which increases your chances of injury or death in a crash. Drivers age 65 or older have four times the odds of sustaining serious injuries compared to drivers under age 24. Aging can also result in sensory issues in your hands and feet, such as tingling, numbness, and problems telling where they are positioned. These can affect your ability to feel, grasp, manipulate or release objects. Loss of strength results in trouble keeping a firm grip on your steering wheel or keeping consistent pressure on the pedals with your legs and feet. Decreased flexibility may cause rigidity or limited range of motion in the neck, torso, arms, legs or joints. Vertigo, dizziness, or loss of balance can occur, along with muscle spasms or tremors that may cause you to lose control of your vehicle.

Common Driving Errors -- Taking into consideration how aging effects your driving, these are the most common problem areas:

- ✓ Making left turns
- ✓ Driving at night
- ✓ Merging into traffic
- ✓ Changing lanes
- ✓ Keeping up with the flow of traffic
- ✓ Yielding to traffic
- ✓ Following traffic signals
- ✓ Impaired driving (including prescription and over-the-counter medication)

Miami-Dade County MPO Aging Road Users Safety Plan

Topic: Decisions for Tennessee's Senior Drivers

Source: https://www.tn.gov/assets/entities/tdot/attachments/TGHS-27138_Senior_Book_5.pdf

Author(s): *Tennessee Department of Transportation*

Date: 2015

Abstract:

What to watch for as you age?

How can you tell whether you're still driving safely or not? Here are a few things to watch for.

- Nervousness while driving -- Has your confidence in your driving diminished so that you feel nervous and uncertain when you get in the car?
- More tickets or warnings -- Have you been issued more tickets or warnings in the recent past for offenses such as driving the wrong way on a one-way street, running a red light, or failing to yield the right-of-way?
- Crashes -- Have you been involved in "fender-benders" or more serious auto crashes in the recent past? Do you notice more dents or scratches in your car? Have you had more-frequent close calls where you were almost involved in a crash?
- Reactions of others --Are friends or family members more reluctant to ride with you than they used to be? Do other drivers frequently honk at you?
- Getting lost or confused -- Do you get lost more frequently, even in familiar places? Do you have a hard time staying in the proper lane? Are you exhausted or upset when you come home from driving somewhere?

Precautions

You may already be a safe driver, but here are reminders of some simple precautions you can take to improve your driving safety.

- Don't drive when you're tired, and never drink and drive. The effects of alcohol on driving ability are even more significant in an older person than a younger one.
- When driving through intersections, take your time and check carefully for pedestrians, cyclists, and cars coming from other streets. If you need to turn left at an intersection that doesn't have a traffic light, consider driving ahead and making three right turns instead.
- Minimize distractions when you drive. Keep the radio volume low or turn it off altogether. If you have passengers and their conversation is distracting to you, remind them that you'll be safer with less noise in the car.
- Never talk on your cell phone as you drive. Even using a headset creates a distraction that can be dangerous. If your phone rings and you feel you need to answer it, pull off the road to a safe spot and then respond to the call.
- Make sure your windshield and all other windows and mirrors are clean, inside and out.
- Always obey the speed limit, and leave plenty of room between you and the car ahead, especially in rainy or other hazardous conditions. If you drive slower than other vehicles, stay in the right lane.

Make your car safer

You can improve your capacity for safe driving by making sure your car has as many safety features as possible. Here are some of the most important.

- Power steering and power antilock brakes to compensate for any reduction in strength or mobility
- Automatic transmission
- Adjustable driver's seat and steering wheel so you can sit high enough to see over the steering wheel
- Front and side airbags for maximum protection in a crash
- Un-tinted windshield for better vision
- Adaptive equipment such as wide-angle mirrors, pedal extenders, and steering knobs.

Miami-Dade County MPO Aging Road Users Safety Plan

Topic: Design Handbook to Accommodate Older Drivers

Source: https://safety.fhwa.dot.gov/older_users/

Author(s): Federal Highway Administration

Date: 2014

Abstract: The 2014 Federal Highway Administration (FHWA) Handbook for Designing Roadways for the Aging Population, is composed of two parts. Part I includes recommendations for treatments and countermeasures to address specific areas of concern for aging road users. Treatments are classified as a "proven" (Table 1) or "promising" (Table 2) practices. Proven practices are based on supporting evidence drawn from a comprehensive review of field and laboratory research addressing human factors and highway safety. Promising practices are new to this edition of the Handbook and are treatments being used by one or more agencies. Although they are not fully evaluated, they are believed to benefit aging roadway users.

Table 1. Treatments Recommended for Proven Practices

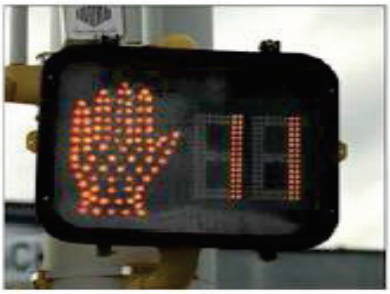
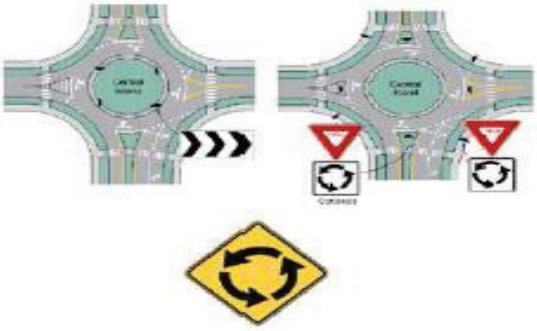
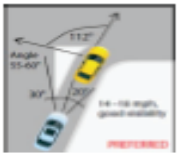
Intersection Proven Practice	Treatment Recommendation	
Traffic Signals	Install 12-inch signal heads.	
	Provide yellow retroreflective borders on backplates	
Pedestrian Crossings	Revise walking speed from 2.8 feet per second to 3.0 feet per second.	
	Measure crossing distance 6 feet back from the curb or edge of travel lane.	
	Install countdown pedestrian signals at all signalized intersections.	
Roundabouts	Provide Advance Warning Signs (W2-6).	
	Provide Directional Arrow Signs (R6-4).	
	Install Roundabout Circulation Plaque (R6-5P).	

Table 2. Treatments Recommended for Promising Practices

Intersection Promising Practice	Treatment Recommendation	
Right-Turn Channelization Design	Right-turn channelization should be considered during design. A tighter turning radius reduce turning speeds to approximately 17 to 18 mph, decrease pedestrian crossing distances, and optimize the right-turning motorists' line of sight.	
Combination Lane-Use/ Destination Overhead Guide Signs	Provide combination lane-use/ destination overhead guide signs at intersections with complex design features or heavy traffic.	
Signal Head Visibility	Install one signal head per lane, centered over each lane.	
High-Visibility Crosswalks	Use marking patterns that are more visible than standard markings (such as ladder or diagonal patterns).	
Supplemental Pavement Marking for Stop and Yield Signs	Install word or symbol pavement markings to supplement signs.	

Miami-Dade County MPO Aging Road Users Safety Plan

Topic: Driver Rehabilitation Services

Source: http://www.driver-rehab.com

Author(s): Driver Rehabilitation Services

Date: 2017

Abstract: Driver Rehabilitation Services provides comprehensive evaluations for aging drivers. Assessments always include both clinical and behind the wheel testing. Aging Drivers seeking expert guidance can benefit from a Comprehensive Driver Evaluation that includes both Clinical and Behind the Wheel assessments.

Reasons to Participate in a Driver Evaluation

- Physical Changes -- Normal physical changes with aging can include: difficulty walking or maintaining balance, slowed reaction time, loss of flexibility, or diminished strength. All these challenges may affect skills for controlling a motor vehicle.
- Vision Challenges -- 90% of all decision making behind the wheel is related to visual processing. Macular degeneration, cataracts, diminished visual acuity, loss of peripheral vision, or impaired depth perception can impact visual processing while driving.
- Ongoing Medical Conditions -- Conditions such as arthritis, diabetic neuropathy, back or hip pain or other physical challenges limiting range of motion or strength may affect one's abilities to look behind them when backing, steer, maintain lane position, or apply the gas or brake pedals appropriately.
- Stroke -- Stroke patients may have residual effects such as weakness or limited movement of limbs, vision loss, slowed decision making speed, or difficulty processing information. Others may have difficulty communicating (aphasia). As driving requires the ability to multitask physical, visual and cognitive skills simultaneously, individuals recovering from a stroke should seek a professional driver evaluation to determine their readiness to resume driving.
- Dementia or Alzheimer's Diagnosis -- For individuals with dementia, Alzheimer's disease, or who are showing signs of cognitive decline or memory loss, a driver evaluation is warranted as driving requires constant judgment and quick decision making behind the wheel.
- A Recommendation to Stop Driving Has Been Made -- A physician of family member of an aging individual may make a recommendation to cease driving. If the aging driver is unsettled or does not agree with this recommendation a comprehensive driver evaluation by an expert in the field of driver rehabilitation can aid in knowing if driving retirement is the best option.
- Family Members Express Concern Regarding Safety -- Family members may notice changes in driving skills of an older adult that lead to safety concerns. A comprehensive driver evaluation can provide input regarding how age related changes or medical challenges are impacting safe vehicle control and behind the wheel decision making.

What is a Involved?

A Driver Evaluation is a comprehensive assessment of an individual's abilities to drive whether it is following a significant injury or disabling condition or the potential to become a safe and independent driver with a disability for the first time.

- It is the first step for all other services within the field of driver rehabilitation. The evaluation provides information as to whether a person with a disability is able to operate a motor vehicle and determines what vehicle and/or modifications are needed for safe driving.
- A Driver Evaluation can also help drivers who are replacing adaptive equipment or who have experienced changes in medical/functional status.
- Upon completion of the Driver Evaluation, a preliminary prescription for specialized driver training and/or vehicle modifications is generated.

What assessments are conducted during the driver evaluation?

- Screening of a client's medical history, driving history, license status
- Clinical evaluations of physical, visual, perceptual, cognitive and behavioral abilities
- Appraisal of driver seating needs and vehicle entry and exit needs
- Determination of needs related to transporting mobility aids such as walkers, crutches, wheelchairs or scooters
- On the road assessment in appropriate driving environments (with or without adaptive equipment as needed)

Miami-Dade County MPO Aging Road Users Safety Plan

Topic: Driving Health Inventory

Source: http://www.drivinghealth.com

Author(s): **TransAnalytics Health & Safety Services**

Date: 2017

Abstract: To maintain the independence that a car provides, without extra risk, depends upon maintaining our 'driving health.' A person with good 'driving health' retains all of the critical visual, mental, and physical abilities needed to drive safely. These are typically referred to as 'functional abilities' by medical and health care professionals.

Monitoring changes over time in someone's functional abilities can help manage the risk of a motor vehicle-related crash or injury. Declines in safe driving abilities may come about because of disease or trauma, but are also a normal part of aging. People who suffer a decline in 'driving health' will not be as capable of detecting, anticipating, or reacting to safety threats when behind the wheel.

The DRIVINGHEALTH® INVENTORY is a software tool for driver functional screening, containing measures that have been validated against at-fault crashes in case-control research sponsored by the National Highway Traffic Safety Administration and the National Institute on Aging. Under controlled conditions, its standardized procedures provide a quick and reliable indication of whether an individual has no deficit, a mild deficit, or a serious deficit in each of the following functional abilities that underlie safe driving:

- high- and low-contrast visual acuity – to read signs, detect hazards, and guide the vehicle properly under high and low visibility conditions.
- leg strength & stamina – to use the gas and brake pedals effectively for smooth control of vehicle speed, and timely response in emergency situations.
- head/neck flexibility – to rapidly check in both directions for cross-traffic, and to look over the shoulder before backing, merging, or changing lanes.
- route planning – a preferred measure of 'executive function' that includes planning, foresight, judgment, and visual attention; this ability is essential not only for navigation but for safely negotiating any complex traffic situation.
- short-term and working memory – to remember and apply all rules and regulations for safe driving, sign messages, route directions, and other trip information while simultaneously attending to traffic.
- visualization of missing information – to recognize a whole object when only part is in view, helping a driver anticipate and respond earlier to emerging safety threats.
- visual search with divided attention – to rapidly scan the roadway environment for traffic control information, navigational cues, and conflicts with other vehicles or pedestrians, especially at intersections.
- visual information processing speed – to detect threats at the edge of the 'useful field of view' while maintaining concentration on what is happening directly ahead.

Miami-Dade County MPO Aging Road Users Safety Plan

Topic: Driving off into the sunset: Survey shows many older Floridians have no backup plan after hanging up their keys

Source: http://www.fsu.edu/news/2011/12/02/aging.drivers/

- Author(s): Florida State University, John Reynolds and the Florida Department of Transportation

- **Date: 2011**

Abstract: In establishing a baseline for the development of Florida's Aging Road User Strategic Safety Plan, responses were analyzed of more than 900 Floridians who participated in the 2011 Florida Aging Road User Survey. Of those survey participants, half ranged in age from 50 to 64 years old, while the other half were 65 and older. Their responses provide some insights into the perceptions of older drivers regarding the mobility and safety challenges that they may one day face. Among the findings:

- Most older drivers don't plan for a future day when they may be unable to drive safely. Eighty-three percent of survey respondents ages 65 and older, and 92 percent of 50- to 64-year-olds, reported that they have no "transportation retirement plan." When asked to describe how they might transition from driving in the future, many indicated they would rely on family, friends or neighbors (23 percent), but many more replied that they did not know or had not ever thought about it (36 percent). About 13 percent said they would not stop driving at all, with some of those (3 percent overall) expressing an opinion that they would die before they needed to stop driving. Very few — slightly under 4 percent — of respondents stated that they planned to use a community driver program or paratransit service such as Dial-A-Ride.

- Many aging road users see no alternatives to driving in their communities. When asked about ways they get around besides driving a car, 40 percent of respondents ages 65 and older replied that they ride with family or friends, 26 percent said they walk, and 15 percent said there was no other way to get around other than driving. (For 50- to 64-year-olds, the percentages were 38 percent, 29 percent and 16 percent, respectively.)

Older drivers consider roads in the state to be fairly safe. Seventy-eight percent of respondents ages 65 and older said Florida's roads are very safe (21 percent) or somewhat safe (57 percent). For those between the ages of 50 and 64, 75 percent rated roads in the state as either safe or very safe.

Miami-Dade County MPO Aging Road Users Safety Plan

Topic: Elder Pedestrian Safety in Miami-Dade – An Overview

Source: http://www.allianceforaging.org/consumers/pedestrian-safety/safe-steps-1

Author(s): Virginia Dize, Co-Director National Center for Senior Transportation Washington, DC and Marsha Jenakovich, MAA Director of Planning & Special Projects Alliance for Aging, Inc. Miami, Florida

Date: 2013

Abstract:

In October 2012, the Health Foundation of South Florida received a "Community Agenda: Improving America for All Ages" grant from the Pfizer Foundation and Grantmakers in Aging as part of their Age Friendly Cities Initiative. This local initiative is building on groundwork already underway to accelerate local efforts to make the community more "age-friendly", or in other words, "a great place to grow up and grow old." One of the key elements of this project is the Safe Routes to Age in Place project. Urban Health Partnerships conducted a pilot project in Little Havana that identified community concerns related to pedestrian safety through a series of informal conversations with residents. Stakeholders were convened to review the results and offer recommendations and possible solutions. The project produced a "tool kit" of resources designed to help the community achieve their desired outcomes and improve pedestrian safety. The project is also reviewing all existing plans (e.g., transportation, community planning) to ascertain if and how they address the needs of older adults and support the goal of aging in place. The Miami-Dade County Department of Parks and Recreation is also developing programming to encourage elders to use the parks for healthy recreational activities, including walking.

In 2010, after experiencing a decline for several years, pedestrian injuries in the United States rose by 4 percent over the previous year to 70,000 pedestrians injured due to traffic crashes, 11 percent of whom were elders. A total of 4,280 pedestrians of all ages were killed, 19 percent (813) of whom were older adults aged 65 and older, the highest for any age group. In Miami-Dade, there has been a downward trend in elder pedestrian injuries from 2001-2011, but elder pedestrian fatalities have remained relatively steady.

Figure 1: Pedestrian Crashes (Injuries and Fatalities) Among Older Pedestrians in Miami-Dade County (2000-2011)

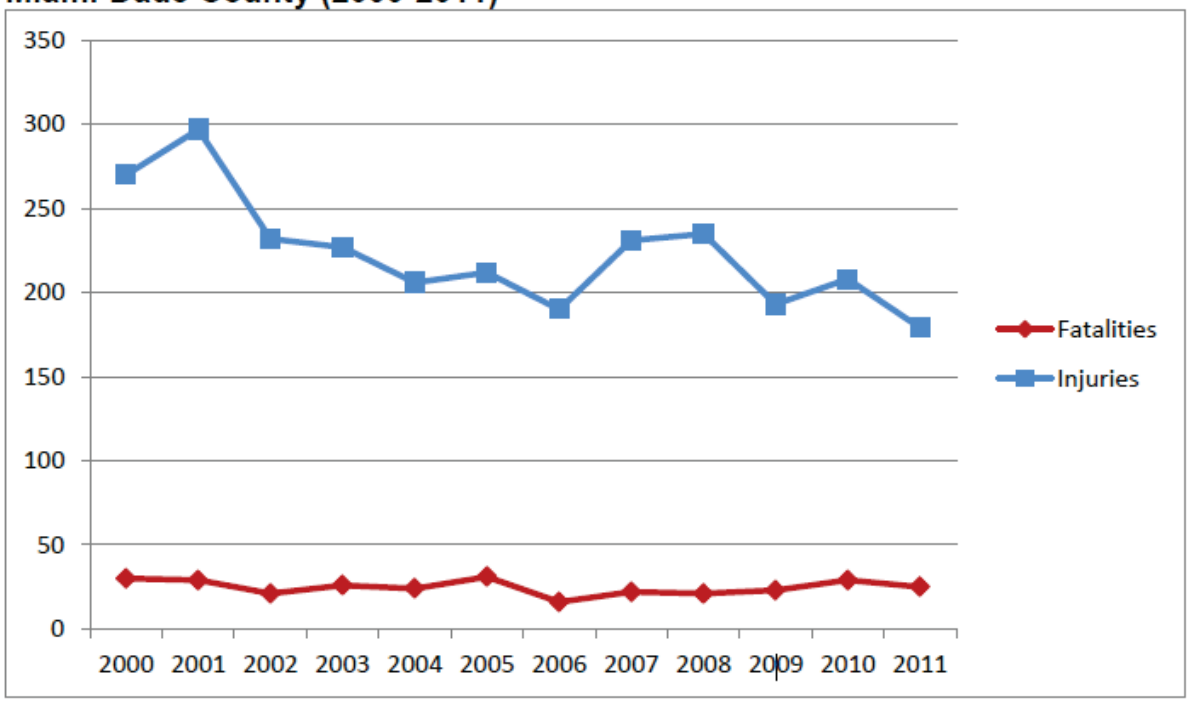


Table 1: Pedestrian Crashes (Injuries and Fatalities) Among Older Pedestrians in Miami-Dade County (2000-2011)

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
Injuries	270	297	303	296	263	212	190	236	237	193	210	178
Fatalities	30	29	21	26	24	31	16	22	21	23	29	25

Sources: (2000-2001) Prevention of Elderly Pedestrian Injury–A Comprehensive Approach and Analysis, Carl Schulman (2011), from data from Metropolitan Planning Organization of Miami-Dade; (2002-2011) FDOT State Safety Office Crash Analysis Reporting System (CARS), Special Data Requests, February 28, 2013 and April 16, 2013.

As shown below, the proportion of pedestrian fatalities among people age 65+ in Miami-Dade is more than twice that of their proportion in the population. This far exceeds the national statistic: only 19% of all pedestrian fatalities in 2010 were age 65+.

Table 2: Elder Pedestrian Crashes and Elder Populations in Miami-Dade (2005-2011)

Year	Fatalities Age 65+	Fatalities All Ages	65+ Fatalities as a Percentage of All Pedestrian Fatalities	65+ as Percentage of Total Population
2005	31	82	39.0%	13.7%
2006	16	96	18.8%	13.7%
2007	22	81	32.1%	13.6%
2008	21	67	32.8%	13.6%
2009	23	69	34.8%	14.0%
2010	29	73	39.7%	14.1%
2011	25	77	32.5%	14.2%

Sources: Pedestrian Fatalities, all ages: NHTSA Traffic Safety Facts Miami-Dade County, Florida (2006-2010, 2007-2011); Elder pedestrian fatalities: FDOT State Safety Office Crash Analysis Reporting System (CARS) special data request received February 28, 2013 and April 16, 2013; Elder Population: Florida Department of Elder Affairs County Profiles 2005-2011, http://elderaffairs.state.fl.us/doea/previous.php

The lessons learned in Miami-Dade County in working with an elderly pedestrian advisory group are summarized in Table 3.

Table 3: Lessons Learned in Miami-Dade County

	Challenges	Potential Solutions
Education	• Short-term funding hampers efforts to educate elder pedestrians on safe behaviors • Educational programs must be on-going to reach new audiences among the ½ million elders in Miami-Dade and Monroe Counties	• Miami-Dade County should allocate funding for ongoing elder pedestrian safety education on an annual basis • Multiple programs should be implemented concurrently to reach multiple audiences (urban/rural, language/ethnicity, pedestrians/drivers)
Enforcement	• Enforcement of pedestrian laws is difficult because a violation must be observed by a law enforcement officer • Although distracted driving is believed to play a large role in pedestrian crashes, Florida does not currently have distracted driving legislation	• Increase visible enforcement at locations known for pedestrian crashes • Recently proposed distracted driving legislation lacks teeth (must be observed by law enforcement, must be in combination with another moving violation, $30 fine)
Engineering	• Discussions about engineering a safer pedestrian environment often get mired in details concerning the relative merit of specific countermeasures or the entities responsible for specific locations (municipality, county road, state road) • It may take as long as 5 years after an engineering study is completed to make recommended changes to the pedestrian environment • Although plans for upgrades and new countermeasures exist, it is difficult for members of the public to access a timeline for implementation	• A more comprehensive, coordinated approach is needed to enhance pedestrian safety county-wide, across community boundaries and agency silos • More economical, immediate strategies (e.g., signal timing, signage) must be considered as part of the overall plan to improve safety • The community would benefit from having a full-time elder pedestrian advocate involved in multiple initiatives
Emergency Response	• Aging can affect visual, cognitive, and motor functions of older pedestrians • Emergency responders and clinical practitioners have useful information on pedestrian characteristics and specific locations in the community that are repeat problems	• Healthcare professionals should be engaged in increasing awareness of the increased risk among elder pedestrians • Elder pedestrian crash rates in South Florida should be viewed as a public health crisis for older adults; solutions should engage health-related resources to address this problem
Evaluation	• Evidence linking education efforts to behavior change and reduced crash rates is sparse • The effectiveness of specific countermeasures has been proven (e.g., countdown signals > 20 seconds)	• Educational programs should be required to evaluate outcomes, including behavior change • Plans should prioritize the implementation of proven countermeasures in areas of high pedestrian crash rates

Miami-Dade County MPO Aging Road Users Safety Plan

Topic: Enhanced Mobility for an Aging Population

Source: http://www.elderlawanswers.com/aging-drivers-and-the-law-1094
http://www.fdot.gov/research/Completed_Proj/Summary_PL/FDOT-BDV30-977-11-rpt.pdf

Author(s): **Florida Department of Transportation Research, Ed Hutchinson FDOT Planning Office and Mike Duncan of Florida State University**

Date: 2016

Abstract:

Studies show that aging adults have travel needs that can't be adequately addressed by today's transportation system. Automated vehicles (AVs), ranging from assistive technologies to full automation, may offer a safe and efficient transportation option for aging adults and other transportation disadvantaged populations and assist in maintaining independence, mobility, and overall life satisfaction.

Florida State University researchers divided this project into four tasks: a literature review of travel behavior and mobility needs of older adults, a literature review of travel safety and technology adoption by older adults, a survey of elderly residents' attitudes toward AVs and related technologies, and a social media data mining analysis of public perception of AVs.

The literature review of travel behavior revealed how aging adults travel and how their travel needs differ from those of younger people. Retiring from work is often the primary cause of changing travel needs. Older adults often remain dependent on cars, yet may cease driving at some point, typically due to deteriorating eyesight and safety concerns. However, walking, biking, or public transit may not provide viable options due to health restrictions, distances, or lack of connection to destinations.

In the second task, a literature review of technology adoption by older adults, researchers found that, while older drivers may have safety concerns because of decreased reaction times, eyesight, or cognitive issues, they may perceive AVs as even riskier as AVs represent a loss of control.

In the third task, the research team surveyed 459 Florida residents to assess their knowledge of, interest in, and willingness to adopt and use AVs. The survey also asked for respondent preferences among AV ownership models, price points, and perceived benefits and concerns related to AVs. Older adults, who were a large fraction of participants, were mostly supportive of AVs, yet they cited many technical, legal, insurance, and safety hurdles to be cleared.

The research team then mined social media, specifically Twitter, to develop a picture of public perception of and attitudes towards AVs. Over 7,000 tweets were collected, screened, and scored. The results suggested that Floridians had generally positive attitudes toward AVs.

Miami-Dade County MPO Aging Road Users Safety Plan

Topic: Florida Crash and Citation Reports and Statistics (Abstract 1 of 2)

Source: https://firesportal.com/Pages/Public/QuickStats.aspx

Author(s): Florida's Interchange Report System

Date: 2017 for 2015 Data

Abstract:

Florida Department of Highway Safety and Motor Vehicles — Create Date: 10/23/16

2015 Florida Resident Drivers in Crashes - Select Ages 65+

Person Age	Drivers in All Crashes	Percent All	Drivers Involved in Fatal Crash Events*	Percent Fatal	Drivers Fatal	Percent Fatal
65	4,813	8.19%	24	4.65%	10	3.86%
66	4,609	7.84%	30	5.81%	10	3.86%
67	4,529	7.71%	25	4.84%	15	5.79%
68	4,423	7.53%	36	6.98%	14	5.41%
69	3,597	6.12%	34	6.59%	14	5.41%
70	3,297	5.61%	34	6.59%	15	5.79%
71	3,131	5.33%	18	3.49%	10	3.86%
72	3,177	5.41%	19	3.68%	12	4.63%
73	2,852	4.85%	27	5.23%	11	4.25%
74	2,444	4.16%	20	3.88%	6	2.32%
75	2,221	3.78%	14	2.71%	5	1.93%
76	2,147	3.65%	31	6.01%	15	5.79%
77	2,067	3.52%	19	3.68%	8	3.09%
78	1,869	3.18%	18	3.49%	6	2.32%
79	1,704	2.90%	11	2.13%	6	2.32%
80	1,560	2.65%	16	3.10%	10	3.86%
81	1,408	2.40%	19	3.68%	11	4.25%
82	1,341	2.28%	13	2.52%	6	2.32%
83	1,303	2.22%	19	3.68%	15	5.79%
84	1,154	1.96%	11	2.13%	8	3.09%
85	989	1.68%	15	2.91%	10	3.86%
86	852	1.45%	14	2.71%	10	3.86%
87	766	1.30%	6	1.16%	4	1.54%
88	626	1.07%	8	1.55%	5	1.93%
89	500	0.85%	5	0.97%	1	0.39%
90+	1,392	2.37%	30	5.81%	22	8.49%
	58,771	100.00%	516	100.00%	259	100.00%

*Note: Drivers in Fatal Crashes is the sum of all drivers involved in crashes where a fatality occurred. In the event that a crash involved multiple drivers and a single fatality, all drivers will be counted in this total.

Miami-Dade County MPO Aging Road Users Safety Plan

Topic: Florida Crash and Citation Reports and Statistics (Abstract 2 of 2)

Source: https://firesportal.com/Pages/Public/QuickStats.aspx

Author(s): Florida's Interchange Report System

Date: 2017 for 2015 Data

Abstract:

Florida Department of Highway Safety and Motor Vehicles — Create Date: 10/23/16

2015

Florida Resident Drug Suspected Drivers in Crashes - Select Ages 65+

Person Age	Drivers in All Crashes	Percent All	Drivers Involved in Fatal Crash Events*	Percent Fatal	Drivers Fatal	Percent Fatal
65	8	8.00%	0	0.00%	0	0.00%
66	7	7.00%	1	5.00%	1	5.56%
67	10	10.00%	1	5.00%	1	5.56%
68	5	5.00%	1	5.00%	1	5.56%
69	9	9.00%	2	10.00%	1	5.56%
70	8	8.00%	3	15.00%	3	16.67%
71	3	3.00%	0	0.00%	0	0.00%
72	5	5.00%	2	10.00%	2	11.11%
73	5	5.00%	1	5.00%	1	5.56%
74	1	1.00%	0	0.00%	0	0.00%
75	5	5.00%	0	0.00%	0	0.00%
76	3	3.00%	1	5.00%	1	5.56%
77	1	1.00%	0	0.00%	0	0.00%
78	4	4.00%	1	5.00%	1	5.56%
79	4	4.00%	1	5.00%	1	5.56%
80	3	3.00%	0	0.00%	0	0.00%
81	3	3.00%	1	5.00%	1	5.56%
82	2	2.00%	0	0.00%	0	0.00%
83	1	1.00%	0	0.00%	0	0.00%
84	2	2.00%	1	5.00%	1	5.56%
85	2	2.00%	0	0.00%	0	0.00%
86	2	2.00%	1	5.00%	1	5.56%
87	1	1.00%	0	0.00%	0	0.00%
88	1	1.00%	1	5.00%	1	5.56%
89	2	2.00%	1	5.00%	0	0.00%
90+	3	3.00%	1	5.00%	1	5.56%
	100	100.00%	20	100.00%	18	100.00%

**Note: Drivers in Fatal Crashes is the sum of all drivers involved in crashes where a fatality occurred. In the event that a crash involved multiple drivers and a single fatality, all drivers will be counted in this total.*

Miami-Dade County MPO Aging Road Users Safety Plan

Topic: Florida Department of Transportation: 2017 Highway Safety Plan

Source: http://www.fdot.gov/safety/3-Grants/FL%202017%20HSP.pdf

Author(s): Florida Department of Transportation

Date: 2017

Abstract: The goal of Florida's Aging Road User Program is to improve the safety and mobility of the state's older drivers by reducing their fatalities, serious injuries, and crashes. At the same time, the program seeks to help them maintain their mobility and independence. FY2017 projects address aging road user safety from several angles and enlist local agencies to address this important issue in their specific geographic areas.

Today's older drivers are driving longer and more miles per year than in the past. Research shows that older adults can expect to outlive their ability to drive safely by 7 to 10 years. Florida leads the nation in older adults with 18 percent of its population 65 years of age and older. By the year 2030, over 27 percent of Floridians will be over age 65, with half of that group 75 or older. Mirroring this anticipated trend, an increasing proportion of licensed drivers in Florida are older as well.

Strategies

- Manage and evaluate aging road user safety, access, and mobility activities to maximize the effectiveness of programs and resources
- Provide the best available data to assist with decisions that improve aging road user safety, access, and mobility
- Provide information and resources regarding aging road user safety, access, and mobility
- Inform public officials about the importance and need to support national, State, regional, and local policy and program initiatives which promote and sustain aging road user safety, access, and mobility
- Promote and encourage practices that support and enhance aging in place (i.e., improve the environment to better accommodate the safety, access, and mobility of aging road users)
- Enhance aging road user safety and mobility through assessment, remediation, and rehabilitation
- Promote safe driving and mobility for aging road users through licensing and enforcement
- Promote the safe mobility of aging vulnerable road users (pedestrians, transit riders, bicyclists, and other non-motorized vehicles)
- Promote the value of prevention strategies and early recognition of at-risk drivers to aging road users and stakeholders
- Bridge the gap between driving retirement and mobility independence (i.e., alternative transportation mobility options, public transportation, and dementia-friendly transportation)

Miami-Dade County MPO Aging Road Users Safety Plan

Topic: Florida Department of Transportation: Aging Road Users

Source:
https://www.google.com/search?q=traffic+safety+plans+for+aging&biw=1536&bih=760&ei=phOjWLWDMcr8mAHDo6PYCg&start=50&sa=N

Author(s): Jim Boxold, Secretary, Florida Department of Transportation, et al

Date: 2016

Abstract:

Aging Road Users

Florida has the largest number of aging road users in the nation. Because today's older adults are expected to live longer and continue to drive longer than any previous generation, their impact on traffic safety can be substantial. As drivers age, their traffic risks increase. An 80-year-old woman driver is seven times more likely to be killed as a 45-year-old woman in trips that are the same distance.

Aging impacts vision, memory, physical strength, reaction time, and flexibility – all necessary for safe driving. Fortunately, the majority of aging drivers voluntarily limit their driving when their skills begin to decrease. They make choices to not drive at night, stay on familiar roadways, and drive more during the mid-day hours when traffic is not as heavy (10 a.m. to 2 p.m.). Whether it is an increase in the overall number of individuals age 65 or older, an increase in the number of vehicle miles they are traveling, or other causes, fatalities involving aging drivers have increased by 22 percent and serious injuries by 15 percent. To address the needs of aging road users, ***Florida's Safe Mobility for Life*** program provides a one-stop web site for safety and mobility resources; the nation's largest CarFit program helping drivers be safe and comfortable by improving the "fit" between drivers and their vehicles; a Find-a-Ride database that provides direct access to over 800 local transportation options; and roadway improvements such as larger lettering on signs and advance warning signs

Additional activities include helping people transition more easily from driving to other modes of transportation; developing and distributing resources and tools to support safe driving skills; educating and promoting driving evaluation strategies to prevent crashes; and supporting implementation of community design features that meet the mobility needs of an aging population. Pedestrian and bicyclist safety for aging road users also will be addressed as more seniors decide to walk or ride rather than drive.

Safe Mobility for Life Coalition

The mission of the *Safe Mobility for Life Coalition* is to improve the safety, access, and mobility of Florida's aging road users by implementing an aging Road User Strategic Safety Plan to eliminate fatalities and reduce serious injuries. The *Safe Mobility for Life Coalition works* with road users age 50 and up with a focus on users age 65 and up to ensure road users are prepared to transition from driving when that time comes.

Strategies

• Promote and educate drivers on comprehensive driving valuations and safety strategies to prevent crashes

• Expand transportation choices and promote community design features to meet the mobility needs of an aging population.

• Develop and distribute resources and tools to support safe driving skills and encourage early planning to safely transition from driving.

Miami-Dade County MPO Aging Road Users Safety Plan

Topic: Florida Department of Transportation: Data on Aging Drivers

Source: http://www.fdot.gov/SearchResults.shtm?cx=017316194735045521938%3Avyo1fdrdg3g&cof=FORID%3A11&ie=UTF-8&q=aging&sa=

Author(s): Florida Department of Transportation

Date: 2017

Abstract:

An increasing number of adults age 65 and older travel Florida's roads and highways as drivers, passengers, motorcyclists, bicyclists and pedestrians. From 2007 to 2009, adults age 65 and older made up an increasing percentage of all fatalities from crashes over the three years – 18.3 percent, 18.7 percent and 20.6 percent, respectively.

As shown in the *2012 Strategic Highway Safety Plan*, to drive down the numbers, the following are the strategies thatwere focused upon:

1. Manage and evaluate aging road user safety, access, and mobility activities to maximize the effectiveness of programs and resources;
2. Provide the best available data to assist with decisions that improve aging road user safety, access, and mobility;
3. Provide information and resources regarding aging road user safety, access, and mobility;
4. Inform public officials about the importance of and need to support national, state, regional, and local policy and program initiatives which promote and sustain aging road user safety, access, and mobility;
5. Promote and encourage practices that support and enhance aging in place (i.e., improve the environment to better accommodate the safety, access, and mobility of aging road users);
6. Enhance aging road user safety and mobility through assessment, remediation, and rehabilitation;
7. Promote safe driving and mobility for aging road users through licensing and enforcement;
8. Promote the safe mobility of aging vulnerable road users (pedestrians, transit riders, bicyclists and other non-motorized vehicles);
9. Promote the value of prevention strategies and early recognition of at-risk drivers to aging road users and stakeholders; and
10. Bridge the gap between driving retirement and mobility independence (i.e., alternative transportation mobility options, public transportation, and dementia-friendly transportation).

Miami-Dade County MPO Aging Road Users Safety Plan

Topic: Florida Driver Licensing Laws for Seniors

Source: http://seniordriving.aaa.com/states/florida/

Author(s): American Automobile Association

Date: 2017

Abstract:

A rapidly growing number of senior drivers on our nation's highways has prompted many states to develop special tools, programs and resources to assist older adults and their families to better manage safe driving.

Many states also have enacted driver's licensing laws with special provisions for older adults. Summarized below are programs and licensing laws that exist in Florida.

In Florida, motorists are required to renew their driver's licenses every eight years, in person every other renewal. Motorists must pass a vision test or submit test results from a vision specialist at every in-person renewal. However, **the renewal process for older adults includes the following condition: More frequent renewal.** People age 80 and older are required to renew their driver's licenses every six years.

Reporting a Potential Unsafe Driver

Florida, like many other states, has a process for reporting a potentially unsafe driver to its licensing office or department of motor vehicles. Law enforcement officers and any physician, person or agency who knows of any licensed driver's or applicant's mental or physical disability to drive or need to obtain or to wear a medical identification bracelet is authorized to report these conditions to the Florida Division of Motorist Services. The report should be made in writing giving the full name, date of birth, address and a description of the alleged physical or mental disability of any person over 15 years of age that could affect the driving ability. Detailed information is provided in the *Medical Conditions & Driver Safety* brochure.

If a state agency finds a complaint reasonable and credible, it may ask the reported driver to submit additional information to the Florida Division of Motorist Services, which could be used to help determine if a screening or assessment is justified. Form #72190 may be used to report these concerns. These reports are confidential and used only to determine the qualifications of the individual to operate a motor vehicle on Florida's highways. No civil or criminal action may be brought against any physician, person or agency for providing this information.

Miami-Dade County MPO Aging Road Users Safety Plan

Topic: Florida Grand Driver: How Aging Affects Driving

Source: https://flhsmv.gov/FloridaGrandDriver/pdf/FLGDBrochure.pdf

Author(s): Florida Department of Transportation Safety Office

Date:

Abstract:

Florida GrandDriver is an education and awareness program of the Florida Department of Highway Safety and Motor Vehicles FDHSMV) and is based on a program developed by the American Association of Motor Vehicle Administrators (AAMVA). The goal of the program is to educate the public about the effects of age on driving ability and to encourage drivers to make appropriate choices as they age to maximize personal and Community safety

Warning Signs

Some of the signs that an older driver needs assistance:

- Neglects to buckle up
- Has difficulty working the pedals
- Has difficulty merging on freeways, or turning onto busy streets
- Has trouble seeing other vehicles, cyclists or pedestrians, especially at night
- Ignores or "misses" stop signs and other traffic signals
- Reacts slowly to sirens and flashing lights of emergency vehicles
- Weaves, straddles lanes, drifts into other lanes or changes lanes without signaling
- Gets lost or disoriented easily, even in familiar places

In addition, two or more traffic tickets, warnings, collisions or "near-misses" in the past two years may signal a problem.

Get Around Safe & Sound...

Basic rules for safe driving

- Always wear corrective lenses as required.
- Be rested. Don't drive when you are physically exhausted or sleep deprived.
- Don't wear sunglasses in dim or dark conditions.
- Don't drink and drive.
- Ask your doctor or pharmacist how your medications affect driving.
- Always, always wear a safety belt.

Avoid Risky Drive Times

- Minimize or prevent high-stress situations by avoiding difficult traffic situations. Older drivers may continue to drive safely for many years by adjusting their habits:
  - ✓ Drive during daylight.
  - ✓ Drive in good weather.
  - ✓ Avoid rush-hour traffic.
  - ✓ Limit fast-paced highway driving.

Find A Safe Way

Consider driving with a friend or map out and practice the safest ways to routine destinations: grocery stores, churches, doctors' offices, shopping centers, etc. Look for:

- Well-lit streets
- Left turns at controlled intersections with left-turn arrows
- Clear signs and well-marked lanes
- Easy parking

Go Back To School

A driving course just for older adults can update drivers on traffic laws and suggest useful ways to adapt driving habits to accommodate aging. Some courses even qualify older drivers for a reduction in auto insurance costs.

Drive A Safe Car

Look beyond the conventional safety features on a car. Like all drivers, older drivers should be sure their car offers a comfortable fit, maximum visibility and minimal physical strain. Consider these features:

- Height-adjustable seats
- Tilt/telescoping steering wheel
- Height-adjustable safety belt anchors
- Good visibility
- Legible instruments
- Large, glare-proof mirrors
- Push-button controls
- Power windows and door locks
- Power steering
- Equipment such as pedal extenders and hand controls (for drivers with special needs)

Get Physical

Strength, flexibility and overall wellness contribute to the ability of an older driver to remain a safe driver. Drivers should:

- Receive regular medical and eye exams to identify physical conditions that may affect driving.
- Consult with a doctor about exercising to maintain the flexibility and strength needed for safe driving.

Plan Ahead

Retiring from driving doesn't mean retiring from life. Plan ahead and learn about the options for getting around when driving isn't an option:

- Public transportation such as bus and trolley services
- Senior shuttles
- Relocate to a walkable community.
- Community driving services
- Friends and family
- Taxi services

How To Help An Older Driver

It's not easy to think about aging, much less to talk about it. Bringing up the subject of safe driving may be awkward, but if you can talk now, you and your family can have a plan for the coming years. Here are some tips for making conversation easier:

- Recognize that an older driver is not necessarily an unsafe driver. Decisions will be made based on the specific needs of the person and the situation.
- Acknowledge that giving up (or even limiting) driving is a big deal – symbolically and practically – for most older drivers.
- Emphasize that safety is most important.
- Review specific transportation needs and develop a way to accommodate them.
- Agree together on a plan of action. It may begin with avoiding risky driving situations, seeking education, rehabilitation or adaptive equipment and eventually lead to giving up the keys.

Miami-Dade County MPO Aging Road Users Safety Plan

Topic: Florida Leads Nation In Most Dangerous Metro Areas for Preventable Pedestrian Deaths

Source: http://states.aarp.org/florida-leads-nation-dangerous-metro-areas-preventable-pedestrian-deaths/

Author(s): Patti Shea, AARP Florida

Date: 2017

Abstract:

Efforts to improve Florida's livability are growing, but the Sunshine State still ranked as the nation's deadliest state for pedestrians, with eight out of the 10 most dangerous metro areas for pedestrians to be found in Florida, according to a new report released by the National Complete Streets Coalition, a program of Smart Growth America, AARP and other organizations. The report presents data on pedestrian fatalities and injuries in over 100 U.S. metro areas, as well as state and county assessments and an online, interactive map showing the locations where pedestrian fatalities have occurred.

The report ranked the Cape Coral-Ft. Myers area as the most dangerous metro area in the nation, with Palm Bay-Melbourne-Titusville, Orlando-Kissimmee-Sanford, Jacksonville, and Deltona-Daytona Beach-Ormond Beach making up the next four most dangerous metro areas. Lakeland-Winter Haven ranks sixth in the nationwide ranking, Tampa-St. Petersburg-Clearwater ranks seventh and North Port-Sarasota-Bradenton ranks tenth. ***Miami-Ft. Lauderdale-West Palm Beach ranks 11th in the study***.

The report comes against a background of rising pedestrian deaths nationally, driven in part by decades-old street designs that mix pedestrian traffic with fast-moving vehicles. But Florida's pedestrian-danger index has actually fallen since previous reports were issued, and federal, state and local officials have begun to put better policies in place, the report says.

"Clearly, Florida has a lot of work to do to help keep older pedestrians safer. But that work has begun," said Laura Cantwell, AARP Florida's Associate State Director for Livable Communities and a leader in helping to encourage better pedestrian-safety policies statewide. Cantwell cited work by the Florida Department of Transportation as one encouraging sign: http://www.aarp.org/livable-communities/getting-around/info-2016/interview-billy-hattaway-FDOT-complete-streets.html

Concerns about pedestrian safety are one reason why more and more Florida cities and counties are joining the AARP-World Health Organization Age-Friendly Community Network, Cantwell noted that the Florida Department of Transportation has adopted in December, 2015, and is aggressively implementing, a Complete Streets plan. Since 2011, Florida's pedestrian danger index in this study has dropped. Still, Cantwell noted, Florida pedestrians and motorists should take careful note of the study's findings. "The report underscores that people 50 and older are more vulnerable if struck in a traffic accident," Cantwell said.

Solutions are available, including reducing the number of lanes and installing center medians on streets that mix pedestrian, bicycle, foot and vehicular traffic, the report said.

Miami-Dade County MPO Aging Road Users Safety Plan

Topic: Georgia's Older Driver Safety Program (Georgia Department of Public Health)

Source: https://dph.georgia.gov/ODS

Author(s): Governor's Office of Highway Safety

Date: 2012

Abstract:

Older drivers in Georgia have an excessively high rate of motor vehicle fatalities compared to other adult age groups, on a per vehicle mile traveled (VMT) basis. In 2008, drivers 65 years and older had the highest driver crash fatality rates (14.2 per 1,000 crashes) among all driving age populations, including teenagers. Also, in 2008, 154 (69 %) of the 222 older drivers involved in fatal crashes in Georgia died. By 2025, in Georgia, motor vehicle crashes will account for the second leading cause of unintentional injury deaths among older adults age 65 and older.

In 2012, drivers 65 years of age and older were involved in 204 fatal traffic crashes in Georgia. The majority of crashes involving older drivers in 2012 occurred on weekdays* and during the day between the hours of noon and 3 pm.

Twenty percent of all 2012 occupant fatalities involved a crash with a driver 65 years of age and older.

The most common contributing factor for drivers ages 65 and older for both fatal and all crashes was failure to yield right-of-way. This includes improper left turns. The 2nd contributing cause for fatal crashes was failure to keep in proper lane. Following too close was the 2nd most common cause for drivers 65 and older involved in a nonfatal crash.

Fatal Older Driver Crashes			All Older Driver Crashes		
1	Failure to Yield Right of Way	32%	1	Failed to Yield	22%
2	Illegal Driving on Shoulder, Ditch, Median	21%	2	Following too Close	21%
3	Failure to Obey Traffic Lights/Signs	10%	3	Improper Backing	10%
4	Failure to keep in Proper Lane	9%	4	Changed Lanes Improperly	8%
5	Following Improperly	8%	5	Misjudged Clearance	7%
Source: Fatality Analysis Reporting System (FARS)			Source: Georgia DOT Crash Data revised by GA DPH, 2015		

Injuries -- Torso (32%) and traumatic brain (21%) injuries accounted for over half of crash -related hospitalizations in older drivers. The majority of torso and head injuries involved damage to internal organs. The average length of hospital stay was 7 days. There were 479 older driver hospitalizations in 2012 with about $40 million hospital charges. The average hospitalization charge was $80,000.

Miami-Dade County MPO Aging Road Users Safety Plan

Topic: Georgia's Older Driver Safety Program (Georgia Governor's Office of Highway Safety)

Source: http://www.gahighwaysafety.org/campaigns/older-drivers/

Author(s): Georgia Governor's Office of Highway Safety

Date: 2013

Abstract:

The Mission of the Georgia Governor's Office of Highway Safety is to educate the public on traffic safety and facilitate the implementation of programs that reduce crashes, injuries, and fatalities on Georgia roadways. The Older Driver Safety Program goal is to maintain the mobility of older adults while keeping them safe. The program utilizes a public health approach to develop collaborative relationships and processes to determine appropriate educational, environmental, and policy interventions for health and safety professionals, as well as the public. To maintain the mobility and safety of older drivers, while making the roadways safer for all road users. The group primarily focuses on reducing the number of injuries and fatalities experienced by older drivers, and where possible, enhancing mobility options for older adults. The task force will implement activities geared toward the five E's:

Education, Engineering, Enforcement (policy), EMS, and Evaluation.

Education -- Goal: To educate professionals, older adults, their family members, and the community about the risk and protective factors associated with driving safety. The program will provide presentations and educational sessions to professionals, community organizations, older adults, caregivers, and others across many disciplines to foster partnerships, collaboration, increase of knowledge about older driver safety concerns and available resources.

Alternative Transportation -- Goal: The goal for alternative transportation is to address older adult's mobility issues and improve access to mobility options in Georgia. This goal includes researching other states and their progress with alternative transportation, as well as bringing together alternative transportation partners across Georgia to foster a collaborative response.

Engineering: Older Driver Safety (Train-the-Trainer) Workshop -- Goal: To address the knowledge gaps among traffic engineers and highway designers. This workshop is held annually and targets traffic engineers throughout Georgia.

Pilot Intervention -- Goal: The pilot project will involve collaboration with Georgia Department of Transportation (GDOT) engineers, assessing environmental design features aimed at maintaining the safety of older adults who drive, walk, or take alternative transportation.

CarFit Program -- Goal: To educate drivers, especially older adults on how to fit correctly and safely in their seat while driving. It is a free educational program offered by Georgia Traffic Injury Prevention Institute in Georgia (GTIPI) to train individuals to be certified CarFit Technicians and/or Event Coordinators. Once certified, CarFit events are voluntarily hosted at churches, senior community centers, and shopping centers. The event lasts approximately four hours.

Yellow Dot Program - - Goal: To provide responders with critical health, identity, and emergency contact information about program participants, which will increase responders' ability to assist older drivers and those experiencing a medical emergency at home, who are unable to communicate at the time. Participation is voluntary, and individuals who choose to enroll are given a Yellow Dot decal to affix to a designated spot on their vehicle's window. The "yellow dot" indicates to responders that there is a folder in the glove compartment that contains the participant's information.

Miami-Dade County MPO Aging Road Users Safety Plan

Topic: Giving Up the Keys Equals Increased Risk of Health Problems in Older Adults

Source: http://newsroom.aaa.com/2015/07/giving-up-the-keys-equals-increased-risk-of-health-problems-in-older-adults/

Author(s): American Automobile Association and **Columbia University**

Date: 2015

Abstract: Older adults who have stopped driving are almost two times more likely to suffer from depression and nearly five times as likely to enter a long-term care facility than those who remain behind the wheel, according to a new report released by the AAA Foundation for Traffic Safety and Columbia University. The study examined older adults who have permanently given up driving and the impact it has on their health and mental well-being. The importance of understanding the effects this lifestyle change has on older adults is essential, as the number of drivers aged 65 and older continues to increase in the United States with nearly 81 percent of the 39.5 million seniors in this age group still behind the wheel.

"This comprehensive review of research confirmed the consequences of driving cessation in older adults," Peter Kissinger, President and CEO of the AAA Foundation for Traffic Safety. "The decision to stop driving, whether voluntary or involuntary, appears to contribute to a variety of health problems for seniors, particularly depression as social circles are greatly reduced."

The AAA Foundation's report on *Driving Cessation and Health Outcomes for Older Adults* examined declines in general health and physical, social, and cognitive functions in former drivers. With the cessation of driving, the study found:

- Diminished productivity and low participation in daily life activities outside of the home;
- Risk of depression nearly doubled;
- 51 percent reduction in the size of social networks over a 13-year period;
- Accelerated decline in cognitive ability over a 10-year period; and former drivers were
- Five times as likely to be admitted to a long-term care facility.
- A number of studies found that driving cessation was a strong predictor of 3-year mortality risk, as non-drivers were four to six times as likely to die as drivers, after adjusting for baseline psychological, general health, sensory, and cognitive abilities.

Implications -- Driving cessation in older adults appears to contribute to a variety of health problems, particularly depression. To mitigate the potential adverse effects of driving cessation on health and well-being in older adults, intervention programs ensuring safe mobility and social functions may be needed.

"Maintaining independence by continuing to drive safely is important to overall health and well-being. When the decision is made to relinquish the keys, it is vital to mitigate the potential negative effects through participation in programs that allow seniors to remain mobile and socially connected," said Kissinger.

Miami-Dade County MPO Aging Road Users Safety Plan

Topic: Hanging Up The Keys?

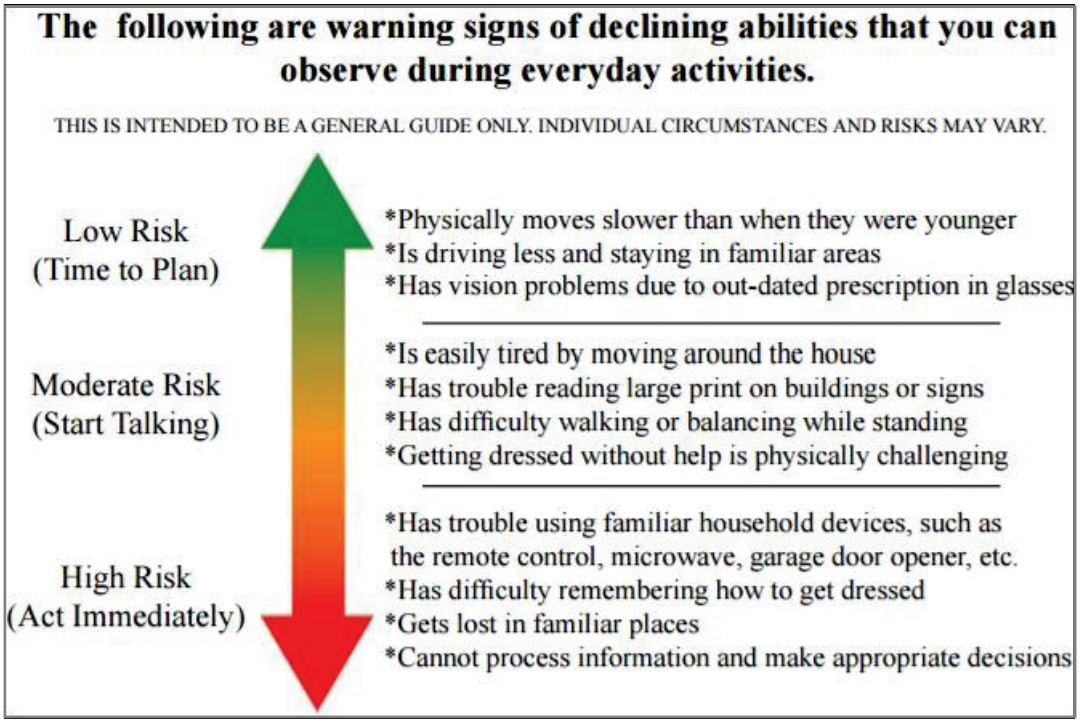
Source: http://www.nadtc.org/wp-content/uploads/Hanging_Up_the_Keys_Guide-Cover.pdf

Author(s): National Aging and Disability Transportation Center and **Annie Harmon, University of Missouri—St. Louis,**

Date: 2016

Abstract:

Hundreds of thousands of older Americans choose to stop driving every year. Here are two guides that help evaluate whether that time has arrived.



Driving Checklist

☐Yes	☐ No	1. Other drivers honk at me.
☐Yes	☐ No	2. Busy intersections bother me.
☐Yes	☐ No	3. I avoid left-hand turns.
☐Yes	☐ No	4. Other cars seem to appear out of nowhere and drive too fast.
☐Yes	☐ No	5. I have been stopped by the police recently for my driving.
☐Yes	☐ No	6. Turning the steering wheel is difficult for me.
☐Yes	☐ No	7. I've had more "near misses" lately.
☐Yes	☐ No	8. I have trouble seeing street signs in time to respond to them.
☐Yes	☐ No	9. I have recently caused a car accident or fender bender.
☐Yes	☐ No	10. I get confused or lost in familiar places.
☐Yes	☐ No	11. It's hard for me to look over my shoulder when I am backing up or changing lanes.
☐Yes	☐ No	12. My friends and family tell me they are worried about my driving, or that they are afraid to ride in the car when I am driving.

If you checked "Yes" to any of these statements, you may be putting yourself and others at risk every time you drive. This guide can help you figure out your options.

Miami-Dade County MPO Aging Road Users Safety Plan

Topic: Helpful Facts for Aging Drivers: Thinking About Giving Up Your Driver License?

Source: https://dps.sd.gov/licensing/driver_licensing/agingdrivers.aspx

Author(s): South Dakota Department of Public Safety

Date: 2016

Abstract:

Helpful Facts for Aging Drivers

Am I a Safe Driver? Do any of the following apply to you?

- I get lost while driving.
- My friends and family members say they are worried about my driving.
- Other cars seem to appear out of nowhere.
- I have trouble seeing signs in time to respond to them.
- Other drivers drive too fast.
- Other drivers often honk at me.
- Driving stresses me out.
- After driving, I feel tired.
- I have had more "near misses" lately.
- Busy intersections bother me.
- Left-hand turns make me nervous.
- The glare from oncoming headlights bothers me.
- My medication makes me dizzy or drowsy.
- I have trouble turning the steering wheel.
- I have trouble pushing down on the gas pedal or brakes.
- I have trouble looking over my shoulder when I back up.
- I have been stopped by the police for my driving recently.
- People will no longer accept rides from me.
- I don't like to drive at night.
- I have more trouble parking lately.

If any of the above apply, safety may be at risk when you drive. Talk to your doctor about ways to improve your safety when you drive.

Tips for Safe Driving

Tip #1: Drive with care.

Always .....

- Plan your trips ahead of time. Decide what time to leave and which roads to take. Try to avoid heavy traffic, poor weather, and high-speed areas.
- Wear your seat belt and wear it correctly. It should go over your shoulder and across your lap.
- Drive at the speed limit. It is unsafe to drive too fast or too slow.
- Be alert! Pay attention to traffic at all times.
- Keep enough distance between you and the car in front of you.

- Be extra careful at intersections. Use you turn signal and remember to look around you for people and other cars.
- Check your blind spot when changing lanes or backing up.
- Be extra careful at train tracks. Remember to look both ways for trains.
- When you take a new medicine, ask your doctor or pharmacists about side effects and drug interactions. Many medicines may affect your driving even when you feel fine. If your medicine makes you dizzy or drowsy, talk to you doctor to find out ways to take your medicine so it does not affect your driving.

Never .....

- Drink and drive.
- Drive when you feel angry or tired. If you start to feel tired, stop your car somewhere safe. Take a break until you feel more alert.
- Eat, drink, use a cell phone, or text while driving.

If .....

- You don't see well in the dark, try not to drive at night or during storms.
- You have trouble making left turns at an intersection, make three right turns instead of one left turn.
- You can, avoid driving in bad weather, such as during rain, sleet, or snow.

Tip #2: Take care of your car.

- Make sure you have plenty of gas in your car.
- Have your car tuned regularly.
- Keep your windshields and mirrors clean.
- Keep cloth in your car for cleaning windows.
- Replace your windshield wiper blades when they become worn.
- Consider using Rain-X or a similar product to keep your windows clear.
- If you are shopping for a new car, look for a car with power steering and automatic transmission.

Tip #3: Know where you can find a ride.

How do you get around when your car is in the shop? If you do not know the answer to this question, it's time for you to put together a transportation plan. A transportation plan is a list of all of the ways you can get around. Use this list when your car is in the shop or when you do not feel safe driving. Your transportation plan might include:

- Rides from friends and family.
- Taxi
- Bus
- Senior shuttle

If you need help creating transportation plans, your doctor can get you started.

Tip #4: Take a driver safety class.

To learn how to drive more safely, try taking a class. In a driver safety class, the instructor teaches you skills you can use while driving. To find a class near you, call one of the following programs or click on the links below:

How to Help the Older Driver

As experienced drivers grow older, changes in their vision, attention, and physical abilities may cause them to drive less safely than they used to. Sometimes these changes happen so slowly the driver is not even aware their driving safety is at risk.

If you have questions about a loved one's driving safety, here is what you can do to help him or her to stay safe AND mobile.

Is your loved one a safe driver?

If you have the chance, go for a ride with your loved one. Look for the following warning signs in his or her driving:

- Forgets to buckle up
- Does not obey stop signs or traffic lights
- Fails to yield to the right of way
- Drives too slowly or too quickly
- Often gets lost, even on familiar routes
- Stops at a green light or at the wrong time.
- Does not seem to notice other cars, walkers, or bike riders on the road.
- Does not stay in his or her lane
- Is honked at or passed often
- Reacts slowly to driving situations
- Makes poor driving decisions.

Other signs of unsafe driving include:

- Recent near misses or fender benders
- Recent tickets for moving violations
- Comments from passengers about close calls, near misses, or the driver not seeing other vehicles
- Recent increase in the car insurance premium

If you are concerned about your loved one's driving skills, what can you do?

- Talk to your loved one. Say you are concerned about his or her driving safety. Does he or she share your concern?
- Do not bring up your concerns in the car. It is dangerous to distract the driver! Wait until you have his or her full attention.
- Explain why you are concerned. Give specific reasons. For example, recent fender benders, getting lost, or running stop signs.
- Realize your loved one may become upset or defensive. After all, driving is important to their independence and self-esteem.
- If your loved one does not want to talk about driving at this time, bring it up again later. Your continued concern and support may help him or her feel more comfortable with this topic.
- Be a good listener. Take your loved ones concerns seriously.
- Request a re-evaluation.

Encourage aa visit to the doctor. The doctor can check your loved one's medical history, list of medicines, and current health to see if any of these may be affecting his or her driving safety. The doctor can also provide treatment to help improve driving safety.

Encourage your loved one to take a driving test. A driver rehabilitation specialist (DRS) can assess your loved one's driving safety through an office exam and driving test. The DRS can also teach special techniques or suggest special equipment to help him or her drive more safely. To find a DRS in your area, ask your doctor for a referral or contact the Association for Driver Rehabilitation Specialists. DRS contact information is listed above.

How to help when your loved one retires from driving. At some point, your loved one may need to stop driving for his or her safety and the safety of others on the road. You and your loved one may come to this decision yourselves, or at the recommendation of the doctor, driver rehabilitation specialist, driving specialist, or the Driver Licensing Program. When someone close to you retires from driving, there are several things you can do to make this easier for him or her:

- **Create a transportation plan.** It is often easier for people to give up driving if they have other ways to get around. Help your loved one create a list of tried and true ride options. This list can include:

  - ✓ The names and phone numbers of friends and relatives who are willing to give rides, with the days and times they are available.
  - ✓ The phone number of a local taxi company.
  - ✓ Which bus to take to get to a specific place. Try riding the bus with your loved one the first time to help him or her feel more comfortable.
  - ✓ The phone number for a shuttle service. Call your local community center to see if they offer a door-to-door shuttle service for older passengers.
  - ✓ The names and phone numbers of volunteer drivers. Call your local community center or church to see if they have a volunteer driver program.

Miami-Dade County MPO Aging Road Users Safety Plan

Topic: History of Falling Increases Crash Risk by 40 Percent for Older Drivers

Source: http://newsroom.aaa.com/2016/03/history-of-falling-increases-crash-risk-by-40-percent-for-older-drivers/

Author(s): American Automobile Association (AAA)

Date: 2016

Abstract: Older drivers with a history of falling are 40 percent more likely to be involved in crashes than their peers, according to a study by the AAA Foundation for Traffic Safety. Falls limit an older drivers' ability to function behind the wheel and can make driving risky for themselves and others on the road. These findings are important because a record 12 million older adults will experience a fall annually.

"Drivers age 60 and older are involved in more than 400,000 crashes each year, and it's important that ways be found to keep them and others safe on the road." said Peter Kissinger, President and CEO of the AAA Foundation for Traffic Safety. "This research is critical because it shows that we can now use an older driver's fall history to identify if they are at greater risk for a crash."

The report, *Associations Between Falls and Driving Outcomes in Older Adults*, is the latest research released in the AAA Foundation for Traffic Safety's Longitudinal Research on Aging Drivers (LongROAD) project. Researchers from the University of Colorado Anschutz Medical Campus along with the AAA Foundation for Traffic Safety say that falls can increase crash risk in two ways:

- Falls can result in a loss of functional ability (i.e. wrist fractures or a broken leg), which can make it difficult for older drivers to steer or brake to avoid a crash.
- Falls can increase an individual's fear of falling, which can lead to a decrease in physical activity that weakens driving skills.

When it comes to physical health, you either use it or lose it," said Jake Nelson, AAA's Director of Traffic Safety and Advocacy. "Falls often scare people into being less active, but decreasing physical activity can weaken muscles and coordination and make someone more likely to be in a crash."

The research suggests that seniors and their families should view falls as a possible early indicator of declining physical fitness. Addressing the health issues that originally led to the fall such as lower body weakness, poor balance, slow reaction time, certain medications, dizziness, or vision problems, can help older drivers strengthen their functional ability and lower their risk for crashing or experiencing another fall in the future.

"Older drivers should find activities that enhance balance, strengthen muscles and promote flexibility," continued Nelson. "Even a low impact fitness training program or driver improvement course can help safely extend an older driver's years on the road."

Fall prevention is a great way for older drivers to keep themselves and others safe while on the road. Those concerned about a parent or other older driver should help them monitor risk factors that address health concerns or household dangers. AAA recommends a series of exercises and stretches to improve neck, shoulder, trunk, back and overall body flexibility, which can help a driver who has suffered from a recent fall.

Miami-Dade County MPO Aging Road Users Safety Plan

Topic: Injury Prevention and Control: Motor Vehicle Safety, Older Adult Drivers

Source: https://www.cdc.gov/motorvehiclesafety/older_adult_drivers/index.html

Author(s): Center for Disease Control and Prevention

Date: 2017

Abstract:

Who is most at risk?

- Involvement in fatal crashes, per mile traveled, begins increasing among drivers ages 70–74 and are highest among drivers ages 85 and older. This trend has been attributed more to an increased susceptibility to injury and medical complications among older drivers rather than an increased risk of crash involvement.
- Across all age groups, males have substantially higher death rates than females.
- Age-related declines in vision and cognitive functioning (ability to reason and remember), as well as physical changes, may affect some older adults' driving abilities.

How can older driver deaths and injuries be prevented?

Older adults can take several steps to stay safe on the road.

- Use seat belt -- While 60% of passenger vehicle occupants (drivers and passengers) ages 65-74 and 69% of passenger vehicle occupants ages 75+ killed in crashes were wearing seat belts at the time of the crash, seat belt use among younger adults ranged from 38% (among those ages 21-24) to 55% (among those ages 55-64).
- Drive when conditions are the safest -- Older drivers tend to limit their driving during bad weather, at night, and on high-speed roads, in comparison to younger drivers.
- Don't drive when impaired -- Older adult drivers are less likely to drink and drive than other adult drivers.[9] In 2015, only 6% of drivers ages 75+ years involved in fatal crashes had a blood alcohol concentration (BAC) of 0.08 grams per deciliter (g/dL) or higher, compared to 28% of drivers ages 21-24 years. Overall, 20% of drivers, regardless of age, involved in fatal crashes had a BAC of 0.08 g/dL or higher.
- Exercising regularly to increase strength and flexibility.
- Asking your doctor or pharmacist to review medicines–both prescription and over-the counter–to reduce side effects and interactions.
- Having eyes checked by an eye doctor at least once a year. Wear glasses and corrective lenses as required.
- Driving during daylight and in good weather.
- Finding the safest route with well-lit streets, intersections with left turn arrows, and easy parking.
- Planning the route before driving.
- Leaving a large following distance behind the car in front of you.
- Avoiding distractions in your car, such as listening to a loud radio, talking on your cell phone, texting, and eating.
- Considering potential alternatives to driving, such as riding with a friend or using public transit, which you can use to get around.

Miami-Dade County MPO Aging Road Users Safety Plan

Topic: **Keeping Baby Boomers Mobile: Preserving the Mobility and Safety of Older Americans**

Source: http://www.tripnet.org/docs/Older_Drivers_TRIP_Report_Feb_2012.pdf

Author(s): *TRIP—a national transportation research institute,* and the American Association of State Highway and Transportation Officials

Date: 2012

Abstract:

OLDER DRIVER MOBILITY AND QUALITY OF LIFE

Older Americans are more mobile and active than ever and want to maintain that lifestyle for as long as possible. Private vehicles remain the overwhelming transportation mode of choice for older Americans as the safest, easiest and most convenient means of transportation. Although overall traffic fatality rates have fallen to record lows in recent years, older drivers still make up a disproportionately high share of those involved in fatal traffic crashes. Roadway safety improvements designed to make it easier for older drivers to navigate traffic are becoming increasingly important, as the largest generation in American history grapples with the effects of aging while trying to maintain a level of mobility that matches its active lifestyle.

RECOMMENDATIONS FOR IMPROVING MOBILITY AND SAFETY FOR OLDER AMERICANS -- The following set of recommendations can improve the mobility and safety of older Americans. These improvements will also improve mobility and safety for all motorists.

Safer Roads

- Clearer, brighter and simpler signage with larger lettering, including overhead indicators for turning lanes and overhead street signs. This should include minimum levels of retro-reflectivity.
- Brighter street lighting, particularly at intersections, and bright, retroreflective pavement markings. Studies also show that increasing the width of pavement markings from 4 inches to 6 inches helps with decreasing lane departure and crashes, especially with older drivers.
- Where appropriate, widening or adding left-turn lanes and increasing the length of merge or exit lanes.
- Where appropriate, widening lanes and shoulders to reduce the consequence of driving mistakes.
- Adding rumble strips to warn motorists when they are leaving the roadway.
- Making roadway curves more gradual and easier to navigate.
- Where appropriate, design and operate roads to accommodate all users of the roadway.
- Adding countdown pedestrian signals.
- Adding refuge islands for pedestrians at intersections.
- Using the Federal Highway Administration's "Highway Design Handbook for Older Drivers and Pedestrians" for examples of cost-effective safety infrastructure upgrades.

Safer Road Users

- Promoting education and training programs for older drivers.
- Evaluating and monitoring of "at-risk" older motorists through appropriate licensing requirements.

Safer Vehicles

- Improving crashworthiness of vehicles to better protect occupants and withstand impacts.
- Raising awareness among older drivers of appropriate safety precautions and seat belt use.
- Developing Intelligent Transportation System (ITS) technologies, including crash avoidance technologies.

Improved Transportation Options

- Ensuring public transit vehicles, facilities and stops are easily accessible and accommodating to elderly or disabled passengers.
- Expanding bus and transit routes.
- Implementing non-traditional and public sector approaches that are tailored to the needs of older adults, including ride sharing, volunteer driving programs, door-to-door community transportation services, taxi services and vehicle donation.

Miami-Dade County MPO Aging Road Users Safety Plan

Topic: Key Facts: Older Drivers

Source: http://publicaffairsresources.aaa.biz/wp-content/uploads/2016/03/Seniors-Fact-Sheet.pdf

Author(s): ***American Automobile Association***

Date: 2013

Abstract:

Some people believe that older drivers pose a large threat to others on the road. Researchers at the AAA Foundation for Traffic Safety help to dispel this common myth about older drivers with the following facts.

Per mile driven, people in their 40s, 50s, and 60s are among those least likely to crash.

- Drivers in their 70s get into about the same number of crashes per mile driven as do drivers in their 30s.
- On average, drivers in their mid- to late-80s still have lower crash rates per mile driven than drivers in their early 20s, and roughly half the crash rates of teenagers.

Teen drivers cause more *fatal* crashes than do senior drivers.

- Drivers ages 65–69 have the same fatal crash involvement rate as drivers in their 30s.
- 75-year-old drivers have fatal crash rates equivalent to those of drivers in their late 20s.
- Not until age 85 and older that drivers begin to experience the highest rate of fatal crash involvement of any age group.

While it is true that older drivers are involved in more fatal crashes in relation to how much they drive, that does not mean that they are the biggest threat to you and me.

- Beginning at age 65, a pattern emerges with older drivers that becomes more pronounced over time: they become much more of a danger to themselves than to others (see the chart on reverse side).
- Fatal crash involvement rates skyrocket for those over age 85 because they are much more likely to die when they do crash, not because they pose a great risk to others.
- The primary danger facing older drivers is *fragility*, which refers to the increasing inability of bones and tissue in aging drivers to withstand injury due to a crash.
- Compared to experienced middle-aged drivers, research has found that 60–95 percent of the higher death rates per mile driven for older drivers can be attributed to fragility that makes surviving a crash more difficult.
- By comparison, 95 percent of the higher death rates for drivers younger than 20 compared with middle-aged drivers is due to their over-involvement in crashes.

Even though older adults are among the safest drivers, these data still reveal a devastating problem: older drivers are, themselves, at greater risk on the roads, and their safety is a major concern. In the face of such risks, older drivers tend to be very responsible: they use their seatbelts more than younger drivers, they tend to avoid driving in higher-risk situations (such as at night or in rain), and they are less likely to drink and drive or be otherwise impaired.

Miami-Dade County MPO Aging Road Users Safety Plan

Topic: LifeLong Driver

Source: http://www.lifelongdriver.com

Author(s): **LifeLong Driver**

Date: 2017

Abstract: Lifelong Driver was introduced in 2011 by ADEPT Driver, the creator of teenSMART, a teen driver safety program proven to reduce teen-driver crashes.

After years of extensive research, the Lifelong Driver team identified the five major causes of age-related collisions:

- Judging safe gaps in traffic, especially when making left-hand turns at intersections
- Determining adequate distances from other vehicles when merging and making lane changes
- Detecting hazards and dealing with distractions while driving
- Identifying and remembering relevant objects while driving
- Dealing with complex driving environments, like busy intersections and parking lots

Lifelong Driver is easy to use and improves the skills older drivers need to stay safe on the road. The approach involves:

- Computer-based training
- Point-of-view driving simulations
- Interactive video segments
- At-home activities
- Optional in-car exercises

Miami-Dade County MPO Aging Road Users Safety Plan

Topic: Maintain Mobility and Independence – Mental Fitness Techniques

Source: http://seniordriving.aaa.com/maintain-mobility-independence/keep-your-mind-body-fit/mental-fitness-techniques/

Author(s): American Automobile Association

Date: 2017

Abstract:

Mental Fitness Techniques

While older minds may be just as sharp as younger ones, they often react more slowly. On the average, the human brain begins to slow down slightly beginning around age 30. Getting older doesn't have to result in cognitive decline, however, if you exercise your mind.

As you age, it takes your brain more time to process information, decide how to handle it and take action. Each step takes longer, and possibly so long that it becomes dangerous on the roadway. Using problem-solving skills, even in non-driving ways, can help improve your mental fitness and flexibility. When choosing a mental fitness activity, keep three things in mind: variety, challenge and novelty.

Quick Tips for Selecting Activities to Sharpen Your Mind	
Variety	Mastering a new skill gets easier with time and practice, so introduce some variety. By changing things up on a regular basis, your mental fitness will have to work harder to adapt to the exercise or activity. This is similar to "circuit training" during physical exercise routines.
Challenge	Never let a task become too easy. Expose yourself to mental activities with increasing levels of challenge or difficulty.
Novelty	Try new mental activities, because very important parts of the brain (e.g., prefrontal cortex) are mostly exercised when you learn to master new cognitive challenges.

Content source: Table adapted from "The Sharp Brains Guide to Brain Fitness"

Miami-Dade County MPO Aging Road Users Safety Plan

Topic: Maintain Mobility and Independence – Physical Fitness

Source: http://seniordriving.aaa.com/maintain-mobility-independence/keep-your-mind-body-fit/physical-fitness/

Author(s): American Automobile Association

Date: 2017

Abstract: Physical Fitness -- As people age, some decline in physical fitness is inevitable. But scientific research shows that after age 30, sedentary people begin to lose their capacity to do physical activity more quickly than those who remain active. Exercise doesn't have to be strenuous to produce positive results. Effective exercise programs should do three things: challenge your heart and lungs aerobically, stretch and strengthen your muscles, and loosen your joints to help with flexibility. Brisk walking, routine housework and gardening all count. To help determine how much physical activity is appropriate, review the guidelines below developed by researchers at the Centers for Disease Control and Prevention, or CDC.

Flexibility for Safe Driving -- Based on research showing that higher levels of fitness programs among seniors were associated with better driving performance, the AAA Foundation for Traffic Safety developed a series of exercises and stretches to improve neck, shoulder, trunk, back and overall body flexibility.

Flexibility permits drivers to move the entire body and all joints more freely to observe the road from all angles. This can help alert them to potential hazards in unexpected areas on the road and with many driving requirements, such as:

- Braking
- Getting in and out of the car
- Looking to the side and rear
- Steering
- Parking the car
- Adjusting the safety belts
- Sitting for long periods of time

Good flexibility also helps improve posture and prevent fatigue while driving.

Physical Activity is Essential to Healthy Aging -- As an older adult, regular physical activity is one of the most important things for health. It can prevent many of the health problems that seem to come with age. It also helps muscles grow stronger to keep doing day-to-day activities without becoming dependent on others. Not doing any physical activity can be bad, no matter the age or health condition. Some physical activity is better than one at all.

Physical activity guidelines -- Those who are 65 years of age or older, generally fit and have no limiting health conditions, can follow the physical activity guidelines listed below.

- For important health benefits, seniors need at least:
  - ✓ 2 hours and 30 minutes (150 minutes) of moderate-intensity aerobic activity (i.e., brisk walking) every week **and** muscle strengthening activities on 2 or more days a week that work all major muscle groups (legs, hips, back, abdomen, chest shoulders and arms-------- **OR -**
  - ✓ 1 hour and 15 minutes (75 minutes) of vigorous-intensity aerobic activity (i.e., jogging or running) every week **and** muscle-strengthening exercise techniques on 2 or more days a week that work all major muscle groups (legs, hips, back, abdomen, chest, shoulders and arms). ---------- **OR ----------**
  - ✓ An equivalent mix of moderate-and vigorous-intensity aerobic activity **and** muscle-strengthening exercise techniques on 2 or more days a week that work all major muscle groups (legs, hips, back, abdomen, chest, shoulders and arms).

Content Source: Center for Disease Control and Prevention

Miami-Dade County MPO Aging Road Users Safety Plan

Topic: Maryland's Resource Guide For Aging Drivers

Source: http://www.mva.maryland.gov/safety/_docs/MD-Resource-Guide-for-Aging-Drivers2.pdf

Author(s): Maryland Department of Transportation, Motor Vehicle Administration

Date: 2015

Abstract: The Maryland Department of Transportation and the Older Driver Safety Forum are working to make sure you have the information and resources you need to continue driving as long as safely possible, and to transition from driving if necessary. This guide contains information to help you drive safely now, identify the risks and warning signs of change, and plan a smooth transition to retiring from driving if and when the time comes.

TIPS AND DRIVING SITUATIONS

Understanding the most common crash types can help you avoid high-risk situations and conditions, and to know what to do when you encounter them:

- Always wear a seat belt and make sure all passengers in all seats are belted.
- Judging oncoming traffic can be challenging both at intersections and especially when making left-hand turns. Allow enough time when crossing traffic and pay attention to signs and signals.
- Use caution when merging onto higher speed roads and when changing lanes.
- Be extra careful at intersections. Use turn signals and stay alert for cars and pedestrians entering from the side.
- Always stay in your lane while driving through an intersection.
- Avoid distractions so you can make safe driving decisions.
- Drive at or near the speed limit. It's unsafe to drive too fast or too slow.

TYPICAL CRASHES INVOLVING OLDER DRIVERS

- Turning left at an intersection with a stop sign;
- Turning left at an intersection with a green light without a dedicated left-turn arrow;
- Turning right at a yield sign to merge with traffic at speeds of 40-45 mph;
- Merging onto a highway from a ramp with a yield sign; and
- Changing lanes on a roadway having four or more lanes.

WARNING SIGNS OF A DROWSY DRIVER -- One common risk among aging drivers – especially those taking medication – is drowsiness. Drowsy drivers are just as dangerous as a drunk driver. Drivers become drowsy from exhaustion, changes to medications, or certain medical conditions.

- Your eyes close or go out of focus.
- You have trouble keeping your head up or eyes open.
- You can't stop yawning.
- You have wandering, disconnected thoughts.
- You don't remember driving the last few miles.
- You can't stay in your lane.

Miami-Dade County MPO Aging Road Users Safety Plan

Topic: **Mature Drivers in Maine**

Source: http://www.maine.gov/dps/bhs/programs/mature_drivers.html

Author(s): Maine Bureau of Highway Safety (MeBHS)

Date: 2016

Abstract: Maine is the "oldest" state by median age (42); 4th oldest by percentage (15%) of its population over 65. This proportion is expected to rise to 26.3% by 2030, surpassed only by the State of Florida. Mature Drivers and the problems they face as they age pertaining to roadway safety are constantly changing. Mature drivers often face impairments in three functions that affect driving abilities: vision, cognition and motor function.

- Vision -- Adequate visual acuity and field of vision are critical for safe driving but tend to decline with age. Glare, impaired contrast sensitivity, and increased time needed to adjust to changes in light levels are problems commonly experienced by mature drivers.
- Cognition -- Driving requires a variety of high-level cognitive skills, including memory, visual processing, attention and executive skills. Certain medical conditions (such as dementia) and medications that are common in the older population have a large impact on cognition.
- Motor Function -- Motor abilities such as muscle strength, endurance and flexibility are necessary for operating vehicle controls and turning to view traffic. Even prior to driving, motor abilities are needed to enter the car safely and fasten the seat belt. Changes related to age and diseases such as arthritis can decrease an individual's ability to drive safely and comfortably.

Changes in vision, physical strength and cognition can contribute to a loss of self-confidence in the ability to operate a motor vehicle. However, losing one's driver's license is equated by some older adults as a loss of independence and personal freedom. Faced with this choice, some mature drivers risk personal injury rather than give up their license.

According to the American Medical Association, mature drivers (also known as older drivers) have a higher risk of traffic fatalities not only because they tend to be involved in more motor vehicle crashes per mile driven than middle-aged drivers, but also because they are more physically fragile than their younger counterparts.

Mature Driver Safety Tips

As more and more Maine drivers mature, they and their families face a whole new set of challenges when it comes to operating a motor vehicle. The fact is that we all age differently. However, there are certain physical factors that deteriorate as we age and affect our proficiency behind the wheel.

Here are a few helpful tips for older drivers to safely meet the demands of driving:

- As you age, have regular eye and medical exams to maintain your driving abilities. Good near and distance vision is needed to drive safety.
- Aging eyes become more sensitive to bright light and glare, so limit nighttime driving. Try to avoid looking directly into headlights of approaching vehicles.
- Avoid stressful driving situations such as rush hour travel, driving at night or driving in bad weather. Plan trips for daytime hours after 9 a.m. and before 5 p.m. to avoid rush hour traffic. Plan ahead -- know your route and try to stay on familiar roads.
- Avoid travelling in bad weather, if at all possible.
- Avoid taking medications before driving. Many medications, prescription and over-the-counter, cause drowsiness and can affect safe driving.
- Maintain a safe speed and look ahead. Controlling your speed and looking down the road for possible hazards allow you to make adjustments before encountering a problem.

- Always keep a safe distance from the vehicle ahead of you. A four-second gap between you and the vehicle in front of you is recommended.
- When driving long distances, especially in winter, call ahead for weather and road condition updates.

The following are some warning signs a mature driver and the mature driver's family should look for in terms of when it may be time to limit or stop driving altogether:

- Feeling uncomfortable, nervous or fearful when driving
- Unexplained dents and scrapes on the car, fences, mailboxes, garage doors, etc.;
- Frequent "close calls" (i.e. almost crashing);
- Getting lost;
- Slowed response to unexpected situations;
- Difficulty staying in the lane of traffic;
- Trouble paying attention to signals, road signs and pavement markings;
- Trouble judging gaps in traffic at intersections or highway entrance/exit ramps;
- Medical conditions or medications which may be affecting abilities to handle a car safely;
- Frequent traffic tickets or "warnings" by traffic or law enforcement officers in the last two years.

Miami-Dade County MPO Aging Road Users Safety Plan

Topic: Miami-Dade 2016 Crash and Citation Reports and Statistics

Source: https://firesportal.com/Pages/Public/QuickStats.aspx

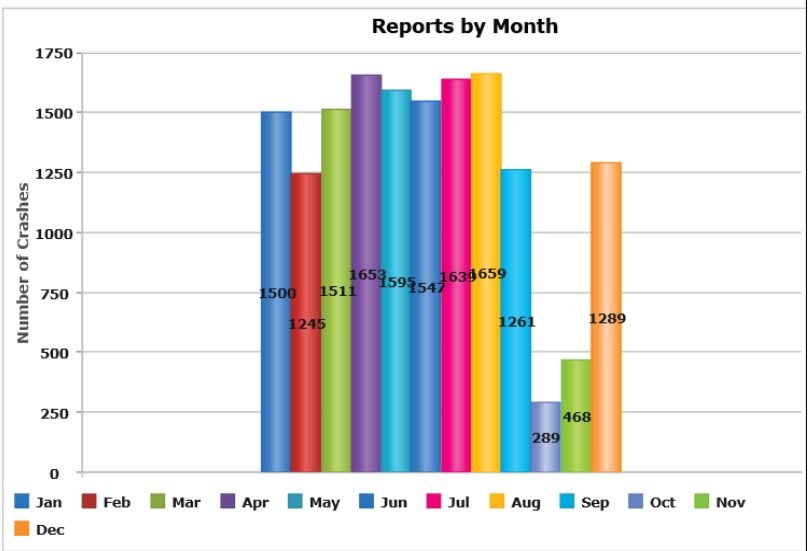
Author(s): Florida's Interchange Report System

Date: 2017 for 2015 Data

Abstract:

Year: 2016 ○ Statewide ○ County: Miami-Dade ◉ Agency: MIAMI-DADE PD

Crash Summary	
Total Crashes:	15,656
Injury Crashes:	4,913
Total Injuries:	6,974
Crashes with Traffic Fatalities:	97
Total Traffic Fatalities	103
Commercial Vehicle Crashes:	1,694
Commercial Vehicles:	1,871
Property Damage Crashes:	10,646
*Pedestrian Crashes:	402
*Pedestrian Fatalities:	19
**Bicycle Crashes:	215
**Bicycle Fatalities:	4



Miami-Dade County MPO Aging Road Users Safety Plan

Topic: **Mobility for Minnesota's Aging Population**

Source: http://www.minnesotatzd.org/whatistzd/mntzd/partners/mmap/

Author(s): AAA - The Auto Club Group, Mobility for Minnesota's Aging Population and The Minnesota Department of Public Safety

Date: 2015

Abstract: Everyone wants older adults to be able to drive as long as possible—providing it's safe for them and everyone else. With planning, prevention and post-driving resources, older adults don't need to be stuck at home. It's common for other drivers to see an older person driving a car and think about steering clear of them. There are many myths about senior drivers. Consider these commonly held beliefs:

Myth #1: Older people are bad drivers

FACT: Older drivers are considered among the safest on the road, in part because they're more likely to wear a seat belt and less likely to speed, drive while intoxicated and/or text while driving. In 2013, 8 percent of traffic crashes in Minnesota were related to people 65 and older, a group that represented 17 percent of all drivers that year. Drivers in their 70s are involved in roughly the same number of crashes per mile as drivers in their 30s, according to the AAA Foundation for Traffic Safety. On average, drivers in their teens experience crashes at a rate that is 12 times higher than that of people in their mid- to late 80s. About 10 percent of all crashes involve 15- to 19-year-olds; fewer than 1 percent involves people 85 or older.

Myth #2: Being 80 (or 90) means it's time to stop driving

FACT: It's not age but the mental and physical fitness of the individual driver that makes the driving difference. There are many drivers in their 50s who have no business on the road because of physical changes or vision issues, and an ample number of sharp 75-year olds who still are excellent drivers.

Myth #3: I can still drive because I've had no car crashes

FACT: Older drivers still can endanger others, even if they have a crash-free record. If someone drives too slowly, has poor reaction times or repeatedly dings the car, they aren't safe drivers.

Myth #4: You need to stop driving completely

FACT: Older drivers can take steps to extend their driving years. The most common effective strategy is self-restricting based on when and where someone feels most comfortable driving, and avoiding other situations, such as driving at night or in bad weather. In addition, there are several options for seniors who want to continue driving safely -- theyrange from doing physical and mental exercises to taking defensive driving courses.

Aging While Driving: Driving is a mental and physical activity, and people need to be healthy on both fronts to stay behind the wheel. Unfortunately, aging can cause many medical and cognitive changes that make it more difficult to drive safely. Here are a few of the most common changes affecting older drivers.

Vision: Aging causes numerous issues related to eyesight, especially for those 60 and older. It's often harder to drive at night because older eyes need more light to see and more time to adjust when light changes. Peripheral vision also declines, making it more difficult to see to the side while looking straight ahead. In addition, seniors are more susceptible to eye conditions like cataracts, glaucoma and macular degeneration, which cause vision loss.

Cognitive decline: Older people often experience a change in their reaction times. It takes them longer to process information and react by pressing on the brake or changing their steering. Attention spans are shorter, and it can be more difficult to do two things at once.

Dementia: People with dementia might not realize they are no longer safe drivers. Having early-stage dementia doesn't necessarily mean stopping driving immediately, but eventually it will affect a person's reaction time, attention and decision-making.

Physical decline: Previous injuries or arthritis causes sore muscles and joints, which can make it difficult for seniors to turn their heads to check for blind spots or put on their seat belts. Weaker leg and foot muscles, along with sore hips or knees, mean it's often hard to react quickly or press down on the pedals.

Other medical issues: Diabetes, Parkinson's disease or stroke all can contribute to driving difficulties. Diabetics contend with high or low blood sugar, both of which can make them dizzy or even pass out. Stroke survivors might have paralysis or weakness in parts of their bodies, while those with Parkinson's Disease often notice it affects their balance and ability to move quickly.

Warning Signs

- Driving through red lights or ignoring other traffic signs; the driver might not be able to see them in a crowded visual field or might be inattentive.
- Stopping at green lights or other places where they don't need to stop.
- Not yielding to traffic or not taking their turn at stop signs.
- Going too fast or too slow for conditions.
- Having trouble maintaining lane position and/or straddling two lanes.
- Not following proper lane-changing procedures or weaving in and out of lanes.
- Getting lost or disoriented, even in familiar places.
- Confusing the gas and brake pedals or having difficulty working them, which can signify waning leg strength.
- Other drivers honk and pass frequently, even when traffic is moving relatively slowly.
- The older driver's car has new scratches and dents, or the side mirror has been knocked off.

Miami-Dade County MPO Aging Road Users Safety Plan

Topic: **National Center for Statistics and Analysis (NCSA), an office of the National Highway Traffic Safety Administration, 2017 Crash Stats**

Source: https://crashstats.nhtsa.dot.gov/?_ga=1.169131041.1636299236.1487088386#/PublicationList/32

Author(s): National Highway Traffic Safety Administration

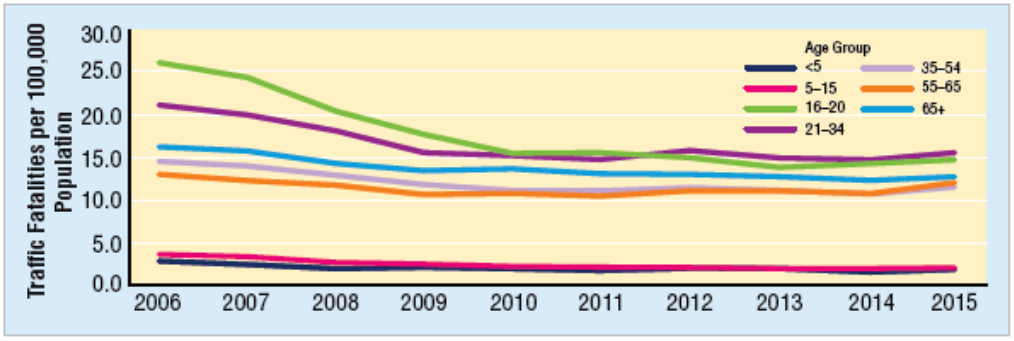
Date: 2017

Abstract:

Overview

In 2015 there were 6,165 people 65 and older killed and an estimated 240,000 injured in motor vehicle traffic crashes. Older people made up 18 percent of all traffic fatalities and 10 percent of all people injured in traffic crashes during the year. Compared to 2014, there was an 8-percent increase in the numbers of both fatalities and those injured in the older age group.

Figure 1
Motor Vehicle Traffic Fatality Rates by Age Group, 2006–2015



Source: Fatality Analysis Reporting System (FARS) 2006–2014 Final File, 2015 Annual Report File (ARF).
Population: Bureau of the Census.

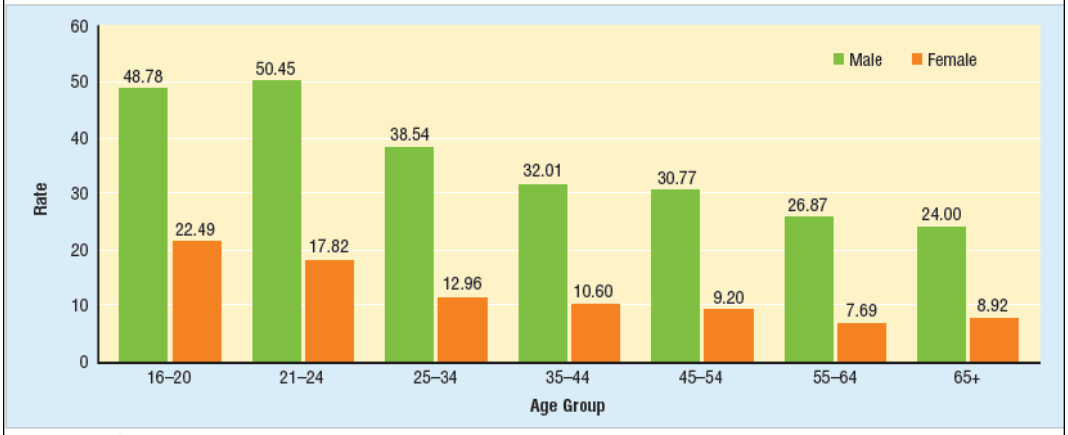
In 2015, some 47.8 million people—about 15 percent of the total U.S. resident population—were 65 and older. Over the past decade the fatality rate per 100,000 population of older people has steadily declined from 16.3 in 2006 to 12.9 in 2015. Figure 1 shows motor vehicle traffic fatality rates according to age groups.

Some notable changes among the 65-and-older age group, over the most recent 10 years of data (2006 to 2015), are:

- The population increased by 29 percent (males increased by 34% and females by 24%).
- Motorcyclist fatalities, though a relatively small number, increased by 142 percent (males increased by 144% and females increased by 100%).
- Driver fatalities among the older population increased by 3 percent (increased for males by 10% and decreased for females by 11%).
- Older pedalcyclist fatalities increased by 12 percent overall (increased for males by 8% and for females by 38%).

People 65 and older made up 15 percent of the population in 2015. Thirteen percent the male population was 65 and older, while 16 percent of females were in this age group. Note that from 2006 to 2015 the number of older people in the U.S. increased by 29 percent (males by 34% and females by 24%), while the total population of all ages increased by 8 percent. Thus, a larger percentage of the population is in this age group than had been a decade ago (12% in 2006 to 15% in 2015). While there are both a larger number and larger percentage of females in this age group, gender differences shrunk over the decades.

Figure 2
Driver Involvement Rates in Fatal Crashes by Age and Gender per 100,000 Licensed Drivers, 2015



Source: FARS 2015 ARF.
Licensed Drivers: Federal Highway Administration.

Also interesting to note is that the percentage of females 65 and older is larger than that of males when looking at driver fatalities, total traffic fatalities, occupant fatalities, passenger vehicle occupant fatalities, pedalcyclist fatalities, and pedestrian fatalities. Males 65 and older are a larger percentage of motorcyclist fatalities. While the numbers and percentages themselves have changed, the pattern of females or males having the higher percentage for this age group is the same as a decade ago. When it comes to restraint use of those involved in fatal traffic crashes, passenger vehicle occupants 65 and older were more likely to be restrained than those younger than 65. Older passengers involved were restrained 81 percent of the time, while passengers 65 and younger were restrained 71 percent of the time

Older Drivers

There were 40.1 million licensed older drivers in 2015 —a 33-percent increase from 10 years earlier 2006). In contrast, the total number of licensed drivers in the United States increased by 8 percent from 2006 to 2015. Older drivers made up 18 percent of all licensed drivers in 2015, compared to 15 percent in 2006. As shown in Table 1, among the age groups displayed of drivers of drinking age in fatal crashes in 2015, older drivers involved in fatal crashes had the lowest percentage of drivers with blood alcohol concentrations (BACs) of .08 grams per deciliter (g/dL) or higher, at 8 percent.

Table 1
Age and Alcohol Involvement of Drivers in Fatal Crashes, 2015

Age Group (Years)	Drivers Involved in Fatal Crashes		
	Total	BAC .08 or Higher	
		Number	Percentage of Total
<16	154	15	10%
16–20	4,214	659	16%
21–34	14,802	4,021	27%
35–54	15,527	3,234	21%
55–64	6,453	905	14%
65+	6,490	507	8%
Total	48,613	9,649	20%

Source: FARS 2015 ARF.
*Total includes 973 drivers of unknown age.

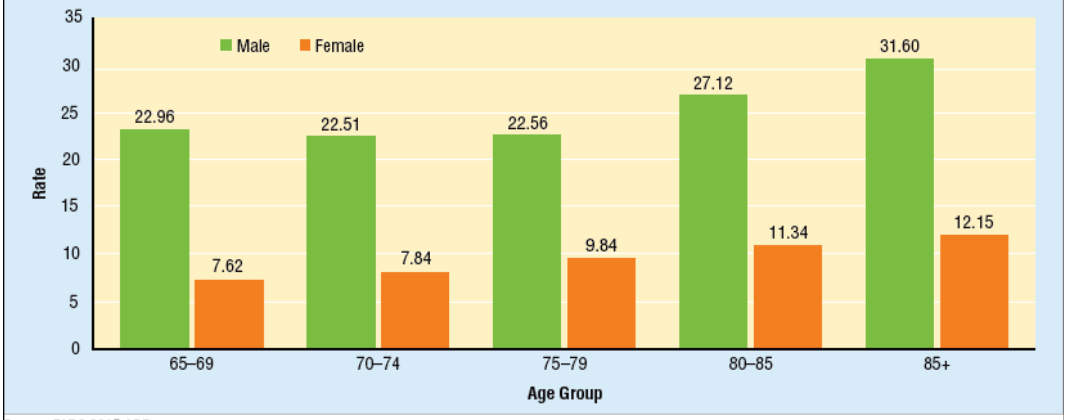
Over the past 10 years, 4 percent more people were killed in crashes involving older drivers – from 6,334 in 2006 to 6,608 in 2015. While the annual numbers of people killed in these crashes over the last 10 years has varied, there was an increase of 9 percent between 2014 and 2015. This increase in one year accounts for a large portion of the increases over the last decade.

Most traffic fatalities in crashes involving older drivers in 2015 occurred during the daytime (74%), occurred on weekdays (70%), and involved other vehicles (67%). These percentages differ from those for all fatalities in 2015: 49 percent occurred in the daytime; 59 percent occurred on the weekdays; and 44 percent involved another vehicle. Among drivers involved in fatal crashes in 2015, drivers 65 and older had a lower involvement rate per 100,000 licensed drivers (16.19) than any other age group. Looking specifically at females, the 55-to-64 age group was slightly lower than the 65-and-older group. The involvement rate for older male drivers was 24 per 100,000 older licensed male drivers, and the involvement rate for older female drivers was 8.92 per 100,000 older licensed female drivers, as seen in Figure 2.

Older Population Age Groups

While Figure 2 presents data on the involvement rate for older drivers compared to other age groups, Figure 3 compares the involvement rates for age groups within the population of drivers 65 and older, by gender. Fatal-crash driver-involvement rates per 100,000 licensed drivers among both older male (31.6) and female (12.15) drivers was highest in the 85-and-older age group.

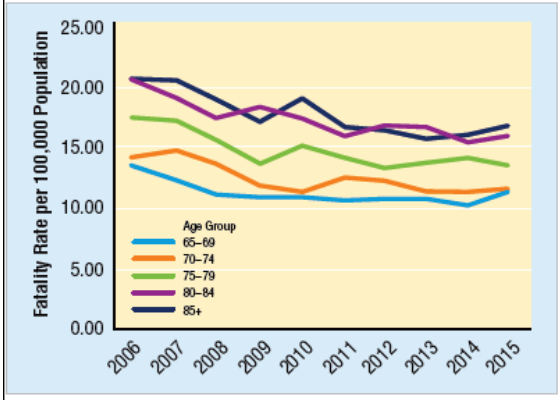
Figure 3
Involvement Rates for Older Drivers in Fatal Crashes by Age Group and Gender, per 100,000 Licensed Drivers, 2015



Source: FARS 2015 ARF.
Licensed Drivers: Federal Highway Administration.

In 2015, among the older population, the fatality rate for the 85-and older age group was 16.94 per 100,000 population, which was higher than any other older age group. The fatality rate for the 85+ age group declined by 17 percent over the past decade, from 20.37 in 2006 to 16.94 in 2015, as shown in Figure 4.

Figure 4
Motor Vehicle Traffic Fatality Rates Among Older Populations by Age Group, 2015



Source: FARS 2005-2013 Final File; FARS 2015 ARF.
Population: Bureau of the Census.

Driver Involvement in Fatal Crashes by State and Age Group

Among all States, driver involvement in all fatal crashes in 2015 ranged from a high of 4,836 in Texas to a low of 30 in the District of Columbia. Specific to older drivers involved in fatal crashes, Florida had the largest number of older drivers involved at 581, compared to the District of Columbia with 1 driver involved in a fatal crash. The District of Columbia had the lowest percentage of older driver involvement with 3.3 percent, followed by Rhode Island with 8.6 percent of all drivers involved in fatal crashes being 65 and older. New Hampshire had the largest percentage, 19 percent.

Looking at the driver involvement rate per 100,000 licensed drivers in 2015, the District of Columbia was lowest with 2, followed by Rhode Island with a rate of 3. Montana had the highest driver involvement rate for those 65 and older (28), followed by Mississippi and Wyoming with a rate of 26. Nationally, 16 drivers 65 and older per 100,000 licensed drivers were involved in fatal crashes in 2015.

Miami-Dade County MPO Aging Road Users Safety Plan

Topic: North American Conference on Elderly Mobility – Noteworthy Practices Guide: *Adaptive LED Lighting in New Zealand*

Source: https://safety.fhwa.dot.gov/older_users/noteworthy/elderlymobilitynpg.pdf

Author(s): *North American Conference on Elderly Mobility and* the Federal Highway Administration, Rebecca Crowe, Office of Safety Technologies, served as the Technical Manager.

Date: 2014

Abstract:

The Second North American Conference on Elderly Mobility (NACEM) was held in May, 2014, and featured best practices in older adult mobility and highlighted new developments since the conference was first held in 2004. A guide was produced to showcase national and international noteworthy practices presented during the conference. Included here is one of several excerpts from the Guide. Others and in separate abstracts to maintain an easy-to-read format.

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Adaptive LED Lighting in New Zealand

Nighttime driving can become an increasingly difficult task as people age. The absence of roadway lighting makes it challenging to see hazards and the path of the road. Too much lighting can create a detrimental glare. To help drivers navigate during nighttime conditions, agencies can increase roadway delineation with retroreflective signs and markings. Another successful strategy being used in New Zealand is the use of adaptive LED lighting.

Adaptive LED lighting may be changed depending on current conditions and is varied using modern computer control systems. The lighting can also be tailored to circumstances such as the predominant road users' demographic. Individual lights can be turned on and off. They can also be dimmed depending on the atmospheric conditions and the need for more or less road lighting. This method uses less electricity than standard lighting and will become more affordable over time. Adaptive LED lighting is becoming more prominent in many parts of the world, and the technology needed for implementation is currently being used in North America.

Adaptive LED lighting is part of New Zealand's Safe System approach, which includes the following objectives.

- Prioritize projects to ensure that limited funding is well spent.
- Eliminate high-risk situations.
- Design to reduce the chance and consequences of human error.
- Encourage driving speeds that are appropriate for conditions.

Miami-Dade County MPO Aging Road Users Safety Plan

Topic: **North American Conference on Elderly Mobility – Noteworthy Practices Guide:** ***Alberta Traffic Safety Guide to Accomodating Older Drivers***

Source: https://safety.fhwa.dot.gov/older_users/noteworthy/elderlymobilitynpg.pdf

Author(s): *North American Conference on Elderly Mobility and* the Federal Highway Administration, Rebecca Crowe, Office of Safety Technologies, served as the Technical Manager.

Date: 2014

Abstract:

The Second North American Conference on Elderly Mobility (NACEM) was held in May, 2014, and featured best practices in older adult mobility and highlighted new developments since the conference was first held in 2004. A guide was produced to showcase national and international noteworthy practices presented during the conference. Included here is one of several excerpts from the Guide. Others and in separate abstracts to maintain an easy-to-read format.

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Alberta Traffic Safety Guide to Accommodating Older Drivers

The Alberta Traffic Safety Guide to Accommodating Older Drivers provides a set of strategies for transportation agencies in Alberta, Canada, to address and safely accommodate aging drivers. Although overall fatal and injury crashes were decreasing, data showed that the involvement of older drivers in serious collisions was growing in both proportion and frequency, which was and is expected to continue as the "Baby Boom" generation ages. This guidebook was developed as part of an effort to make the road environment responsive to the needs of aging drivers.

The development of this guidebook was funded by the Canadian Automobile Association club in Alberta, called the Alberta Motorist Association. The 2001 edition of FHWA's *Highway Design Handbook for Older Drivers and Pedestrians2* was used in combination with other literature and local workshop inputs to develop the guidebook. The purpose of the guidebook is to present a comprehensive list of traffic safety practices that benefit the aging driver. Although many of the enhancement practices were drawn from the FHWA document, they were evaluated against Canadian and Albertan guidelines and standards. The recommendations in the guidebook include: channelization, slotted left-turn lanes, left-turn signalization, right-turns, street name signing, stop- and yield-control signing, traffic signals, roundabouts, and curve delineation (Figure 6).

The guidelines are meant to be used by agencies in areas with high proportions of older drivers, but can also be used in all locations to accommodate older drivers as a general policy. The Alberta Strategic Highway Safety Plan has a section dedicated to older drivers, and the province is required to consider the concepts included in the Traffic Safety Guide to Accommodating Older Drivers in all transportation projects. The guidelines are meant to act as a reference to supplement existing standards, not to replace them. There is currently an initiative to begin applying these safety concepts on a systemic basis.

Miami-Dade County MPO Aging Road Users Safety Plan

Topic: North American Conference on Elderly Mobility – Noteworthy Practices Guide: *ITNAmerica*

Source: https://safety.fhwa.dot.gov/older_users/noteworthy/elderlymobilitynpg.pdf

Author(s): North American Conference on Elderly Mobility and the Federal Highway Administration, Rebecca Crowe, Office of Safety Technologies, served as the Technical Manager.

Date: 2014

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The Second North American Conference on Elderly Mobility (NACEM) was held in May, 2014, and featured best practices in older adult mobility and highlighted new developments since the conference was first held in 2004. A guide was produced to showcase national and international noteworthy practices presented during the conference. Included here is one of several excerpts from the Guide. Others and in separate abstracts to maintain an easy-to-read format.

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ITNAmerica -- The Independent Transportation Network (ITN) began in 1995 in Portland, Maine, as the Federal Transit Administration's model for sustainable, community-based transportation for seniors. With support from AARP, the Transit IDEA Program, numerous private philanthropies, and corporate sponsors, ITNAmerica has helped more than 25 communities in 22 states start an ITN affiliate of their own. More than 1,600 volunteer drivers and 11,000 members have participated in the service, which combines
the power of information technology and the strength of local support to create an efficient and financially sustainable solution to the transportation needs of seniors and their families.

ITN America is designed to recreate the comfort and convenience of private automobile ownership for seniors and to be sustainable without relying on taxpayer dollars for ongoing operating expenses. Through its CarTrade™ ITN helps seniors to trade vehicles that they no longer use to pay for their own rides. As part of the initiative the Transportation Social Security Program gives volunteers transportation credits in the system when they drive others, and the Road Scholarship Program encourages volunteers to donate these credits for low-income riders who cannot afford their share of the far. ITN supplements publicly
funded transportation by using private automobiles and is available to seniors 24 hours a day, 7 days a week for any purpose, without restriction. Through innovative payment plans, ITN integrates previously inaccessible private resources to help pay for rides, storing the resources in personal transportation accounts, and sending members monthly account statements. No money ever changes hands in the vehicles. Merchants and healthcare providers participate through the Ride & Shop and Healthy Miles
programs. Seniors and people with visual impairments describe ITN as "the next best thing to driving."

ITNAmerica is working towards a national solution for a national problem:
- Seniors have the highest fatal crash risk of any group except teenagers.
- Seniors take 88 percent of trips in private automobiles.
- Seniors take fewer than 3 percent of trips on public transit.
- Nearly 55 percent of seniors live in communities without public transit.

With increasing concern for the safety and mobility issues of older drivers, many groups across the country are trying to find a solution. ITNAmerica is the first and only national non-profit whose mission is to address these transportation needs. It accomplishes this mission through research, policy, and technology, and by supporting communities across the country through replication of the ITN. Though pricing is structured so that a user pays more for on-demand service and more to ride alone
instead of sharing, it is still affordable since 38 to 46 percent of its users have an income of less than $25,000 per year. Some other statistics on the program include:

- Approximately 43 percent of rides are for healthcare,
- The most common age of members is 86,
- About 80 percent of members are women living alone in the community, and
- Half of all riders report mobility impairments.

Miami-Dade County MPO Aging Road Users Safety Plan

Topic: North American Conference on Elderly Mobility – Noteworthy Practices Guide: *It Takes a Village*

Source: https://safety.fhwa.dot.gov/older_users/noteworthy/elderlymobilitynpg.pdf

Author(s): *North American Conference on Elderly Mobility and* the Federal Highway Administration, Rebecca Crowe, Office of Safety Technologies, served as the Technical Manager.

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It Takes a Village: Transportation Options -- The Village model was born from the need for reliable, affordable, and readily available services to support the aging population in the community. Villages are non-profit, grass-roots organizations, offering services and programs catered towards their specific members' demographic. They are membership-driven, usually requiring a recurring fee that is much less than a conventional retirement home. This allows the Village to maintain some permanent staff who, along with administrative volunteers, provide health and wellness services for older adult members and provide a transportation service that reflects the needs of the Village members and the characteristics of the surrounding community. The Village administration also organizes social events, trips, and even home repairs—whatever the members request. Transportation is the most requested service that Villages provide to their members.

The high yearly cost of retirement communities is one of the major reasons why many older adults decide to live at home as long as possible. Older adults' hope to remain connected with their communities and their goal of maintaining their overall independence are two other factors that contribute to the desire to stay at home. The Village model provides an alternative to moving to a retirement community and can allow older adults the choice to age in their own homes. A Village can provide the services, connections, and care expected from retirement communities while still allowing Village members to remain independent by living at home in their familiar surroundings.

Potential members sign up to be included in their local Village typically by going to the Village offices and learning details about the organization, signing whatever forms may be required, and paying the membership fee. The Village provides members with transportation and other services using existing assets and resources found in the community such as volunteer drivers, discounted shared ride services, or discounted senior taxis. The exact methods used to provide transportation services vary from Village-to-Village and depend on a number of factors, such as:

- Availability and access to transportation options,
- Number of Village members and outside volunteers who are willing and able to provide transportation services, and
- Potential for local car-sharing businesses to provide discounted services to seniors who are Village members.

The overall goal is for the Village to work with the member to identify the types and methods of transportation that best fits the needs of the individual member.

The Village model was conceived in 2001 by Beacon Hill residents in Boston, Massachusetts. The Village-to-Village Network, a joint partnership between the Beacon Hill Village and Capital Impact Partners, a nationwide non-profit focused on community development, connects each Village through this peer-to-peer network, providing a platform to share ideas with other Villages to strengthen and sustain their organizations. According to the Village-to-Village Network, "145 Villages are operating across the country, in Canada, Australia and the Netherlands.

Miami-Dade County MPO Aging Road Users Safety Plan

Topic: North American Conference on Elderly Mobility – Noteworthy Practices Guide: *Seniors Training Seniors How to Use Transit*

Source: https://safety.fhwa.dot.gov/older_users/noteworthy/elderlymobilitynpg.pdf

Author(s): North American Conference on Elderly Mobility and the Federal Highway Administration, Rebecca Crowe, Office of Safety Technologies, served as the Technical Manager.

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Seniors Training Seniors How to Use Transit

As people age, they may need to change certain aspects about their lives to better meet their needs and reflect on their abilities. This may mean creating new routines as older people begin to rely more heavily on public transportation; however, those unfamiliar with public transportation may be uncomfortable learning a new system and may be reluctant to do so on their own. The unfamiliarity can be daunting and confusing, but peer volunteers can provide support, knowledge, and guidance in this transition period, making it easier for all seniors to use public transportation as their primary means of mobility.

Michigan's Rapid Senior Mentor Program pairs an experienced senior volunteer with any senior who may be new to using fixed route service. Through the guidance of these peer mentors, new senior passengers learn how easy and safe riding the bus can be. The mentor answers transit service questions, plans the route to a destination of the passenger's choosing, and travels with the new passenger. The program also provides the participant a free 10-ride fare card to start his or her bus travels. All training programs are free to participants, including free rides during training.

Recruiting mentors is through personal relationships with current bus riders, recommendations of bus operators, senior centers, and key non-profits. Mentors went through an initial training before they began working with clients. Recruiting potential clients is on-going.

The Rapid, the bus system serving Grand Rapids, Michigan, and the surrounding areas, created this program. This program has been beneficial not only to seniors themselves, but to the broader community as seniors are able to live more actively. According to an article describing the practice from the National Center on Senior Transportation, "over 800 older adults have been served through the Rapid's Senior Mentor Program. By allowing older adults to remain independent, their mental and physical fitness improves." Businesses benefit from increased patronage from older adults who were once inactive due to apprehension about driving or using public transportation. There are savings associated with aging-in-place as long as needs, such as reliable transportation, are met.

Miami-Dade County MPO Aging Road Users Safety Plan

Topic: **North American Conference on Elderly Mobility – Noteworthy Practices Guide:** ***Vernon, British Columbia, Older Driver Pilot Project***

Source: https://safety.fhwa.dot.gov/older_users/noteworthy/elderlymobilitynpg.pdf

Author(s): *North American Conference on Elderly Mobility and* the Federal Highway Administration, Rebecca Crowe, Office of Safety Technologies, served as the Technical Manager.

Date: 2014

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Vernon, British Columbia: Older Driver Pilot Project

The Older Driver Pilot Project was a comprehensive city-wide study of Vernon which has a disproportionately high percentage of residents over the age of 65 in all of British Columbia where, between now and 2030, the number of residents over the age of 65 in British Columbia is expected to grow to almost a quarter of the population.

Focus Groups with Vernon's seniors were conducted at the beginning of the Pilot Project. The information gathered was combined with an analysis of Insurance Corporation of British Columbia (ICBC) claims data to target problem sites within the city. A multi-disciplinary team conducted Road Safety Audits (RSAs) at these sites to identify the key issues and to determine the proper safety countermeasures that should be applied. The RSAs showed a number of concerns, such as inadequate sight distances, faded crosswalks, small wording on signs, and narrow sidewalks. A majority of these issues was the result of limited city funding available for improvements.

The RSAs were unique in that they were conducted with an older road user's perspective in mind. This pilot project identified both spot and systemic road safety countermeasures to improve older user safety. The ICBC funded many of the improvements and upgrades that were needed to make Vernon safer for older road users

Miami-Dade County MPO Aging Road Users Safety Plan

Topic: Older Driver Safety – Highway Safety Program Guideline No. 13

Source: https://www.nhtsa.gov/sites/nhtsa.dot.gov/files/812007d-hspg13-olderdriversafety.pdf

Author(s): National Highway Transportation Safety Administration

Date: 2014

Abstract: Each State, in cooperation with its political subdivisions, tribal governments and other stakeholders, should develop and implement a comprehensive highway safety program, reflective of State demographics, to achieve a significant reduction in traffic crashes, fatalities, and injuries on public roads. The highway safety program should include a comprehensive Older Driver Safety Program that aims to reduce older driver crashes, fatalities, and injuries. This guideline recommends the eight key components of a State Older Driver Safety Program, and criteria that the program components should meet.

I. PROGRAM MANAGEMENT

Each State should have centralized data analysis and program planning, implementation, and coordination to identify the nature and extent of its older driver safety problems, to establish goals and objectives for the State's Older Driver Safety Program and to implement projects to reach the goals and objectives. State older driver programs should:

- Designate a lead organization for older driver safety;
- Develop resources;
- Collect and analyze data on older driver crashes, injuries, and fatalities;
- Identify and prioritize the State's older driver safety problems;
- Encourage and facilitate regular collaboration among agencies and organizations responsible for or impacted by older driver safety issues (e.g., Department of Transportation road and transit entities, State Unit on Aging, and the like);
- Develop programs and specific projects to address identified problems;
- Coordinate older driver safety projects with other highway safety projects;
- Increase awareness of older driver transportation options, such as ride programs or transit services;
- Integrate older driver safety into the State strategic highway safety plans and other related activities, including impaired driving, occupant protection, and especially driver licensing programs; and
- Routinely evaluate Older Driver Safety Programs and services and use the results in program planning.

II. ROADWAY DESIGN FOR OLDER DRIVER SAFETY

Traffic engineering and roadway design can challenge or ease a driver's mobility in any community. It is possible and desirable to accommodate normal aging through the application of design, operational, and traffic engineering countermeasures. The needs of older road users must be considered in new construction, as well as in spot improvements, to keep older drivers safe. \ State DOTs should:

- Consider Older Driver safety as an emphasis area in the Strategic Highway Safety Plan (SHSP) if data analysis identifies this as an area of concern;

- Develop and implement a plan for deploying the guidelines and recommendations to accommodate older drivers and pedestrians; and

- Develop and implement a communications and educational plan for assisting local entities in the deployment of the guidelines and recommendations to accommodate older drivers and pedestrians.

III. DRIVER LICENSING

Driver licensing is a critical element in the oversight of public safety as it relates to older drivers. The driver licensing authority (DMV) can legally restrict or suspend an individual's license, and for that reason, it is the primary audience for these recommendations. There are three areas within driver licensing that are important to driving safety: policies; practices; and, communications.

Policies that each State should implement to address older driver safety are:

- In-person renewal should be required of individual drivers over a specified age if the State determines through analysis of crash records that there is a problem with older driver crashes;
- Medical review policies should align with the Driver Fitness Medical Guidelines (Driver Fitness Medical Guidelines) published by NHTSA and the American Association of Motor Vehicle Administrators (AAMVA); and
- All medical and emergency medical service providers who provide a referral regarding a driver in good faith to the driver licensing authority should be provided immunity from civil, criminal, and administrative liability.

Practices that each State should implement to address older driver safety are:

- Consider licensing restrictions as a means of limiting the risks presented by individual drivers while allowing for the greatest autonomy possible;
- Establish a Medical Advisory Board (MAB), consisting of a range of medical professionals, to provide policy guidance to the driver licensing agency to implement;
- The medical review function of the DMV should include staff with medical expertise in the review of medically-referred drivers;
- The DMV should regularly conduct analyses and evaluation of the referrals that come through the medical review system to determine whether procedures are in place to appropriately detect and regulate at-risk drivers;
- Train DMV staff, including counter-staff, in the identification of medically at-risk drivers and the referral of those drivers for medical review; and
- Provide a simple, fast, and if possible, very low cost or free way for individuals to convert their driver licenses to identification cards.

A Communications Program should be implemented through the State DMV to:

- Make medical referral information and forms easy to find on the DMV Web site;
- Provide outreach to and training for medical providers (e.g., physicians, nurses, etc.) in making referrals of medically at-risk drivers and in finding resources on functional abilities and driving;
- Provide outreach to and training for law enforcement in successfully identifying medically at-risk drivers and in making referrals of medically at-risk drivers to the DMV; and
- Provide information on transportation options and community resources to drivers who are required to submit to medical review of their licenses.

- IV. MEDICAL PROVIDERS

Medical providers should know how to counsel the at-risk driver, and when confronted by a driver who refuses to heed advice to stop driving, to make a referral to the driver licensing authority. To facilitate this process, State Older Driver Safety Programs should:

- Establish and implement a communications plan for reaching medical providers;
- Disseminate educational materials for medical providers. Providers should include physicians, nurses, occupational therapists, and other medical professionals who treat or deal with older people and/or their families;
- Facilitate the provision of Continuing Medical Education (CME) credits for medical providers in learning about driving safety; and
- Facilitate referrals of medically at-risk drivers to the driver licensing authority for review.

V. LAW ENFORCEMENT

States should ensure that State and local Older Driver Safety Programs include a law enforcement component. Essential include:

- A communications plan for reaching law enforcement officers with information on medically at-risk drivers;
- Training and education for law enforcement officers that includes emphasis on "writing the citation" for older violators, identifying the medically at-risk driver, and making referrals of the medically at-risk driver to the driver licensing authority; and
- An easy way for law enforcement officers who are in the field to make referrals of medically at-risk drivers to the driver licensing authority.

VI. SOCIAL AND AGING SERVICES PROVIDERS

State Highway Safety Offices should:

- Collaborate with State Units on Aging and other social services organizations on providing support related to older drivers who are transitioning from driving;
- Collaborate with State DOT-Transit offices and local planning organizations to provide information at the local level on how individuals can access transportation services for older people; and
- Develop joint communications strategies and messages related to driver transitioning.

VII. COMMUNICATION PROGRAM

States should develop and implement communication strategies directed at specific high-risk populations as identified by crash and population-based data. States should consider a range of audiences, including families and friends of at-risk drivers. Communications should highlight and support specific policies and programs underway in the States and communities. The programs and materials should be culturally-relevant, multi-lingual as necessary, and appropriate to the target audience. To achieve this, States should:

- Establish a working group of State and local agencies and organizations that have an interest in older driver safety and mobility with the goal of developing common message themes; and
- Focus the communication efforts on the support of the overall policy and program.

VIII. PROGRAM EVALUATION AND DATA

Both problem identification and continual evaluation require effective record-keeping by State and local governments. The State should identify the frequency and types of older-driver crashes. After problem identification is complete, the State can identify appropriate countermeasures. The State can promote effective evaluation by:

- Supporting detailed analyses of police accident reports involving older drivers;
- Encouraging, supporting, and training localities in process, impact, and outcome evaluation of local programs;
- Conducting and publicizing statewide surveys of public knowledge and attitudes about older driver safety;

- Evaluating the effectiveness of educational programs by measuring behavior and attitude changes;
- Evaluating the use of program resources and the effectiveness of existing countermeasures for the general public and high-risk populations;
- Ensuring that evaluation results are used to identify problems, plan new programs, and improve existing programs; and
- Maintaining awareness of trends in older driver crashes at the national level and how this might influence activities statewide.

Miami-Dade County MPO Aging Road Users Safety Plan

Topic: Older Drivers – 7 Tips for Driver Safety

Source: https://dph.georgia.gov/ODS

Author(s): ***Mayo Clinic***

Date: 2017

Abstract:

Driving can sometimes be challenging for older adults. Follow these safety tips for older drivers, from taking good care of yourself to planning ahead and updating your skills.

1. Stay physically active -- Staying physically active improves strength and flexibility. In turn, physical activity can improve driver safety by making it easier to turn the steering wheel, look over your shoulder, and make other movements while driving and parking.

Look for ways to include physical activity in your daily routine. Walking is a great choice for many people. Stretching and strength training exercises are helpful for older drivers, too. If you've been sedentary, get your doctor's OK before increasing your activity level.

2. Schedule regular vision and hearing tests -- Some senses, such as hearing and vision, tend to decline with age. Impaired hearing can be a concern for older drivers by limiting the ability to hear an approaching emergency vehicle or train. Common age-related vision problems — such as cataracts, glaucoma and macular degeneration — also can make it difficult to see clearly or drive at night.

Ask your doctor how often to schedule vision and hearing tests. Even if you think your hearing and vision are fine, stick to your doctor's recommended exam schedule. Problems might be easier to correct if caught early.

3. Manage any chronic conditions -- Work with your doctor to manage any chronic conditions — especially those that might impact driver safety, such as diabetes or seizures. Follow your doctor's instructions for managing your condition and staying safe behind the wheel. This might include adjusting your treatment plan or restricting your driving.

It's equally important to know your medications. Many drugs, including pain medications, sleep medications, antihistamines and muscle relaxants can affect driver safety, even when you're feeling fine. Read your medication labels so that you know what to expect from each one. Don't drive if you've taken medication that causes drowsiness or dizziness. If you're concerned about side effects or the impact on driver safety, consult your doctor.

4. Understand your limitations -- Consider your physical limitations and make any necessary adjustments. For example, if your hands hurt when gripping the steering wheel, use a steering wheel cover that makes holding and turning the wheel more comfortable. You might ask your doctor for a referral to an occupational therapist, who can offer assistive devices to help you drive or suggest exercises to help you overcome your limitations.

You might also adjust your vehicle or choose a different vehicle to better meet your needs. For example, vehicles that feature larger, easier-to-read dials on the dashboard are often popular with older drivers.

5. Drive under optimal conditions -- You can improve driver safety by driving during the daytime, in good weather, on quiet roads and in familiar areas. If visibility is poor, consider delaying your trip or using public transportation. Beyond road conditions, make sure you're in optimal condition to drive. Don't drive if you're tired or angry — and never drive after drinking alcohol.

6. Plan ahead -- When you get in your vehicle, be prepared. Plan your route ahead of time so that you don't need to read a map or directions while driving. If you use a GPS device, enter your destination before you start driving. If necessary, call ahead for directions. While you're driving, don't do anything that takes your focus from the road — such as eating, talking on your cellphone, texting or adjusting the radio.

7. Update your driving skills -- Consider taking a refresher course for older drivers. Updating your driving skills might even earn you a discount on your car insurance, depending on your policy. Look for courses through a community education program or local organizations that serve older adults.

If you become confused while you're driving or you're concerned about your ability to drive safely — or others have expressed concern — it might be best to stop driving. Consider taking the bus, using a van service, hiring a driver or taking advantage of other local transportation options. Giving up your car keys doesn't need to end your independence. Instead, consider it a way to keep yourself and others safe on the road.

Miami-Dade County MPO Aging Road Users Safety Plan

Topic: Older Drivers in the Workplace: How Employers and Workers Can Prevent Crashes

Source: https://www.cdc.gov/niosh/docs/2016-116/pdfs/2016-116.pdf

Author(s): *Center for Disease Control and Prevention and National Institute for Occupational Safety and Health*

Date: 2016

Abstract:

Older drivers at work bring extensive skills, knowledge, and experience built over the course of a lifespan. Research shows that older drivers are more likely than their younger counterparts to adopt safe behaviors such as wearing a seat belt and complying with speed limits. However, those age 55 and older have twice the risk of dying in a work-related crash than younger workers do. One possible reason is that older persons are more likely to be injured if they are in a crash, and more likely to die if they are injured. Motor vehicle crashes account for 32% of all work-related deaths among workers age 55 or older.

Employers: Should set and enforce comprehensive motor vehicle driver safety policies.

- Require the use of seat belts at all times for all occupants.
- Plan and manage travel.
- Consider whether the work can be done without driving. Reducing the amount of driving workers do is the most effective way to prevent motor vehicle crashes.
- Set work schedules that allow workers to obey speed limits and follow applicable rules such as hours-of-service regulations.
- Encourage supervisors and drivers to decide on the driver's route, destination, and travel schedule ahead of time.
- Set policies that allow drivers to consult with their supervisors to adjust driving hours if they have trouble seeing at night, and to stop driving if they are too tired or the weather is bad.
- Prevent distracted driving.
- Ban texting and hand-held phone use while driving.
- Consider banning the use of hands-free phones.
- Require workers to pull over in a safe location if they must text, make a call, or use their hand-held device for other purposes such as looking up directions.

What can employers do to prevent work-related crashes?

- Prevent drowsy driving.
- Design work schedules that allow enough time off so workers can get adequate sleep.
- Allow for breaks during the work shift.

- Allow workers to take a nap of less than 30 minutes or stop in a safe location if they are too tired.
- Promote a positive work environment to reduce job stress, which can affect sleep quality.
- Promote awareness of sleep disorders and other illnesses that may increase drowsiness.
- Prevent impaired driving.
- Set policies that prohibit operating a vehicle under the influence of alcohol, illegal drugs, or prescription and over-the-counter medications that could affect the ability to drive safely.
- Give workers general information about the possible effects of prescription and over-the-counter medications on their driving.
- Promote worker safety, health, and well-being through workplace policies, programs, and activities.
- Incorporate topics such as exercise, healthy diet, and good sleeping habits.
- Assess driving ability.
- Restrict driving based on assessment of actual driving ability, rather than general health status or an arbitrary age limit.
- Make every effort to assign other job duties that don't require driving if a worker's ability to drive is affected temporarily or permanently.
- Promote safe driving.
- Make drivers aware of advanced safety features available in their vehicles and their proper use.
- Provide "refresher" driving training that includes topics such as safe driving strategies, changes in road rules, regulations on distracted driving, and new vehicle safety features.
- Provide the following recommendations to workers to ensure a good vehicle fit.
- Maintain a clear line of sight over the steering wheel.
- Have at least 10 inches separating the driver's chest from the steering wheel.
- Adjust the driver's seat, seat belt, and head restraint to fit safely and comfortably.
- Ensure easy access to gas and brake pedals.

What can workers do to prevent crashes?

- Use your seat belt at all times and require passengers to do the same.
- Prevent distracted driving.
- Do not text or use a hand-held phone while driving.
- Avoid using hands-free phones as much as possible.
- Pull over in a safe location if you must text or make a call.
- Do not drive under the influence of drugs or alcohol.
- Talk with your doctor or pharmacist about the potential effects of your medications on driving.
- Read medicine labels carefully and look for warnings and potential medication interactions.
- Do not drive if you feel lightheaded or drowsy.
- Talk with your doctor about how your medical conditions may affect your driving.
- Maintain good health.
- Engage in regular physical activity two and a half hours per week.

- Talk with a doctor about what health screenings and exams are needed.
- Stay well-rested and alert by getting 7 to 9 hours of sleep each day.
- See a doctor if often tired or sleepy.
- Get a thorough eye exam at least every 1 to 2 years.
- Make sure your eye glass prescription is up-to-date if you need glasses or contacts.
- Use a driving self-assessment tool to evaluate your driving.
- Seek help from a doctor or someone trained to do more intensive driving assessments if needed.
- Take a driving refresher course to learn new driving strategies and recent changes in traffic laws.

Workers: Take the following actions to stay safe while driving for work.

- Talk to your supervisor if you are having difficulty with driving, as you may need to change your driving habits. Some strategies you may discuss are:
- Attend meetings by phone or video conference.
- Map out safe routes in advance to drive on well-lit streets with less traffic, clear signs, and easy parking.
- Make necessary adjustments to your car to ensure a good vehicle fit.
- Maintain a clear line of sight over the steering wheel.
- Have at least 10 inches separating your chest from the steering wheel.
- Adjust your seat, seat belt, and head restraint to fit safely and comfortably.
- Make sure you can easily reach the gas and brake pedals.
- Seek advice from a professional trained in driver rehabilitation or adaptive technologies if chronic pain or decreased range of motion make it difficult to drive.

Miami-Dade County MPO Aging Road Users Safety Plan

Topic: Older drivers – There are more drivers 70 and over today, but they crash less often than they used to.

Source: http://www.iihs.org/iihs/topics/t/older-drivers/fatalityfacts/older-people

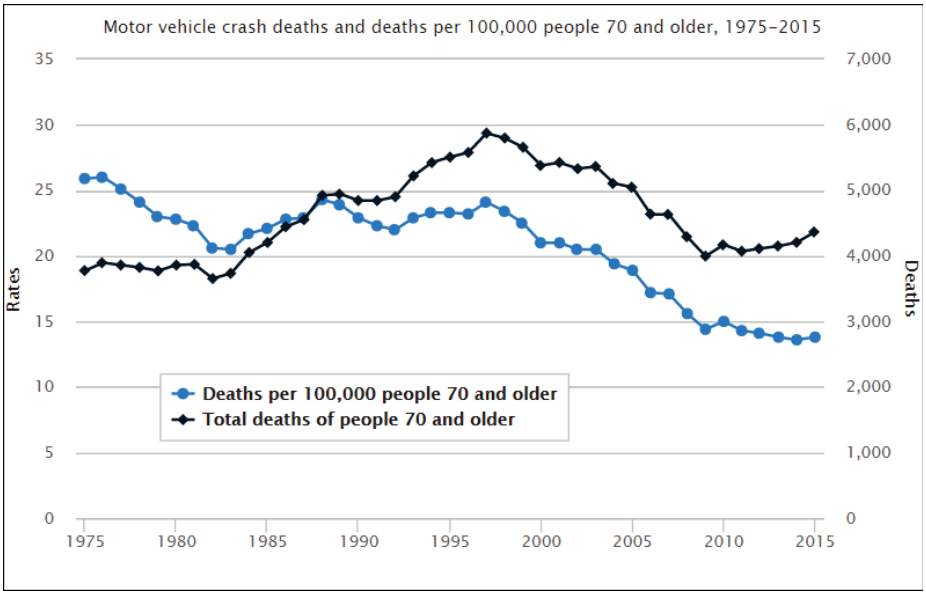
Author(s): Insurance Institute for Highway Safety/Highway Loss Data Institute

Date: 2016

Abstract:

In 2014, motor vehicle crashes accounted for less than 1 percent of fatalities among people 70 and older. People ages 70 and older are less likely to be licensed to drive compared with younger people, and drivers 70 and older also drive fewer miles. However, older drivers are keeping their licenses longer and driving more miles than in the past.

Per mile traveled, fatal crash rates increase noticeably starting at age 70-74 and are highest among drivers 85 and older. The increased fatal crash risk among older drivers is largely due to their increased susceptibility to injury, particularly chest injuries, and medical complications, rather than an increased tendency to get into crashes.



Trends

A total of 4,366 people ages 70 and older died in motor vehicle crashes in 2015. This is 26 percent fewer than in 1997, when deaths peaked, but a 16 percent increase since 1975. Deaths of older people increased 4 percent from 2014 to 2015. The rate of fatalities per capita among older people has decreased 47 percent since 1975.

Seventy-six percent of people 70 and older killed in motor vehicle crashes in 2015 were passenger vehicle occupants, and 16 percent were pedestrians. Since 1997, deaths of older passenger vehicle occupants have declined 30 percent. Although few older adults are

killed while riding motorcycles, this number has risen. Nearly 7 times as many motorcyclists 70 years and older were killed in 2015 than in 1997.

In 2015, 59 percent of the deaths in crashes involving passenger vehicle drivers 70 and older were the older driver themselves, and 14 percent were their passengers. Twenty-seven percent of deaths were occupants of other vehicles or motorcyclists, bicyclists or pedestrians. In contrast, in crashes involving at least one passenger vehicle driver younger than 30, 39 percent of the deaths were the drivers younger than 30, 20 percent were their passengers, and 40 percent were occupants of other vehicles or motorcyclists, bicyclists, or pedestrians.

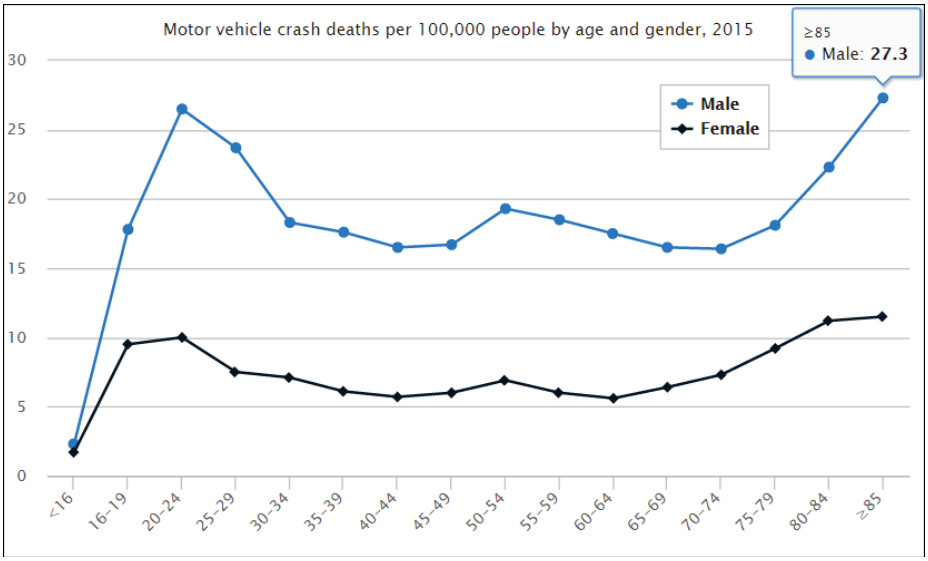
Deaths in crashes involving passenger vehicle drivers younger than 30, ages 30-69, and 70 and older, by type of road user, 2015

	Deaths involving at least one driver younger than 30		Deaths involving at least one driver age 30-69		Deaths involving at least one driver 70 or older	
	Number	%	Number	%	Number	%
Deaths in passenger vehicles with a driver that age						
Drivers	5,099	39	8,972	47	2,402	59
Passengers	2,591	20	2,777	14	582	14
Deaths of other passenger vehicle occupants	2,633	20	2,904	15	467	11
Motorcyclists, bicyclists and pedestrians	2,625	20	4,557	24	635	16
Total*	13,024	100	19,330	100	4,098	100

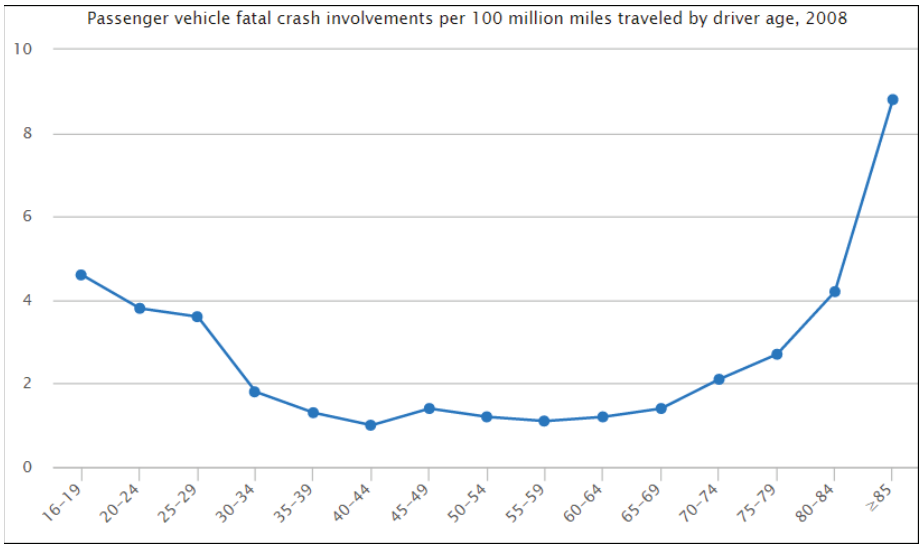
**Total includes other and/or unknowns*

Population and Mileage Rates

In 2015, motor vehicle crash death rates per capita increased among males at ages 75-79 and among females at ages 65-69. Males had substantially higher death rates than females for ages 16 and older.



In 2008, the rate of passenger vehicle driver fatal crash involvements per 100 million miles traveled began to increase noticeably at ages 70-74. Drivers 85 and older had the highest rate of fatal crash involvement.



Crash Types

Among passenger vehicle drivers involved in fatal crashes in 2015, the proportion in multiple-vehicle crashes at intersections increased steadily starting at ages 60-64. Multiple-vehicle crashes at intersections accounted for 40 percent of fatal crashes among drivers 80 and older, compared with 20 percent for drivers ages 16-59.

Alcohol

Eight percent of fatally-injured passenger vehicle drivers 70 years and older in 2015 had blood alcohol concentrations (BACs) at or above 0.08 percent (the DUI legal limit in most states), compared with 17 percent for drivers ages 16-59.

Fatally injured passenger vehicle drivers with BAC ≥ 0.08 percent by age, 2015

Age	Drivers killed	Estimated drivers killed with BACs ≥ 0.08	
	Number	Number	%
16-59 years	12,118	4,423	36
60-69 years	1,917	320	17
≥70 years	2,402	191	8

Miami-Dade County MPO Aging Road Users Safety Plan

Topic: Planning Ahead for Family Road Safety

Source: http://www.tampabaytrafficsafety.com/CTST/Drive%20Safely/PlanningAheadforFamilyRoadSafety.pdf

Author(s): Network of Employers for Traffic Safety and Liberty Mutual Insurance Company

Date: 2014

Abstract:

GOT AGING PARENTS OR GRANDPARENTS?

Per mile traveled, fatal crash rates increase noticeably starting at ages 70–74 and are highest among drivers age 85 and older. The right time to begin to limit or stop driving all together will be different for everyone but it is important that families have a conversation with senior members to begin to think about driving retirement so everyone involved can #PlanAhead.

A PLAN FOR LEADING UP TO "THE TALK:"

- Look for signs such as dents or scrapes in the family member's vehicle
- Take a ride with your senior family member and assess his or her driving. Observe his/her awareness of the driving environment, paying close attention to reaction times and decision-making skills
- Have an alternative mobility plan outlined
- Review tips from Liberty Mutual Insurance Company on how to start the conversation: www.libertymutual.com/autoinsurance/senior-driving/studies/talking-tips

Nervous about having "the talk" with a parent or grandparent? Maybe you shouldn't be… According to a Liberty Mutual *(Liberty Mutual Survey via ORC International, June 2014)* seniors are more open to having a conversation about limiting driving than their children think.

- 84% of seniors are open to discussions about limiting or stopping their driving
- Only 6% of seniors have had that discussion with adult children
- 78% say they are driving regularly even after reporting declining physical abilities
- 16% say they tire easily or have slow reaction times
- 13% report difficulty seeing or hearing
- 9% report getting lost or feeling confused while driving

Miami-Dade County MPO Aging Road Users Safety Plan

Topic: Planning Complete Streets for an Aging America

Source: http://assets.aarp.org/rgcenter/il/inb167_streets.pdf

Author(s): AARP-- American Association of Retired Persons

Date: 2009

Abstract:

Safety on America's Streets is a Major Concern for Older Adults

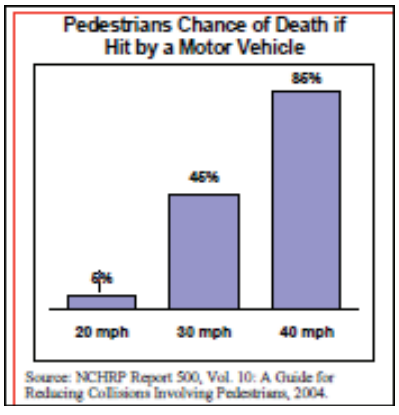
In a poll conducted for AARP in 2009, 40 percent of adults age 50 and older reported inadequate sidewalks in their neighborhoods. More sobering, nearly 50 percent reported they cannot cross main roads close to their home safely. Half of those who reported such problems said they would walk, bicycle, or take the bus more if these problems were fixed. These concerns are borne out by statistics showing older adults are more likely to be victims in both motor vehicle and pedestrian fatalities.

Roads Built Today Need to Serve Tomorrow's Needs

By 2025, one in four U.S. drivers will be age 65 and older. Surveys show today's generation of older Americans drive farther and more often, but the aging process makes driving safely more difficult for some. At the same time, increasing frailty puts older road users at greater risk of serious injury and death. Proper road design can make roads safer for users of all ages. Because of the time it takes to plan, design, fund, and build capital projects, communities need to begin retrofitting their infrastructure now to be ready for the age wave.

Complete Streets Help to "Right the Balance"

Complete Streets initiatives encourage local, regional, and state planning agencies to change policies and procedures so that non-auto forms of travel become a routine part of project development. Complete Streets can also address the needs of older drivers and pedestrians. Three basic planning and design principles can simplify the road environment and increase its safety for all users:



- Slow Down -- Reduce vehicle travel speeds in areas where vehicles and pedestrians interact and where older drivers and pedestrians need more time to make decisions and execute changes. Speed matters. This is especially true at intersections where vehicles and pedestrians interact and where older drivers need more time to react to traffic and execute turns. Half of all older driver deaths occur at intersections. Roads can be engineered for slower speeds through changes to curb radii, lane widths, or replacement of typical intersections with roundabouts.
- Make It Easy -- Make the physical layout of transportation systems easy to navigate for older drivers and pedestrians who have lost some of their dexterity. Intersections can be improved by providing travelers with a connected network of streets with lower-speed routes that are easier to maneuver. This type of network spreads traffic across many streets rather than channeling it on to just a few arteries. Protected left turn lanes with green arrows can cut left turn crashes in half. They should be used where pedestrians are present and in areas of high traffic volume.
- Enjoy The View -- Make it easy for older drivers and pedestrians to notice, read, understand, and respond to visual cues and information. Design improvements can make roads easier to navigate, including: reduction in sign clutter; better placement of

driveways and medians; use of larger sign fonts; reflective signs and pavement markings; and improvements to landscaping and lighting.

- Balance Competing Needs -- Application of these design principles often requires that engineers balance the competing needs of different road users. While older drivers benefit from a rounded curb, it increases turning speeds and pedestrian crossing distance. One way to address this is to provide bike lanes and parallel parking. This increases the effective turning radius without reducing the safety and comfort of pedestrians. The graphic to the right provides an example of how road designers can balance the needs of older drivers and pedestrians using a Complete Streets approach.

Miami-Dade County MPO Aging Road Users Safety Plan

Topic: Policy Agenda for Elder Pedestrian Safety

Source: http://www.allianceforaging.org/afa-ss/PolicyAgendaElderPedSafety.pdf

Author(s): Alliance for Aging

Date: 2013

Abstract:

Elder Pedestrian Safety is:

Addressed in all transportation planning -- There are currently a number of models that incorporate elder pedestrian safety into transportation planning: Complete Streets, Safe Streets for Seniors, Safe Routes for Seniors, and Safe Routes to Aging in Place. Strategic efforts are data-driven and target vulnerable populations and locations based on local demographics, pedestrian traffic patterns, and pedestrian crash data. This approach, which has worked well to improve child pedestrian safety (e.g., school crossing guards, Safe Routes to School), can be adapted for use with other populations.

Addressed in all community planning -- Aging in place has been defined by the Centers for Disease Control and Prevention as "the ability to live in one's own home and community safely, independently, and comfortably, regardless of age, income, or ability level." The model has moved beyond health and human services to include housing, employment, transportation, and quality of life. Public health efforts to encourage elders to walk for exercise (it improves mental and physical health, and reduces isolation) are somewhat dependent on having safe and walkable communities. Creating a pedestrian environment that is safe for elders and people with disabilities creates a safer environment for all pedestrians.

Supported by legislation and enforcement -- In the words of one law enforcement officer, "legislation and education must be reinforced by legal consequences." Twenty years ago, fewer than 60% of drivers wore a seat belt. Thanks to education and enforcement efforts like the "Click it or Ticket" campaign, today over 85% of drivers use their seat belt (National Occupant Protection Use Survey, 2012). Efforts to improve pedestrian safety might benefit from a similar coordinated approach.

Supported by ongoing education -- Reducing elder pedestrian crashes will require ongoing education among pedestrians, drivers, decision-makers, and elected officials. The best models are peer-led; use adult learning principles; describe how aging affects mobility and perception; engage elders in conversations about pedestrian safety and the walkability of their local community; and encourage participation in planning, implementation, and evaluation. Elected officials and decision-makers must understand the needs of elder pedestrians and those with mobility limitations, particularly when setting priorities and allocating funds.

Supported by proven countermeasures -- Because intersections lacking safety features contribute to pedestrian crashes, a variety of countermeasures have been devised to improve pedestrian safety. Funding upgrades to existing roadways has been challenging amid competing priorities in the recent state and federal fiscal climate. Many upgrades are designed to improve traffic flow rather than pedestrian safety, and some modifications that increase traffic flow also increase pedestrian danger. This tension between traffic flow and pedestrian safety must be resolved through appropriate countermeasure selection and implementation.

Miami-Dade County MPO Aging Road Users Safety Plan

Topic: Roadway – Safe and Mobile Seniors

Source: http://www.safeandmobileseniors.org/Roadway.htm

Author(s): Florida Department of Transportation Data on Aging Drivers and the Safe Mobility for Life Coalition

Date: 2013-2014

Abstract: The driving environment has changed dramatically since most older adults became drivers. Roadways today are much more congested and complex than they were when they learned to drive. Roadway improvements designed to compensate for the age-related changes can make th e task of negotiating today's roads and highways not only easier, but safer for everyone.

The Florida Department of Transportation (FDOT) State Traffic Engineering and Operations Office handles issues related to aging drivers, traffic studies, intersection operations, signing, pavement marking, signals and traffic engineering standards for the State Highway System.

Improvements That Benefit Aging Road Users

The FDOT began implementing roadway improvements in 1991 through routine maintenance activities responding to revised design standards based on the *Federal Highway Administration's Highway (FHWA) Handbook for Designing Roadways for the Aging Population (June 2014).*These roadway improvements were installed on our State Highway System and are now part of the state's standards. These improvements fall under the following area:

- Increasing visibility (6-inch wide pavement markings, lighting, reflective pavement markers, and larger lettering on guide signs) Improving pedestrian features (refuge islands, slower walk speeds, high-emphasis crosswalks)
- Providing advance notification (advance guide signs, advance stop, warning, and yield signs)

Specific information and links to the standards and guidelines for the roadway improvements that have been implemented on the State Highway System to benefit aging road users can be located on the FDOT website.

Roadway Features

Roundabouts can help improve safety. These are circular intersections with no traffic signal, where vehicles flow around a center island. Sometimes called the safest form of traffic control in the world, roundabouts are also some of the most attractive features in modern roadway design. While roundabouts help eliminate a number of safety problems, they can be confusing for drivers. FDOT has developed the following educational materials to help safely navigate roundabouts:

- Alert Today Florida's Guide to Modern Roundabouts
- A Guide to 1-lane Roundabouts brochure
- A Guide to 2-lane Roundabouts brochure

Other sources to help drivers understand roundabouts are as follows:

- The FHWA has created a Roundabout website that contains information on crash types and causes, technical implementation and tools, research, and resources including the video, Modern Roundabouts: A Safer Choice.
- The Insurance Institute for Highway Safety (IIHS) has developed a Roundabout Question and Answer page on their website and also a two-minute video on "How Roundabouts Work" that can help educate.
- Liberty Mutual has an article in their magazine on Roundabouts.
- The Traffic Improvement Association of Michigan (TIA) has a comprehensive YouTube video to help educate about Modern Roundabouts.
- Time Magazine wrote an article on Roundabouts.

- US 41, Sarasota, FL Roundabout Design Website Florida Roundabout Safety Video

Intersections -- By their nature intersections can be the most dangerous of roadway features. They are the one place where all road users come together in a mix that has the greatest potential for conflict. More information on other policies and innovations regarding Intersections is available on the FDOT website.
Countdown Pedestrian Signals-- These signals consist of a regular pedestrian signal with standard shapes and color, and an added display showing the number of seconds left to safely cross the street. Resources and information tailored specifically for planners and engineers who are interested in designing for safety and usability for aging drivers can be accessed on the Engineer and Planner Resources page on the FDOT website..

Help on the Road
511 is a free service of the FDOT that offers travel information along with personalized profiles you can choose. The following types of information is provided for travelers throughout the State of Florida and is constantly updated for:

- Traffic Warnings and Updates
- Traveler Information
- Highway Construction Information
- Traffic Information System
- Statewide ***511*** Travel Information

More can be learned ***511,*** including view a tip sheet or other help information on the 511 website including the roadways that are covered by ***511***. A ***511*** video designed specifically for aging drivers in on the on the FDOT YouTube page.

Road Ranger Service Patrol -- The FDOT's Road Ranger Service Patrol has become one of the most effective elements of the incident management program created by the FDOT. It is their mission to provide free highway assistance services during incidents to reduce delay and improve safety for the motoring public and responders. The Road Ranger Service Patrol consists of roaming vehicles, which patrol congested areas and high incident locations along urban freeways and have equipment to assist drivers (such as booster cables, jacks, sand, fire extinguishers, first aid kits, reflective cones, etc.). Stranded motorists just need to dial *FHP (*347) to access the Road Ranger Dispatch. Benefits of the program include:

- Reduction of crashes
- Reduction of incident duration by assisting the Florida Highway Patrol
- Assistance to disabled or stranded motorists

More can be learned about the Road Ranger Service Patrol on their website.

Human Factors Research -- Human factors studies are a vital component to help us gain a better understanding and compare a roadway design improvement or proposed safety countermeasure with its actual effect on the road user, prior to installing the roadway system. Providing engineers and planners a deeper understanding of driver behavior promotes FDOT's goal to create safer roadways for users of all ages. The Safe Mobility for Life Program has been working with Florida State University, Department of Psychology to conduct human factors studies with younger, middle-aged, and older adults to help us gain a better understanding of changes that could benefit aging road users. Here are summaries and links to the final reports for these research projects:

- Aging Driver and Pedestrian Safety Human Factors Studies, Summary [PDF - 365 KB], Final Report [PDF - 2,686 KB]
- Aging Driver and Pedestrian Safety: Parking Lot Hazards Study, Summary [PDF - 268 KB], Final Report [PDF - 2,330 KB]
- Aging Road User, Bicyclist, and Pedestrian Safety: Human Factors Studies Phase 3, Effective Bicycling Signs and Preventing Left-turn Crashes, Summary [PDF - 809 KB], Final Report [PDF - 1,900 KB]
- Aging Road User Studies of Intersection Safety, Summary [PDF - 704 KB], Final Report [PDF - 4,865 KB]

Miami-Dade County MPO Aging Road Users Safety Plan

Topic: Safety Element of the Pinellas County MPO 2040 Long Range Transportation Plan

Source: https://pinellascounty.org/MPO/LRTP40/SafetyElement.pdf

Author(s): Pinellas County MPO

Date: 2014

Abstract:

As of January 1, 2012, approximately 29% of the licensed drivers in Pinellas County were age 61 or older, and 21% of the total population was over the age 65, compared to a statewide average of 21.4% and a national average of 17.6%. The following are estimates of the population over age 65 for the five largest cities in Pinellas County: St. Petersburg – 15.2%; Pinellas Park – 21.1%, Clearwater – 20.7%; Dunedin – 26.6%; and Largo – 25.7%. The University of Florida Bureau of Economic and Business Research estimates that by the year 2030, 26.2% of Florida's population will be over the age of 65. It should be noted, however, that the actual number of senior drivers will likely be fewer than represented because many will give up driving but keep their identification purposes. In 2013, approximately 32% of all crashes in Pinellas County involved an aging road user. Given these facts, resources like safeandmobileseniors.org are particularly important in Pinellas County.

With over 21% of Pinellas County residents over the age of 65 and a median age of 46.3 years, the population of the county is older than the national average. Within the highly-urbanized community designed predominantly around the automobile, older residents may have challenges utilizing the transportation system in Pinellas County. Wide intersections with vehicles making right turns on red can make it difficult for an older resident to cross the street. Fast moving traffic can be difficult for older residents to navigate in an automobile as their vision and reflexes may not be as sharp and quick as those of a younger driver. Due to the large number of older citizens within the county, Pinellas needs to consider appropriate strategies to ensure the safety of this large group of aging road users. National studies show that today's older drivers are driving longer and driving more miles per year than in the past, and research shows that older adults can expect to outlive their ability to safely drive by 7 to 10 years. As an increasing number of aging adults drive on the county's roadways or travel the roads as pedestrians, passengers, bicyclists or motorcyclists, the issue of transportation safety for this population is an increasingly significant concern.

Miami-Dade County MPO Aging Road Users Safety Plan

Topic: Seniors Continue Driving Despite Declining Physical Abilities, Nearly All Would Consider Stopping for Right Reason

Source: http://afods.org/category/c14-news/c103-older-drivers-in-the-news/

Author(s): Liberty Mutual Insurance Company

Date: 2014

Abstract:

A 2014 survey by Liberty Mutual Insurance found that the majority of senior drivers are behind the wheel regularly, even with reported limited physical abilities. Though many seniors drive safely well into their later years, it's inevitable that they may eventually have to face the difficult decision to stop driving. While 84 percent of senior drivers are open to conversations about limiting or stopping their driving, according to the survey, only 6 percent have spoken with someone about their driving abilities.

Based on a survey of 1,000 adults aged 75 and older, 41 percent drive every day and 38 percent drive several times a week.

Senior drivers report that in the six months preceding the survey:

- Seventy-eight percent (78%) drive regularly, even after reporting declining physical abilities; with: one in six (16 %) saying they tire easily or have slow reaction times, 13 percent reporting difficulty seeing or hearing, and nearly one in 10 (9 percent) reporting getting lost or feeling confused while driving.
- Avoiding driving conditions: 85 percent have avoided at least some type of driving condition or location, including driving after dark, during heavy traffic hours or in unfamiliar areas.

While nearly all senior drivers would consider limiting or stopping their driving, if presented with the right reason, most are hesitant about the idea of life without driving. Concerns that may prevent seniors from transitioning to the passenger seat include:

- Losing independence: 64 percent;
- Becoming less active: 47 percent;
- Difficulty finding alternative forms of transportation: 45 percent; and
- Feeling isolated: 45 percent.

Liberty Mutual concludes that it's more important than ever for children and loved ones of senior drivers to have conversations about driving before it is time to stop. The right time to stop driving is a personal decision and will be different for everyone. The first step is starting the conversation, and an essential part of that is a discussion about alternatives to driving. The transition from the driver's seat to the passenger seat is gradual, and understanding the available transportation alternatives helps older people maintain the independence, mobility and social engagement essential for quality of life.

Miami-Dade County MPO Aging Road Users Safety Plan

Topic: Seniors: Evaluate Your Driving Ability

Source: http://seniordriving.aaa.com/evaluate-your-driving-ability/

Author(s): American Automobile Association

Date:

Abstract: Drivers 65 Plus is a brochure that features a 15-question self-rating driving assessment exercise designed to help you examine your driving performance. After answering the questions, follow the instructions to calculate your score and get information about your driving performance. The driving assessment will list your strengths and weaknesses, along with suggestions for how to improve your driving.

Drivers 65 Plus: Self-Rating Form ★ ★ ★ ★ ★ ★ ★ ★ ★ ★ ★ ★

INSTRUCTIONS: For each of the following 15 questions, check the symbol (✓) of the one answer that best describes you.

		Always or Almost Always	Some-times	Never or Almost Never
1.	I signal and check to the rear when I change lanes	○	□	□
2.	I wear a seat belt	○	□	□
3.	I try to stay informed on changes in driving and highway laws and techniques	○	△	□
4.	Intersections bother me because there is so much to watch from all directions	□	△	○
5.	I find it difficult to decide when to merge with traffic on a busy interstate highway	□	△	○
6.	I think I am slower than I used to be in reacting to dangerous driving situations	□	□	○
7.	When I am really upset, it affects my driving	□	□	○
8.	My thoughts wander when I drive	□	△	○

9. Traffic situations make me angry	□	△	○
10. I get regular eye exams to keep my vision at its sharpest	○	□	□
11. I check with my doctor or pharmacist about how the medications I take affect my driving ability. (If you do not take any medication, skip this question)	○	□	□
12. I try to stay informed of current information about health and wellness habits	○	△	□
13. My children, other family members or friends have expressed concern about my driving ability	□	△	○
Note new headings:	None	One or Two	Three or More
14. How many traffic tickets, warnings, or "discussions" with law enforcement officers have you had in the past two years?	○	△	□
15. How many collisions (major or minor) have you had during the past two years?	○	□	□

Self Scoring: Count the number of checkmarks in the squares and record the total in the square below. Follow the same procedure for the triangles and circles.

Scoring: **There are 5 steps.**

Step 1: Write the Check Mark Total recorded in the square on the previous page in the square to the right.  X 5 = _____

Step 2: Write the Check Mark Total recorded in the triangle on the previous page in the triangle to the right.  X 3 = _____

Step 3: Multiply the number in the square by 5.

Step 4: Multiply the number in the triangle by 3.

Step 5: Add the results of Steps 3 and 4. YOUR SCORE IS _____

Interpretation of Score:

The lower the score, the safer you are as a driver.

The higher the score, the more danger you are to yourself and others.

No matter what your score, look at the *Suggestions for Improvement* section for each area in which you checked a square or triangle. These are the areas in which you can improve the most.

Score	Meaning
0 to 15	GO! You are aware of what is important to safe driving and are practicing what you know. See the *Suggestions for Improvement* in the following section of this booklet, to learn how to become an even safer driver.
16 to 34	CAUTION! You are engaging in some practices that need improvement to ensure safety. Look to the *Suggestions for Improvement* section to see how you might enhance your driving.
35 and over	STOP! You are engaging in too many unsafe driving practices, and might pose a hazard to yourself and others. Examine the areas where you checked squares or triangles. Read the *Suggestions for Improvement* section for ways to correct these problem areas.

These scores are based on what drivers 65 and over have told us about driving practices and habits. Your score is based on your answers to a limited number of important questions. For a complete evaluation of your driving ability, many more questions would be required, along with medical, physical, and licensing examinations. Nevertheless, your answers and score give some indication of how well you are doing and how you can become a safer driver.

In general, a checked square for an item reflects an unsafe practice or situation that should be changed immediately. A checked triangle means a practice or situation that is unsafe, or on its way to becoming unsafe, if nothing is done to improve it. Checking circles is a sign that you are doing what you should to be (and remain) a safe driver.

Most of the square and triangle answers represent practices or situations that can be improved by most drivers. The following section contains suggestions for improvement, divided into each of the 15 areas. You should focus on those areas for which you checked squares or triangles.

Miami-Dade County MPO Aging Road Users Safety Plan

Topic: Smart Vehicle Features for Older Drivers

Source: http://publicaffairsresources.aaa.biz/wp-content/uploads/2015/12/Smart-Features-for-Older-Drivers-Brochure.pdf

Author(s): University of Florida in association *with* AAA Association Communication

Date: 2015

Abstract:

How does driving change as we age?

Our ability to drive requires not only knowledge and experience, but healthy visual, physical and cognitive capabilities. While our knowledge and experience expand with age, changes to and possible losses in vision, physical health and mental capabilities require adjustments to help us remain safe, responsible drivers. Natural age-related changes occur so subtly that we don't notice them progressing. For example:

- At age 40 -- Mental sharpness begins to diminish, thought processing slows, multitasking is more challenging, night vision worsens and recovery from glare is reduced.
- At age 50 -- Nine in 10 people require bifocals, and reaction time slows.
- Between ages 30 and 60 -- Muscle strength and range of motion can decrease up to 40 percent.
- At age 70 -- Arthritic joints may make movement painful and restrict mobility, and conditions such as stroke, Parkinson's disease, hypertension and diabetes may affect how we interpret and react to the driving environment.

Choosing a vehicle with the right features can help us adapt to these changes and improve safety and comfort behind the wheel. So, which features should you look for? AAA worked with the University of Florida Institute for Mobility, Activity and Participation to help answer this question and identify vehicle features that optimize older driver comfort and safety in three steps.

STEP !: Understand How Vehicle Features Can Keep Drivers Safer

Experts recommend considering the following factors when evaluating a vehicle:

- Safety features such as seat belts and the positions and types of airbags.
- Ergonomics or design features, that reduce operator fatigue and discomfort.
- Comfort such as ease of entry and exit, leg room and size of control buttons.
- Value which incorporates the total cost of ownership including price, operating and maintenance costs, as well as reliability, fuel economy and resale value.

Regardless of age and overall health, any vehicle purchased should include:

- Proven crashworthiness. Vehicle crash test and rollover ratings are provided by the National Highway Traffic Safety Administration, www.safercar.gov, and the Insurance Institute for Highway Safety, www.iihs.org/ratings.
- Side and dual-stage/threshold airbags. Side airbags protect the torso, pelvis and head. Dual-stage and dual-threshold airbags are recommended because senior drivers risk injury if airbags deploy with too much force. The force with which this type of airbag inflates depends on crash severity, distance from the driver and passenger and weight of the driver and passenger to ensure optimal protection for all vehicle occupants during a crash.
- Head restraints and extra padding. Head restraints move forward to cushion the head and reduce the risk of neck injuries when a car is hit from behind. Interior crash protection, such as extra padding, also can minimize injuries.
- Antilock brakes. An antilock braking system, or ABS, prevents wheels from locking and ensures better steering control during emergency braking. ABS automatically pumps the brakes, up to 18 times per second, to prevent the wheels from locking.
- Dynamic stability control. This feature helps prevent loss of control in a turn, especially on slippery roads, to enable drivers to compensate for slower reaction times and make quick corrections.

STEP 2: Tailor to Your Needs -- Recommended features that will help the older driver adapt to changing visual, physical and cognitive needs are listed here.

- Six-way power adjustable seats -- Seats that adjust forward, backward, up, down and seatback forward and backward that provide easy entry and exit from vehicle and facilitate seat adjustment for leg room and reduction of hip or leg pain
- Comfortable seats set between mid-thigh and lower buttocks -- Ease vehicle entry and exit
- Low door threshold -- Eases vehicle entry and exit
- Leather or faux leather seats -- Eases vehicle entry and exit
- Adjustable brake and accelerator foot pedals -- Allow drivers to comfortably reach pedals without having to slide down in the seat and compromise visibility. Adjustable brake and accelerator foot pedals. They also help drivers reach pedals, yet maintain a safe distance from the steering wheel airbag
- Tilt and telescoping steering wheel - Helps drivers maintain at least 10 inches between their chest and the front airbag
- Six-way adjustable seats -- Help drivers obtain a line of sight above the steering wheel and sit comfortably.

STEP 3: Make Additions (Optional) -Inexpensive assistive devices can be added to your car to further address your specific needs.

- Larger, angled rear and side mirrors -- Improve visibility and minimize blind spots
- Pedal extenders -- Help drivers obtain a safe distance from the steering wheel/airbag and optimize visibility
- Seat belt adjuster --Improves seat belt positioning
- Steering wheel covers -- Improve grip for drivers with arthritic hand joints
- Seat belt pull --Reduces distance in reaching for the seat belt and improves ease of grasping seat belt
- Cushions and seat pads -- Improve line of sight and can help alleviate back or hip pain
- Shear seat covers -- Decrease resistance when adjusting seated position
- Key extenders -- Offer more leverage for turning keys in locks or the ignition and reduce stress on finger joints
- Flat swivel seat -- Eases vehicle entry and exit
- Leg lift straps -- Allow the driver to use upper body strength to lift legs into and out of the vehicle
- Rain-repelling glass treatment -- Sheds water on exterior glass and improves visibility
- Hand controls -- Allow the driver to perform all vehicle maneuvers and functions without the use of lower extremities
- Anti-glare film for side mirrors —- Reduces glare from other vehicle headlights

Miami-Dade County MPO Aging Road Users Safety Plan

Topic: Straight Talk For Mature Drivers: Maintaining Your Vehicle

Source: http://exchange.aaa.com/wp-content/uploads/2012/08/Straight-Talk-For-Mature-Drivers-Maintaining-Your-Vehichle.pdf

Author(s): Automobile Association of America

Date: 2017

Abstract:

Driving Habits Determine Maintenance Needs

The way you drive can affect the kind of maintenance your vehicle needs.

- A vehicle driven primarily on the highway can go longer between oil changes than one used for stop-and-go trips around town.
- Hard acceleration with a cold engine can increase engine wear.
- Stay aware of traffic ahead and maintain a constant speed. Repeatedly pressing the gas and brake pedals on and off reduces fuel economy and creates needless wear and tear on the brakes, transmission and suspension. Where one drives can also affect maintenance. If you drive on dusty roads, for example, you may need to change your air filter more often.

Doing what has always been done may *no*t be enough anymore. Regular checks and preventive maintenance are good habits that keep a vehicle operating safely. However, newer models may require care on a different schedule from an older routine. Oil changes are a good example. With newer vehicles, the "3,000 miles or 3 months" rule may not apply.

Climate Control -- These tips will help keep a vehicle in good running condition in any kind of weather.

- Modern coolants protect the inside of an engine from rust and corrosion. Always maintain the proper level of anti-freeze, even in a warm climate. Change the coolant at the intervals specified by the vehicle's manufacturer.
- Check the windshield for 'dings". Freezing weather and a warm vehicle interior can cause "thermal shock," which may turn small dings into large cracks. If caught early enough, small "bullseye" chips can be repaired before they grow and the entire windshield has to be replaced.
- In cooler weather, tires can lose a pound of pressure for every 10-degree drop in temperature.
- Ensure the lights work properly at night and in a storm or fog.
- Make sure all the vehicle's windshield wipers are in good condition to see clearly during storms. If it snows frequently, consider buying winter wiper blades that have a protective rubber boot over the frame to prevent snow and ice from becoming lodged there.
- As winter approaches, consider switching to oil and other fluids recommended for winter use.
- Never attempt to jump-start a weak battery that has frozen.

Take Care of Your Vehicle -- Following these maintenance tips could help keep your car on the road for years to come.

- Check battery cable connections regularly. They should be tight, with no corrosion on the terminals. Remove corrosion with a toothbrush dipped in a paste of baking soda and water.
- Replace or recharge a weak battery, because it increases wear on your alternator and starter.
- If the battery is not sealed, check the water level. If it is low, add distilled water — not tap water.
- Many cars use air conditioning to defrost windows. Run the air conditioner every few weeks, even in winter, to ensure seals in the system remain lubricated.

- Apply and release the parking brake regularly to make sure cables do not rust, corrode and/or seize.
- Have tires rotated every 7,500 to 10,000 miles. This can add up to 10,000 miles to the life of the tires.
- If the vehicle "shimmies" or vibrates at highway speeds, have tires balanced and suspension checked.
- Make sure tires are inflated to the recommended level. Proper pressures can be found in the owner's manual or on a tire information decal usually found on a door jamb or inside the fuel filler door. Proper inflation will save wear and tear on the tires and improve fuel mileage.
- Keep maintenance records and follow your vehicle manufacturer's maintenance recommendations

Looking Good Under the Hood -- A vehicle's warranty outlines required maintenance. The following tips will help indicate what to do and when to do it — but the ultimate resource is your owner's manual.

- At each refueling, check fluid levels, including window washer fluid.
- Check tire pressure at least once a month.
- Use fuel with the octane level recommended by the vehicle manufacturer.
- Change oil as recommended in your owner's manual, using the weight and grade of oil it recommends. Avoid oil additives — some do more harm than good.
- Examine radiator hoses for bulges, cracks or leaks.
- Periodically check the air filter for accumulated dirt.
- Be sure vehicle service provider uses a torque wrench when tightening lug nuts. Over-tightening the nuts can warp brake rotors and make the brake pedal pulsate.
- Look for cracks or looseness in engine belts. Broken belts are a major reason for roadside breakdowns.
- Keep battery terminals clean and check the battery's fluid level. If possible, add distilled water to bring the electrolyte solution back to the proper level.
- Routinely check headlights, brake and parking lights, backup lights and turn signals.
- The vehicle should be put on a service lift at least once a year to check for damage from road hazards.

Miami-Dade County MPO Aging Road Users Safety Plan

Topic: Straight Talk for Mature Drivers: Meeting the Challenge

Source: http://seniordriving.aaa.com/download/straight-talk-for-mature-drivers-meeting-the-challenge/?wpdmdl=402

Author(s): American Automobile Association

Date: 2005

Abstract:

Risks for Mature Drivers

Some difficult tasks for senior drivers may include:

- Yielding right-of-way.
- Making left turns.
- Driving in heavy traffic.
- Backing up a vehicle.
- Maintaining proper speed.
- Responding to new traffic signs, signals, road markings or different traffic patterns and roadway designs.

Fine-Tune Driving Habits -- Five pointers that will help protect all drivers:

- Move into an intersection only when you have checked the area for pedestrians, cyclists, hazards and any motor vehicles — don't allow other drivers to pressure you into sudden moves.
- Limit conversation and keep the radio volume low to reduce potential sources of distraction.
- Ensure your windshield is clean and visibility is clear. Don't smoke in the vehicle — smoking leaves a film on your windshield that may interfere with visibility.
- Don't drive when you are tired, depressed or in the grips of a strong emotion.
- Never drink and drive. As your metabolism changes with age, even one drink can impair your ability to drive.

Tips for Staying Safer on the Road – Time your trip for daylight driving, avoiding rush-hour traffic, storms and adverse conditions.

- Choose routes with well-marked, well-lit streets and easy-to-reach parking places.
- Avoid making difficult left turns such as at intersections with no traffic signal.
- Note landmarks and exits that will help you navigate.
- Turn on your headlights and fasten your seat belt — even for quick trips.
- Sit up straight and adjust your seat so the top of your steering wheel is shoulder-high. Adjust seats and mirrors for the best visibility.
- Drive at the posted speed limit. If you must drive slower than other vehicles on the road, stay in the right lane.
- Drive defensively and yield the right-of-way.
- In good weather, leave at least three seconds of space between you and the car ahead of you. In bad weather, double your following distance.
- Stay in the appropriate lane. Do not weave from lane to lane, straddle two lanes or change lanes near intersections.
- Use turn signals to help other drivers plan for your actions. Remember to cancel the signal if it doesn't automatically shut off.
- Take a break after every 90 minutes of driving. Get out of the vehicle and stretch to help relieve stiffness and fatigue.

Cell Phones and Driving -- Distracted driving — including the use of cell phones, among other activities — contributes to thousands of automobile crashes each year. However, carrying a cell phone with you while traveling can provide an extra measure of security in the event of a breakdown or other roadside emergency. Pre-program the cell phone with 9-1-1 and AAA's toll-free roadside assistance number, (800) AAA-HELP.

Refine Your Skills -- A refresher course is a good investment. Most communities offer courses to update drivers on defensive tactics and may include hands-on experience. State motor vehicle departments provide lists of approved courses. In at least 30 states, you become eligible for insurance discounts or reduced infraction points after completing certified driving courses, such as AAA's Safe *Driving for Mature Operators Driver Improvement Program*.

Miami-Dade County MPO Aging Road Users Safety Plan

Topic: The Definition of "OLDER"

Source: https://www.nhtsa.gov/sites/nhtsa.dot.gov/files/older_people_811873.pdf

Author(s): National Highway Traffic Safety Administration

Date: 2014

Abstract:

What age constitutes being "older"? The general public tends to consider people as "older" beginning around age 65. "Older" is a general description that masks the complexity of aging and risk – both of crashing and of sustaining injuries in a crash. There are many variables that need to be assessed when defining a person as "older." The variable requiring assessment will change based on changing scenarios. For example, a 75-year-old person with severe osteoporosis might be "older" from a tolerance or fragility standpoint while a 65-year-old suffering from dementia might be "older" from a functional standpoint. Proper assessment of age in relation to the issues being addressed is essential to robust solutions and the implementation of countermeasures. In most cases, increased injury or crash risk with age is curvilinear, with initially slight elevations that increase more sharply with age. Documenting the age at which risk increases based on the task and/or context requires efforts related to nearly all aspects of this plan.

Miami-Dade County MPO Aging Road Users Safety Plan

Topic: The Older and Wiser Driver

Source: http://seniordriving.aaa.com/download/older-and-wiser-driver-brochure/?wpdmdl=400

Author(s): ***American Automobile Association***

Date: 2012

Abstract:

Sharpening Your Driving Skills

Aging is inevitable, but growing older doesn't have to mean giving up an active life. While aging does impose physical limitations, many people achieve their greatest successes later in life. For example, businessman Henry M. Leland founded the Cadillac Automobile Company when he was 59 years old. A few years later he left that company and started Lincoln Motor Company at the age of 74. Traffic safety is vital for drivers of all ages, but older drivers experience physical changes that can affect driving ability -- changes in vision, reaction time, and flexibility. While older drivers as a group do have more crashes than people in their 40s, their individual safety records differ as much as those of any group. Here are some things all drivers should pay attention to, but which are more likely to affect older drivers.

Vision -Eyes change with age, and usually not for the better. Physically, the eye's lenses lose the ability to change focus quickly, peripheral vision narrows, and the retina becomes less sensitive to light. The amount of light needed to drive roughly doubles every 13 years. A 45-year-old requires four times as much light as a 19-year-old, and a 60-year-old requires 10 times as much. Because 90 percent of decisions made while driving are based on information acquired through the eyes, good vision is crucial to safe driving.

- Get regular eye exams. -- The American Optometric Association recommends comprehensive eye exams every two years for persons age 60 and younger, and annually for those 61 and older. Cataracts are common and can be corrected with surgery; the progress of many other eye problems can be slowed if they are detected in time.
- If trouble with night vision or glare is a problem, limit driving to daytime hours.
- Turn head frequently to compensate for diminished peripheral vision.
- Keep headlights, mirrors, and windshields clean – including the glass inside the car.
- Add a larger rearview mirror to increase the range of visibility.
- Keep eyes up – look at the road ahead to see trouble before you reach it. In the city look at least one block ahead; on the highway look at the section of the road you'll reach in 20 to 30 seconds.

Cognition -- While older minds may be just as sharp as younger ones, they react more slowly. Age lengthens the time it takes the brain to process information and makes it harder to ignore distractions. Reacting to a situation while driving involves three steps: sensing, deciding, and acting. For an older driver, each step takes longer – and possibly so long that it becomes dangerous.

Here are some ways to help compensate for the natural tendency to need more time to act:

- Leave more room in front of the car.
- Allow a greater distance to the vehicle ahead.
- Avoid left turns if making them is uncomfortable. In that situation make three right turns to avoid having to make a left. If turn a left turn is a must, pay extra attention to the speed of the on-coming cars.
- Make sure there is enough time and space to safely cross oncoming traffic before turning, and watch for pedestrians.
- Eliminate distractions, such as the radio or cell phone. If people in the car are a distraction, tell them they'll have a safer ride if they're
- Plan to go over the route ahead of time, to avoid an intersection at which a last-minute decision about which way to turn may be needed. If freeways are confusing or feel too fast-moving, use side roads. By the same token, if rush hour is stressful, limit driving to slower times of day or use public transportation.

Fitness – A driver who gets no physical exercise may not have the strength, flexibility, or coordination to operate a vehicle safely. Even simply taking a brisk walk every day may help staying physically fit. Walk for at least 20 minutes five times a week or the equivalent. Gardening, golf, tennis, and other sports can also help keep maintain good physical shape. Stay mentally active. Use problem-solving skills to do jigsaw puzzles, crosswords, or other non-driving activities to keep your mind active and engaged in ways that may help stay alert. A new skill or hobby can help keep the mind flexible.

Medication -- Medications can interfere with driving by making the driver drowsy or distracted. This includes many over-the-counter medications, such as decongestants or cold remedies. Some of the worst offenders include tranquilizers, pain pills, sleep medicines, antidepressants, cough medicines, and antihistamines.

- Read the fine print. If a medication you're taking is labeled "Do not use while operating heavy machinery," let someone else drive.
- Inform your doctor about the non -prescription medication being taken. This includes alcohol, which can interact with some drugs and cause serious side effects.
- Discuss medication with a doctor or pharmacist a medication's effects, and how it interacts with any other drugs being taken. Any medication the causes a driver to be sleepy or disoriented, don't drive.

When to Stop -- A driver's chronological age is not a good predictor of driving ability. What counts on the road is performance and both physical and mental fitness. Here are a few of the signs of diminished capacity for driving safely:

- Having a series of minor accidents or near crashes
- Having wandering thoughts or being unable to concentrate
- Being unable to read ordinary road signs
- Getting lost on familiar roads
- Having other drivers honk at you frequently

• Being spoken to about your driving by police, family, and friends

Getting Additional Help -- Many driver refresher courses are offered in local communities. These courses update changes in traffic laws, signs, signals, and markings, and offer safe driving tips. Some also offer actual behind-the-wheel assessments, which can be especially helpful in sharpening driving skills. Behind-the-wheel assessments are also offered by some physical rehabilitation specialists; these can be very important when one's driving abilities have been affected by a stroke or other serious ailment.

Miami-Dade County MPO Aging Road Users Safety Plan

Topic: Traffic Safety Facts – 2012 Data

Source: https://crashstats.nhtsa.dot.gov/Api/Public/ViewPublication/812005

Author(s): National Highway Traffic Administration

Date: 2014

Abstract:

In 2012, there were 5,560 people 65 and older killed and 214,000 injured in motor vehicle traffic crashes. These older people made up 17 percent of all traffic fatalities and 9 percent of all people injured in traffic crashes during the year. Compared to 2011, fatalities among people 65 and older increased by 3 percent. Among people injured in this age group there was a 16-percent increase from 2011. In 2012, 14 percent of the total U.S. resident population (43.1 million people) were 65 and older. The older population fatality rate per 100,000 U.S. resident population steadily declined from 18.7 in 2003 to 12.9 in 2012.

Among the 65-and-older age group from 2003 to 2012, the total population increased by 20 percent (males increased by 26% and females increased by 16%). However, driver fatalities for this age group declined by 15 percent (decreased for males by 10% and for females by 26%); motorcyclist fatalities increased by 201 percent (males increased by 194% and females increased by 333%). Furthermore, among the 65-and-older age group from 2003 to 2012, pedal-cyclist fatalities increased by 80 percent (males increased by 83% and females by 50%).

Thirteen percent fewer people were killed in crashes involving older drivers from 6,805 in 2003 to 5,894 in 2012.While the overall trend shows a decline for those 10 years, the number of people killed in crashes involving older drivers increased in 2012 by 5 percent compared to 2011.

Most traffic fatalities involving older drivers in 2012 occurred during the daytime (75%), occurred on weekdays (69%), and involved other vehicles (64%). Among drivers involved in fatal crashes in 2012, older drivers had the lowest involvement rate per population as compared to other driver age groups. The involvement rate for male drivers (65+) was 21.73 and the involvement rate for female drivers (65+) was 6.80.

In 2012, among the older population, the fatality rate for the 80-84 age group was 16.39 per 100,000 population, which was higher than any other older age group. The fatality rate for the 85+ age group declined by 37 percent, from 25.46 in 2003 to 15.98 in 2012.

Miami-Dade County MPO Aging Road Users Safety Plan

Topic: Understanding Older Drivers: An Examination of Medical Conditions, Medication Use, and Travel Behaviors

Source:
https://www.aaafoundation.org/sites/default/files/Medical%20Conditions%20%26%20Travel%20Behavior%20FS_0.pdf

Author(s): Sandra Rosenbloom and Robert Santos THE URBAN INSTITUTE

Date: 2014

Abstract: One in six drivers on U.S. roads today are 65 years of age or older. Though generally a very safe group of motorists, older Americans may be more likely to have a medical condition or use medications that can affect their driving. Moreover, as people age, fragility begins to make crash survival and recovery more difficult. As such, finding ways to keep seniors safe and mobile is among the AAA Foundation's top priorities. Key Findings of this study are that it corroborates numerous findings in older driver research, particularly pertaining to the higher prevalence of medical conditions and medication usage among older drivers, and the active steps many take to limit their driving to favorable conditions. There is also clear evidence that higher-income seniors drive more and self-regulate less, even when they have medical conditions. More specific findings are:

Licensing and Travel Patterns

- Older drivers are an active group:
  - ✓ Over 75% of male drivers and 60% of female drivers over age 85 drove five or more days per week; and
  - ✓ Among the same group, fewer than 5% of men and 10% of women drove less than once a week.
- Licensing rates have increased sharply among older drivers:
  - ✓ In the early 1970s, **barely half** of all Americans ages 65 and older had licenses;
  - ✓ By 2010, this had increased to almost **84%**.
- Between 1990 and 2009, every measure indicates increased automobility of older drivers:
  - ✓ Daily travel patterns for drivers 65+ indicate more trips, more miles driven, and more time spent driving in 2009 than 1990.

Medical Conditions and Medication Use

- Older drivers are significantly more likely to report a medical condition than younger drivers:
  - ✓ Drivers ages 65-69 are twice as likely to report having a medical condition as drivers 24-64
- Medication use is very high among older drivers:
  - ✓ Over 90% of older drivers take prescription medications; and
  - ✓ Of those who take any medication, over two-thirds take multiple medications.
- Gender differences are extremely large in all aspects of medication use, travel behavior, and driving self-regulation among motorists ages 65 and older:
  - ✓ Women without a medical condition drive less than men with a medical condition;
  - ✓ Women drivers who use medications or who have a medical condition are more likely to self-regulate their driving than are comparable men; and
  - ✓ Women are more likely to report having a medical condition and using multiple medications.
- Older drivers who report using medications or having a medical condition are more likely to self-regulate their driving behavior:
  - ✓ Three-quarters of drivers ages 65 and older who have a medical condition report reduced daily travel;
  - ✓ Older drivers using medications avoid night driving at double the rate of drivers ages 24-64; and
  - ✓ Older drivers using medications drive fewer days each week.
- Income appears to play a role in ways that warrant future research:
  - ✓ Self-regulatory behavior declines with increasing income among people taking multiple medications or who have a medical condition; and
  - ✓ Women drivers ages 65-69 with incomes under $13,000 were 62% more likely to restrict nighttime driving than women of the same age with incomes over $70,000.

Miami-Dade County MPO Aging Road Users Safety Plan

Topic: Walk Your City

Source: https://walkyourcity.org/

Author(s): *Walkyourcity.org*

Date: 2017

Abstract:

Walk [Your City] helps you boost a community's walkability, linking informational street signs for people with web-based campaign management and data collection to complement traditional approaches to wayfinding.

According to Jeff Speck's *"General Theory of Walkability"*, walkable environments are useful, safe, comfortable, and interesting.

- Useful: "most aspects of daily life are located close at hand and organized in a way that walking serves them well";
- Safe: "the street has been designed to give pedestrians a fighting chance against being hit by automobiles; they must not only be safe but feel safe, which is even tougher to satisfy";
- Comfortable: "buildings and landscapes shape urban streets into 'outdoor living rooms,' in contrast to wide-open spaces, which usually fail to attract pedestrians";
- Interesting: "sidewalks are lined by unique buildings with friendly faces...signs of humanity abound.

These criteria are shaped by land use/zoning policies, urban design, and social context / civic culture.

Three case studies are summarized here for, a downtown, a university campus, and a suburban mall.

WALK [Downtown Greensboro, NC]

CONTEXT -- Downtown Greensboro is a growing part of the greater Greensboro area. Action Greensboro is a non-profit organization of foundations and the business community dedicated to projects that enhance business recruitment efforts and community vitality. They are located on Elm Street, a secondary "main" street in downtown that is undergoing a renaissance. Their project area was along the main north/south corridor to promote pedestrian trips beyond the more active block or two on Elm St. The focus of the project is on capturing business workers near their offices and directing them up to 10 minutes south to restaurants and shops they typically write off as lunch, or after-work spots.

PROCESS -- Action Greensboro set a goal to raise money for 50 customized signs to raise awareness and start a dialogue about the walkability of downtown with questions such as*: Did you know it's only a 13-minute walk from Cheesecakes to the Grasshoppers Stadium? Have you ever walked it?* Each sign will be customized to a unique downtown destination off Elm Street with a code to help walkers get there.

OUTCOME -- Action Greensboro raised the necessary funds in one day, planning and installing the campaign only three weeks after receiving the funding. Installation included over a dozen funders from the crowd-funding campaign and took about an hour and a half on a warm October afternoon. The local TV news covered the story, sharing Walk [Downtown Greensboro] with the surrounding metro area, while also instigating a dialogue with local officials about walkability. After 2 months, the signs came down, but now the city is exploring how to make the signs more permanent and official.

WALK [WAYNE STATE University, MI]

CONTEXT -- Located in Midtown Detroit, Wayne State University (WSU) is an urban university working to strengthen its connection to the surrounding neighborhood. Historically a commuter school, WSU has an increasing number of students living on campus. At the same time, the university seeks to more broadly share its resources with its neighbors.

PROCESS -- In the spring of 2014, the WSU Office for Economic Development convened internal stakeholders at WSU around the idea of placemaking on campus. recognizing that. The committee that formed had conversations about how other cities and campuses tested "quick, light, cheap" placemaking concepts. The nearby Campus Martius Park served as a helpful local example: Project for Public Spaces had worked with downtown stakeholders to transform this roundabout into a highly popular destination for Detroit residents. What would students, faculty, staff and neighbors want to see at WSU? Over the fall semester, the committee worked to gather ideas about ways the campus' public spaces could be enriched and improved. From the Wayne State Farmers Market to football games, they collected plenty of suggestions -- more outdoor seating, amenities for bicyclists, cultural activities, green space -- to make campus life more livable and enjoyable. An initial strategy to meet these goals emerged from a Student Senate query: where could students eat? With more students living on campus, there was increased demand for food options at and around WSU (especially late-night spots). Upon researching area restaurants, it was clear that while many on-campus options closed relatively early, there was an abundance of choices within one-and-a-half miles of campus. With these destinations in mind, the committee turned to Walk(Your City) as "a way to get people moving that's fun, colorful, and engaging." Using WYC's one-pager intro, and input from the Dean of Students office, it was decided to concentrate most signs on campus, pointing off campus to nearby amenities. Signs were posted at intersections and decision points along thoroughfares, as well as just outside residence halls and on-campus apartments. The committee also consulted with the university's marketing department and local planning partners to develop the signs' language and content, and sought approval from the City of Detroit, WSU's Facilities and Grounds Departments, the local community development organization, Midtown Detroit Inc, and area police.

OUTCOME -- The response to the signs has been largely positive, with folks commenting on social media. There have been some internal concerns about the sign design: for example, why the signs are purple and not WSU green, and why they don't have a WSU logo. However, the placemaking committee had intentionally chose to avoid conspicuous WSU branding so that the signs stood out visually and were not perceived as being geared solely to the WSU community. The committee also wanted the project to feel less institutional. WSU's placemaking efforts continue: in addition to the WYC signage, they've introduced a public bike repair stand and art installations from the Detroit Institute of Art's Inside|Out program--and have plans for a second phase of WYC signs.

Walk [North Hills, NC]

CONTEXT -- North Hills is a community in evolution: originally a traditional mall, the development became an outdoor shopping center, and is now morphing into a mixed-use community featuring retail, restaurants, offices, and residential units. That community boasts a central, walkable core, which is unfortunately disconnected from other parts of the development by large setbacks, creating a "barrier" for pedestrians and boosting car traffic. As the area transitions from a suburban mall to the "Midtown" urban center, there was an evident need to shift perceptions about the area. That means changing design choices and the allocation of space to better support a healthy neighborhood center based around walkability – which is where Walk [Your City] entered their story.

PROCESS -- The completed campaign of 93 signs was deployed over a four-block project area in the course of four hours on a Sunday evening. The campaign was planned around all the major, recognizable landmarks, anchor tenants in North Hills, and newly defined "districts". The signs were installed to capture visitors as they head to different parking areas with the goal of adding more information about other places within North Hills that they might typically drive, resulting in fewer internal driving trips in North Hills, and more visitors on the sidewalk, walking by shops and each other.

OUTCOME -- Midtown residents and visitors report an increased awareness of the many amenities within walking distance. The signs have been scanned for directions hundreds of times over the past seven months, and feedback from residents in the North Hills area continues that they had no idea the different destinations on either side of the development were as close as they actually are. One retired couple shared that they had never realized they could walk from the grocery store to the movie theater – just across the street from each other! Another executive at Blue Cross Blue Shield walked from Target to Harris Teeter for the first time, once she learned (via WYC signage) that it was only a ten-minute stroll

APPENDIX B

Self-rating Form

Drivers 65 Plus: Self-Rating Form

INSTRUCTIONS: For each of the following 15 questions, check the symbol (✓) of the one answer that best describes you.

		Always or Almost Always	Some-times	Never or Almost Never
1.	I signal and check to the rear when I change lanes	○	□	□
2.	I wear a seat belt	○	□	□
3.	I try to stay informed of changes in driving and highway laws and techniques	○	△	□
4.	Intersections bother me because there is so much to watch from all directions	□	△	○
5.	I find it difficult to decide when to merge with traffic on a busy interstate highway	□	△	○
6.	I think I am slower than I used to be in reacting to dangerous driving situations	□	□	○
7.	When I am really upset, it affects my driving	□	□	○
8.	My thoughts wander when I drive	□	△	○
9.	Traffic situations make me angry	□	△	○
10.	I get regular eye exams to keep my vision at its sharpest	○	□	□
11.	I check with my doctor or pharmacist about how the medications I take affect my driving ability. (If you do not take any medication, skip this question)	○	□	□
12.	I try to stay informed of current information about health and wellness habits	○	△	□
13.	My children, other family members or friends have expressed concern about my driving ability	□	△	○
	Note new headings:	**None**	**One or Two**	**Three or More**
14.	How many traffic tickets, warnings, or "discussions" with law enforcement officers have you had in the past two years?	○	△	□
15.	How many collisions (major or minor) have you had during the past two years?	○	□	□

Self Scoring: Count the number of checkmarks in the squares and record the total in the square below. Follow the same procedure for the triangles and circles.

□ △ ○ **These are your Check Mark Totals. For score and interpretation, see next page.**

Scoring: **There are 5 steps.**

- Step 1: Write the Check Mark Total recorded in the square on the previous page in the square to the right. □ X 5 = _____
- Step 2: Write the Check Mark Total recorded in the triangle on the previous page in the triangle to the right. △ X 3 = _____
- Step 3: Multiply the number in the square by 5.
- Step 4: Multiply the number in the triangle by 3.
- Step 5: Add the results of Steps 3 and 4. YOUR SCORE IS _____

Interpretation of Score:

The lower the score, the safer you are as a driver.
The higher the score, the more of a danger you are to yourself and others.
No matter what your score, look at the *Suggestions for Improvement* section for each area in which you checked a square or triangle. These are the areas in which you can improve the most.

Score	Meaning
0 to 15	GO! You are aware of what is important to safe driving and are practicing what you know. See the *Suggestions for Improvement,* in the following section of this booklet, to learn how to become an even safer driver.
16 to 34	CAUTION! You are engaging in some practices that need improvement to ensure safety. Look to the *Suggestions for Improvement* section to see how you might enhance your driving.
35 and over	STOP! You are engaging in too many unsafe driving practices, and might pose a hazard to yourself and others. Examine the areas where you checked squares or triangles. Read the *Suggestions for Improvement* section for ways to correct these problem areas.

These scores are based on what drivers 65 and over have told us about driving practices and habits. Your score is based on your answers to a limited number of important questions. For a complete evaluation of your driving ability, many more questions would be required, along with medical, physical, and licensing examinations. Nevertheless, your answers and score give some indication of how well you are doing and how you can become a safer driver.

In general, a checked square for an item reflects an unsafe practice or situation that should be changed immediately. A checked triangle means a practice or situation that is unsafe, or on its way to becoming unsafe, if nothing is done to improve it. Checking circles is a sign that you are doing what you should to be (and remain) a safe driver.

Most of the square and triangle answers represent practices or situations that can be improved by most drivers. The following section contains suggestions for improvement, divided into each of the 15 areas. You should focus on those areas for which you checked squares or triangles.