PENNSYLVANIA STATE
TRANSPORTATION ADVISORY COMMITTEE

DRIVER EDUCATION

FINAL REPORT

AUGUST 2013

IN MEMORIAM

This study is dedicated to the memory of Harry H. Sherman. Harry served on behalf of the Pennsylvania Department of Education's Secretary as a valued member of the Transportation Advisory Committee. He was responsible for the management of driver education services statewide in the Department of Education. In this role, he was a significant contributor to this study on Driver Education in Pennsylvania.

The Pennsylvania State Transportation Advisory Committee

The Pennsylvania State Transportation Advisory Committee (TAC) was established in 1970 by Act 120 of the State Legislature, which also created the Pennsylvania Department of Transportation (PennDOT). The Advisory Committee has two primary duties. First, the Committee "consults with and advises the State Transportation Commission and the Secretary of Transportation on behalf of all transportation modes in the Commonwealth." In fulfilling this task, the Committee assists the Commission and the Secretary "in the determination of goals and the allocation of available resources among and between the alternate modes in the planning, development, and maintenance of programs, and technologies for transportation systems." The second duty of the Advisory Committee is "to advise the several modes (about) the planning, programs, and goals of the Department and the State Transportation Commission." The Committee undertakes in-depth studies on important issues and serves as a valuable liaison between PennDOT and the general public.

The Advisory Committee consists of the following members: the Secretary of Transportation; the heads (or their designees) of the Department of Agriculture, Department of Education, Department of Community and Economic Development, Public Utility Commission, Department of Environmental Protection, and the Governor's Policy Office; two members of the State House of Representatives; two members of the State Senate; and 19 public members—seven appointed by the Governor, six by the President Pro Tempore of the Senate, and six by the Speaker of the House of Representatives.

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1. Introduction

Driver education traditionally refers to programs for beginning drivers consisting of both "theory" instruction in the classroom and practical training in a vehicle. In reality, driver education is a process of training and licensing new drivers and educating existing licensed drivers of changes in traffic laws.

Much of the research on driver education and changes to the way drivers are licensed has focused on teenage drivers. This is not surprising given that motor vehicle-related injuries are the biggest health threat to teenagers in the United States, accounting for two out of every five deaths among teens ages 16 to 19 years. The crash risk is highest for drivers 16 years of age due to their less-developed sense of risk and limited driving experience.

However, the need for continuing education of licensed drivers also deserves consideration, as this group represents the majority of drivers. All drivers should stay abreast of changes in driving laws and technology. While refresher courses are available to senior drivers, few take advantage of them.

This study examines the current state of driver education in Pennsylvania and the nation and identifies the issues related to driver training and education. The value of current programs was reviewed based on current research to identify programs and delivery systems that can be effective in reducing crashes and improving driver safety. This study also examines the issue of driver education for experienced drivers and the most effective ways of keeping drivers up-to-date on driving laws and good driving habits.

2. The History of Driver Education

2.1 A History of Driver Education in the United States

Driver education emerged as an organized course of study in the U.S. between 1910 and 1920. In 1933, the first formal high school driver education course was offered in State College, Pennsylvania. In the years following, driver education increasingly became a standard course offering at high schools throughout the nation.

Standardization of these early driver education programs became a national goal. In 1949, 1953, 1958, and 1963, national driver education conferences were sponsored by the National Education Association's National Commission on Safety Education. At the 1949 conference, the standard formula for driver education was created: 30 hours of classroom instruction and 6 hours of behind-the-wheel training.

The number of driver education programs ballooned in the late 1940s, 1950s, and 1960s, with the number of high school programs and enrolled students increasing exponentially. This increase was further fueled by the 1966 Highway Safety Act, enacted by the U.S. Congress, which identified driver education as a major countermeasure to traffic crashes and made matching funds available to states to support the growth and improvement of driver education.
The increasing availability of high school driver education peaked in the 1970s when 95 percent of eligible U.S. students received driver education. Some state governments employed as many as five people to supervise and monitor the quality of driver education programs.

Research on the safety impacts of driver education began in the 1940s and largely showed driver education producing safer drivers. Later research conducted in the 1960s and 1970s began to question the validity of the earlier studies and also began to find that the safety benefits of driver education may be rather modest. These studies culminated in a large, long-term study conducted in the late 1970s and early 1980s, known as the DeKalb study. This study was aimed at providing conclusive evidence of the safety benefits of driver education, if they existed. The results, however, were inconclusive.

In part due to the DeKalb study, driver education lost its status as a priority safety issue in the 1980s. Enrollment in driver education classes declined, as did the number of course offerings.

Subsequent research found that obtaining a driver's license was too easy, decreasing the safety of new drivers. In the 1990s, Graduated Driver Licensing (GDL) was introduced to address this finding. GDL creates a path to a driver's license with three distinct steps, each with its own requirements and restrictions. GDL programs began to be implemented and quickly increased in status as they began to show a positive effect on driver safety. GDL has proven so effective that by the mid-2000s almost all states had implemented some form of GDL.

In more recent years, research has focused on finding specific driver skills and teaching methods that result in increased driver safety, as well as effective methods for integrating driver education with GDL programs.

2.2 A History of Driver Education in Pennsylvania

Driver education in Pennsylvania followed a similar trajectory to that experienced nationwide. There was a period of great growth in driver education programs, peaking in the late 1970s and early 1980s, with a subsequent decline. In recent years, driver education has been offered in fewer school districts.

GDL began to be discussed in Pennsylvania in the late 1990s. In 1998, there were serious worsening trends in 16- and 17-year-old driver fatalities. Motor vehicle crashes were the leading cause of death for young people 15 to 20 years of age, causing approximately one-third of all fatalities in this age group. In terms of miles driven, teenagers were involved in three times as many fatal crashes as were all drivers. The causes were identified as:

- Inexperience
- Risk-taking behavior and immaturity
- Greater risk exposure, such as carrying teen passengers and driving later at night

In response, PennDOT formed a Young Driver Steering Committee in June 1998. It consisted of representatives from

- PennDOT,
- the Pennsylvania State Police,
- the Pennsylvania Department of Education,
- Pennsylvania legislators (House and Senate),
- the medical community,
- the insurance industry, and
- other interested parties.

One area the committee examined was driver education. Concerns at that time included:

- Curriculum – Many felt it needed to be improved. A new enhanced curriculum was being tested but results were not showing it to be effective in reducing crashes.
- Instructors – High school and private driving school instructors were not required to undergo any recertification process.
- Driver Education Not Mandatory – Some advocated making driver education mandatory. However, statistics failed to show that young people who took driver education courses had fewer crashes than those who did not take driver education. Mandating driver education would have added costs without a corresponding statistical benefit.

The deliberations of the Young Driver Steering Committee became more focused on the need for GDL legislation. This eventually led to passage of the Young Drivers Law, Act 23 of 1999, which was enacted and signed into law in June 1999. This law set new stronger graduated driver

license standards by extending the learner's permit period, requiring a minimum number of hours of training with a learner's permit, and restricting night driving.

Act 23 did not mandate driver education or change any other major aspects. However, it did call for a Driver Education Task Force to conduct a comprehensive review of driver education in Pennsylvania.

In 2011, Pennsylvania's GDL regulations were tightened by Act 81 of 2011, which required additional training time with a learner's permit, limited the number of passengers under age 18 that a driver with a junior license may carry, and required all passengers under age 18 to wear a seat belt or be in a child restraint system.

The implementation of GDL in Pennsylvania has been remarkably positive. Teen fatalities have declined sharply since its introduction, with fatalities of 16- and 17-year-olds reduced by approximately 40 percent since inception.

2.2.1 Driver's Education Task Force

A Driver's Education Task Force was formed in accordance with Act 23 of 1999. The task force included 14 members, representing

- PennDOT (chaired by the Deputy Secretary for Safety Administration),
- the Pennsylvania Department of Education,
- legislative staff representing the Pennsylvania House and Senate Transportation and Education committees,
- the insurance industry,
- the Pennsylvania State Police,
- a superintendent of schools, and
- concerned parents.

The task force hired researchers from Penn State to complete a literature review, assess other states' driver education programs and practices, conduct focus groups with teen drivers, complete telephone surveys with teen drivers, evaluate crash records, and interview driver education instructors.

The task force also convened a Driver Education Symposium to hear from the foremost driver education experts across Pennsylvania and North America.

The Driver's Education Task Force submitted its report in 2000. Key research findings included:

- Previous research had not established a link between driver education and a reduction in young driver crashes and traffic convictions.
- Penn State's evaluation of Pennsylvania's current driver education program showed no statistical relationship between completion of driver education and the rate of young driver crashes or traffic convictions.

- PennDOT's evaluation of its piloted Enhanced Driver Education Curriculum did not find a link between completion of the program and the rate of young driver crashes and traffic convictions.

The recommendations of the task force are summarized below:

- Develop uniform and specific certification and recertification training programs for both public and private driver education instructors.
- Provide young driver crash data to driver education instructors and parents, which illustrates and defines the types of crashes occurring.
- Develop and pilot an improved curriculum. It should use the enhanced program as a foundation, addressing relationships between crash causation and traffic convictions, and development of driving skills. The improved curriculum should integrate knowledge and skills instruction. It should be used in both public and private programs and should integrate parental involvement.
- Strengthen the coordination between the Department of Education and PennDOT. The program should be administered by the Department of Education with PennDOT providing assistance in areas of its expertise, including development and evaluation of driver skills.
- Because studies indicate no statistical relationship between driver education and a reduction in young driver crashes and traffic convictions, the program should remain optional while the driver education community continues its research.
- There is no recommendation to generate additional funds to support driver education until a program is established that does reduce young driver fatalities and convictions.

3. Current Profile of Pennsylvania Driver Education

3.1 Introduction

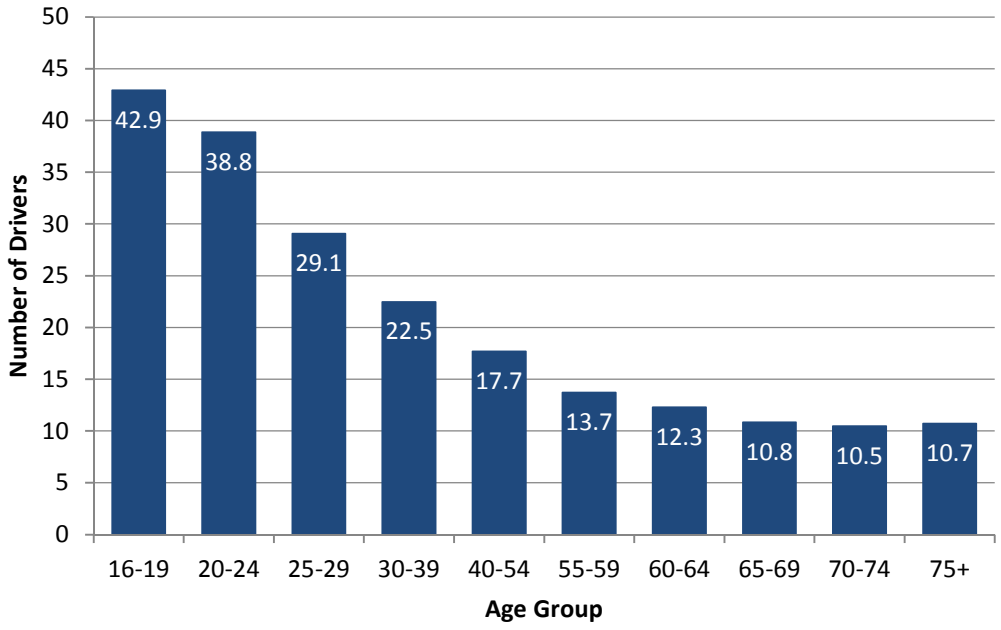
Driver education in Pennsylvania, as with all states nationwide, has had one primary objective. It has endeavored to teach new and existing drivers how to properly operate a vehicle on the roadways. This includes all the following:

- The mechanics of operating a vehicle (accelerator, brakes, turn signals, etc.).
- The meanings of the various signs, signals, and pavement markings deployed on the roadways.
- The laws and rules associated with driving on public roadways.
- Specific skills associated with various scenarios (parallel parking, merging, passing, etc.).

The overarching goal is to develop safer drivers and minimize the number of crashes, injuries, and fatalities.

Young drivers are significantly more likely to be involved in crashes and fatalities than any other age group. As Figure 1 shows, after the age of 24, drivers are significantly less likely to be involved in a crash. The likelihood of being involved in a crash continues to decline until age 74, when it begins to climb again.

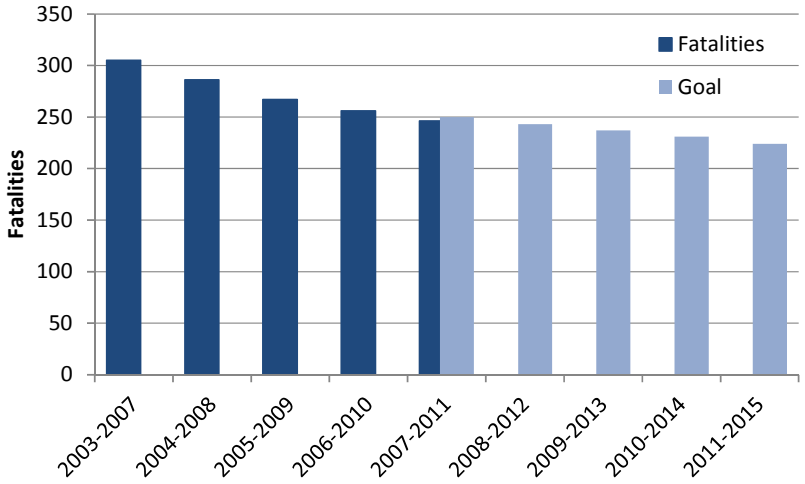
Figure 1: Pennsylvania Drivers Involved in Crashes per 1,000 Licensed Drivers, 2011



Source: *2011 Pennsylvania Crash Facts & Statistics*

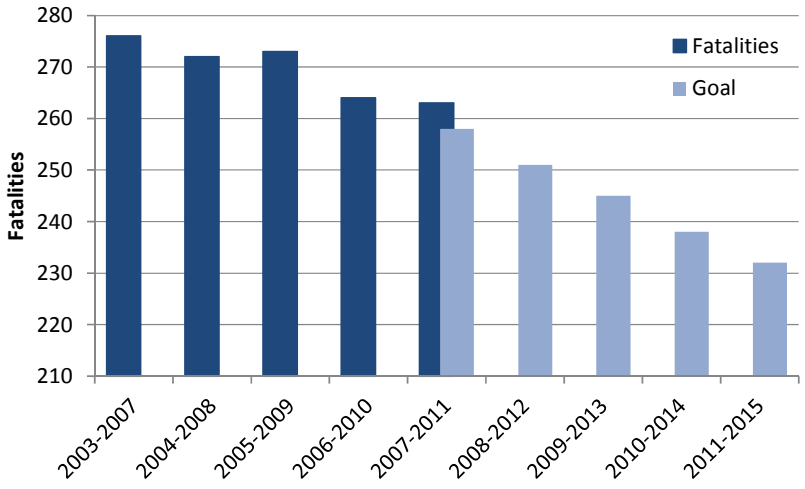
Based on statistics such as these, Pennsylvania, as well as other states and the U.S. Department of Transportation, have made reducing crashes and fatalities among both the youngest and oldest drivers a priority. PennDOT has set ambitious goals for reducing fatalities and major injuries for both teens and mature drivers, shown on Figure 2 and Figure 3. These goals are part of PennDOT's 2012 Strategic Highway Safety Plan.

Figure 2: Five-Year Annual Average of Fatalities Involving Teen Drivers (16-20), Historic and Goals



Source: *2012 PennDOT Strategic Highway Safety Plan*

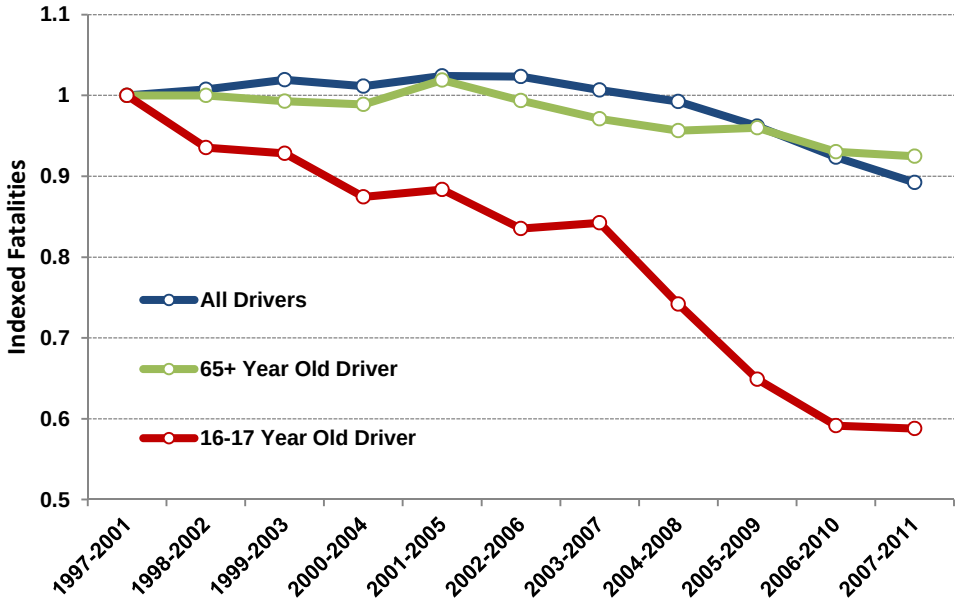
Figure 3: Five-Year Annual Average of Fatalities Involving Mature Drivers (65+), Historic and Goals



Source: *2012 PennDOT Strategic Highway Safety Plan*

As shown in the previous figures, the fatality rates have been trending in a positive direction for several years. Figure 4 shows several additional years of fatality data, but indexes it to the first five-year period. Displayed this way, the fatality rate for all drivers can be compared with that of young drivers and mature drivers. Over the period shown in Figure 4, the number of fatalities for all drivers declined by 11 percent. In the same time period, the number of fatalities involving 16- and 17-year-old drivers declined by 41 percent, while fatalities involving a senior driver declined by 8 percent. As the data shows, the total number of fatalities has shown a very positive trend in recent years. The same holds true for major injuries and all crashes. Roadway safety has been aggressively addressed on a number of fronts, including implementation of GDL, and the effort appears to be paying off.

Figure 4: Five-Year Annual Average Number of Fatalities, Indexed to 1997-2001



Source: PennDOT Bureau of Maintenance and Operations

3.2 Current Driver Licensing Requirements

Driver education in Pennsylvania has been evolving in recent years to adapt to the most recent national trends and to incorporate the processes that appear to have the greatest impact on reducing the number of crashes by new drivers. Most of this history was discussed in a previous section. This section outlines the current requirements and regulations for obtaining a driver's license in Pennsylvania. This includes a discussion of where driver education fits into this process. One important fact is that there is no requirement in Pennsylvania to take driver education.

Table 1 summarizes the current licensing requirements of the Pennsylvania Graduated Driver Licensing (GDL) program. This step-by-step process is designed to introduce teens to the process of driving a car incrementally as they gain more experience and proficiency in the many skills that are required for safe vehicle operation. Perhaps most importantly, the GDL system shields teen drivers from the most hazard-prone aspects of driving by implementing restrictions on the time of day teens may drive and the number of passengers they may carry. GDL also delays how soon a teen can actually get a full driver's license. By controlling these high-risk situations, GDL has been instrumental in reducing crashes, injuries, and fatalities among teens.

Table 1: Pennsylvania's Licensing Requirements Based on 1999 and 2011 Laws

	Learner's Permit	Junior License	Unrestricted (Full) License
Curfew Restrictions	No driving between 11 p.m. and 5 a.m.		No Restrictions
Passenger Restrictions	Must be accompanied by a supervising adult 21 years or older. Number of passengers must not exceed number of safety belts in vehicle.	For first 6 months, no more than one passenger under 18, unless immediate family member or parent/guardian in vehicle. After 6 months, 3 passengers allowed.	Number of passengers must not exceed number of safety belts in vehicle for all drivers under age 18.
Time Restrictions	Mandatory 6 months for skill building before test.		Possible at 17½ years with: • Crash- and conviction-free record for 12 months. • Completion of an approved driver education course. • Consent of parent or guardian. Otherwise, full license issued at age 18.
Other Requirements	Permit valid for one year. Certification of 65 hours behind-the-wheel skill building; 10 hours must be at night, 5 hours must be in bad weather	Mandatory 90-day suspension for 6-point or more accumulation or a single high-speed conviction (26 mph or more over posted speed limit).	

Source: PennDOT Bureau of Driver Licensing

3.2.1 Learner's Permit

The learner's permit is the first step in the process of obtaining a driver's license. The minimum age for a learner's permit is 16. In addition, an applicant for a learner's permit must have a physical exam conducted by a doctor, physician's assistant, or nurse practitioner who certifies that the individual is physically fit to drive. At the Driver License Center, the applicant is administered an eye screening test and a knowledge test based on information contained in the *Pennsylvania Driver's Manual*. The applicant must answer at least 15 of 18 questions correctly on the knowledge test.

Upon passing the knowledge test, the applicant is issued a learner's permit. The learner's permit is valid for one year, and may be renewed for up to three years, if more practice time is needed or if the applicant fails the road test. If the applicant is under 18 years of age, he or she must have a learner's permit for six months before taking the road test to qualify for a junior license. If the applicant is 18 or older, he or she may take the road test whenever adequately prepared.

While practicing driving with a learner's permit, a teen under age 18 must log 65 hours of driving time with a licensed driver 21 years or older. This must include 10 hours of nighttime driving and 5 hours of driving in poor weather conditions. The teen must have a parent or guardian certify that they met the 65-hour practice time requirement.

With a learner's permit, several restrictions are imposed on those under 18. First, the driver must be accompanied at all times by a licensed driver at least 21 years of age, or a parent, guardian, or spouse who is at least 18 years old and a licensed driver. Driving is not permitted between 11:00 p.m. and 5:00 a.m. Exceptions are made for drivers who are traveling to or from work or volunteer service. Proper documentation of the work or volunteer service is required to be carried in the vehicle. The total number of passengers is limited in the vehicle, and must not exceed the number of available seat belts in the vehicle. Additional restrictions are also levied in relation to violations. If a driver accumulates more than six points or is convicted of a single high-speed violation (26 mph or more over the posted speed limit) the permit is suspended for 90 days.

3.2.2 Junior License

When a teen has had a learner's permit for at least six months and has met the 65 hours behind-the-wheel practice requirement, he or she may schedule a road test to attempt to qualify for a junior license. The road test may be given by a Driver License Examiner at a PennDOT Driver License Center or by a driving instructor approved by PennDOT to administer the End-of-Course Skills Test.

If the applicant passes the road test, a junior license is issued. The junior license imposes several limitations on drivers, most of which are similar to the restrictions on learner's permits. Driving is still restricted between the hours of 11:00 p.m. and 5:00 a.m., with exceptions made for work or volunteer service. Passenger limitations are increased for drivers with a junior license. During the first six months of licensure, a driver may not carry more than one passenger under the age of 18. This restriction does not apply to immediate family members. It also does not apply if a

parent or guardian is riding in the vehicle with the driver. At the end of six months, the driver may carry no more than three passengers under the age of 18, with the same exceptions for immediate family members and parents or guardians. The number of passengers may never exceed the number of seat belts. The increased passenger limit after six months is revoked if the driver is partially or fully responsible for any crash or if convicted of any driving violation.

3.2.3 Full License

A full, unrestricted license is available to all new drivers at age 18. Certain young drivers, however, can qualify for a full license earlier than age 18 if three requirements are met:

- The driver must be crash- and conviction-free for the previous 12 months.
- The driver must have taken an approved driver education course.
- The driver must have an affidavit of consent from a parent, guardian, or spouse who is over age 18.

Based on the requirements, the earliest a young driver can receive a full license is age 17½.

Drivers who earn a full license prior to age 18 are still subject to two restrictions that those over 18 are not. First, they may not carry more passengers than there are seat belts in the vehicle. Second, they are subject to having their license suspended for 90 days if more than six points are accumulated or if they are involved in a single high-speed violation.

3.2.4 Retesting

PennDOT conducts a random retesting program for existing licensed drivers. Each month, 1,900 drivers over the age of 45 are chosen for retesting seven months prior to the date of their driver's license renewal. Each selected driver is required to undergo vision and physical examinations. The medical examination may be conducted by the driver's health care provider and the vision screening may be completed by the driver's vision care provider, or, at no charge, by staff at any PennDOT Driver License Center. If warranted by the results of the medical examination, those selected may also be required to successfully complete a driver's examination and a knowledge test.

3.2.5 Medical Reporting

It is the law that health care personnel who are authorized to diagnose and treat disorders and disabilities report to PennDOT any patient 15 years of age or older who has been diagnosed as having a condition that could impair his or her ability to safely operate a motor vehicle. Through this mechanism, health care personnel help PennDOT in determining whether individuals applying for a driver's license or already possessing a driver's license are medically fit to safely drive.

Family members can also submit a statement in writing noting that a driver is not fit to drive. That will generate a call for a medical test. If the individual is found not to be competent, driving privileges will be recalled.

3.3 Driver Education Requirements

3.3.1 Driver Education Providers

Driver education in Pennsylvania is delivered by a variety of educational entities and businesses. These include intermediate units, school districts, community colleges, private high schools, and private driving schools. The Department of Education website maintains a current listing of all approved driver education programs.

Many students receive driver education training through their high school, although the number of school districts offering driver education has been decreasing for years. In the 2012-13 school year, 261 of the 500 school districts in Pennsylvania offered driver education to their students. Table 2 compares the number of driver education programs in Pennsylvania in 2004-05 to the number available in 2012-13.

Table 2: Driver Education Programs in Pennsylvania

	Number of Programs		
Location	**2004-05**	**2012-13**	**Change**
School Districts	372	261	-111
Intermediate Units	8	10	2
Community Colleges	5	1	-4
Private High Schools	28	16	-12
Subtotal	**413**	**288**	**-125**
Private Driving Schools	174	192	18
Total	**587**	**480**	**-107**

Source: Pennsylvania Department of Education

As shown, the number of school programs continues to decline. In addition, fewer school teachers are qualified to teach driver education today than in the past. To sustain driver education programs for their students, some school districts have used private driving companies to deliver some or all of the driver education. It is common for the classroom portion of driver education to be provided by a school district teacher, while the behind-the-wheel training is provided by a private driving school instructor.

3.3.2 Certification of Driver Education Teachers

The regulation and certification of driver education teachers is addressed in the Pennsylvania Public School Code of 1949 and is administered by the Pennsylvania Department of Education. The department requires that a teacher who wants to add Driver Education to an existing teaching license must pass the PRAXIS exam for Safety/Driver Education and apply to the

department for a certificate. Prior to 2011, driver education teachers were also required to complete four university-level courses (12 credit hours) in Driver and Safety Education. A private driving school under contract to provide classroom driver education to students at a public school district must provide a teacher certified in Safety/Driver Education.

Behind-the-wheel training may be provided by either a teacher with Safety/Driver Education certification or by a teacher aide who meets the following requirements:

- possesses a high school diploma,
- completes a three-credit course in driver education,
- has a driving record free of violations and collisions in the previous three years,
- passes a driving theory test from the Department of Education, and
- passes the driving examination at a PennDOT Driver Examination Center.

The teacher aide must then go on to complete additional university courses for a total of 12 credit hours within three years.

The certification requirements for teachers at a private driving school are governed by a different set of regulations and differ from those described above for public school teachers. Teachers at a private driving school must meet all of the following:

- Be a citizen of the United States of at least 21 years of age and of good moral character (include a statement of certification and character references).
- Present a certificate from a medical doctor stating that the teacher does not have any mental or physical ailments that would prevent him or her from being a driving instructor.
- Possess a valid Pennsylvania Driver's License.
- Submit documentation of having driven at least 15,000 miles in all weather conditions in both urban and rural areas.
- Maintain a driving record of no more than one reportable accident resulting in suspension or revocation of a Driver's License within a three-year period.
- Pass a written examination administered by the Department of Education.
- Pass a driving test administered by PennDOT.

In addition, an owner or director of a private driving school must have had at least two years of experience as a driving instructor at a public or private driving school or class.

3.3.3 End-of-Course Skills Testing

Driver education instructors may also become certified to administer the End-of-Course Skills Test that students take to graduate from a learner's permit to a junior driver's license. The skills testing program is overseen by PennDOT and is part of its decentralization of driver and vehicle services. Allowing private driving instructors to administer this test reduces the burden on Pennsylvania's 71 driver license centers and provides a more convenient way to take the driver's test.

In order for an instructor to become certified, he or she must be a part of a school district-sponsored driver education program, whether operated by the district itself or by a private contractor. The minimum age is 21, and at least one year of driving education experience is required. The instructor must have completed 12 credit hours in Driver and Traffic Safety Education and possess either a Pennsylvania teaching certificate or a bachelor's degree. In order to begin the certification process, a written recommendation by the school principal or superintendent is required. The instructor must participate in a certification course, which is administered as a webinar. He or she must also make an appointment with a driver license supervisor at one of the driver license centers and participate in ride-alongs with a driver license supervisor to learn testing and scoring skills. If the school does not have a pre-existing approved test route, the instructor must create one for approval by the driver license supervisor. The instructor will be certified to administer the End-of-Course Skills Test when the driver license supervisor is satisfied that the instructor has acquired all necessary skills for testing and scoring.

Currently, 281 instructors are certified to administer the End-of-Course Skills Test in Pennsylvania. These include employees of public school districts, private schools, and their contractors. In 2012, 17,567 exams were administered in this manner with a 95.7 percent pass rate.

3.3.4 Curriculum/Program of Instruction

The driver education curriculum of either a private driving school or a public school is required to be reviewed and approved by the Department of Education. The department produces Driver Education Content and Performance Expectations. This document describes what students should know and be able to do at the end of a 30-hour classroom and 6-hour behind-the-wheel instruction period. The listed expectations are not enforced as regulations, however, driver education programs are judged against the expectations when presented for review and approval. The expectations cover the following major areas:

- Pennsylvania Laws and Regulations
- Knowledge of Vehicle Operations
- Perceptual Skill Development
- Decision-Making/Risk Reduction
- Driving Conditions
- Influences Upon Driver Performance

3.4 Costs/Funding

The Pennsylvania Department of Education helps fund driver education provided in schools. This funding operates as a reimbursement to the school and was set at $35 per student by the Pennsylvania State Legislature in 1952. The amount has not been changed since that time. Schools may charge students taking driver education up to a maximum of $50 and still receive the state reimbursement of $35, provided the $50 is not used to pay any salaries or benefits. If a school charges more than $50, the school may not seek reimbursement.

Funding for the $35 reimbursement is provided as a line item in the state Motor License Fund, which generates revenue from the state gas tax. The line item is $1,103,000 in SFY 2012-13. This amount is used to cover the reimbursement to schools as well as to pay salaries of the Department of Education employees who carry out the program.

There has been a recent trend by schools that are facing financial hardships to continue to offer driver education, but forgo the $35 state reimbursement (thus eliminating the cap on what they can charge students) and charge $200 to $400 for the course. The trend is apparent from the decline in the number of schools seeking reimbursement, as shown by the table below:

Table 3: Number of Schools Reimbursed by the Department of Education

2004-05	2012-13	Change	Percent
275	139	-136	-49%

Source: Pennsylvania Department of Education

3.5 Mature Driving Courses

People generally tend to drive more safely as they age. This is due to several factors, including the fact that as their perception of risk increases, their sense of invincibility decreases, and they are not as easily negatively influenced by peers. Figure 1 bears this out. The number of drivers involved in a fatal crash continues to decline throughout all the age groups until the 70+ cohort. At that point, the number of fatalities begins to increase.

Although older drivers are aided by their increased risk perception and generally more conservative nature, other factors begin to exert a negative influence on their driving. First, their reaction time slows, delaying their response to a hazard ahead. Second, their knowledge of driving laws begins to decline, especially for laws enacted since they took a formal driver course or studied the driving manual.

3.5.1 Insurance Discount

Taking a mature driver course has been incentivized by the Pennsylvania legislature by mandating that insurance companies provide discounts to drivers age 55 and older who have completed a safe driving course approved by PennDOT. The discount is applicable for all vehicles on a policy where all named insureds are over age 55 and have taken the approved safety course. The discount is required to be at least five percent.

The discount is valid for a period of three years, after which the drivers must take another approved safety course to continue to qualify for the discount. The insurance agency has the option of requiring any of the following conditions for customers to continue to qualify for the discount:

- Not be involved in an accident for which the insured is chargeable.
- Not be convicted of a driving violation.
- Not be convicted of driving under the influence of alcohol or a controlled substance.

3.5.2 Approval of Courses

Courses that are offered for mature drivers must be approved by PennDOT as to their effectiveness in reducing accidents and convictions. In the approval of such courses, PennDOT applies the following standards, which the course must address:

- Minimum of seven hours of classroom instruction.
- Physical problems of older age and their effect on driving performance.
- The effect of fatigue, drugs (over-the-counter and prescription), and alcohol on driving performance.
- Updates on laws, signs, signals, and pavement markings.
- Selecting optimum travel time of day and route.
- Safety belts.
- Safe and defensive driving in modern conditions.
- Techniques for improved decision-making.

Four-hour refresher courses may be offered to those who have previously taken the full-length course and can provide a certificate of completion for that course.

Agencies that offer a course for mature drivers must also provide an instructor preparation course. The instructor must have experience in communication, knowledge of the curriculum topics, the ability to organize course materials, and the ability to guide students in the coursework and discussion. The instructors must maintain a driving record that is "compatible with the aims of highway safety and with the responsibilities of an instructor."

3.5.3 Current Course Offerings

In recognition of the increased risks older drivers face, PennDOT encourages them to take one of several mature driving courses offered. The following courses are currently available in Pennsylvania.

American Automobile Association (AAA)

The American Automobile Association provides several different resources to assist older drivers in maintaining their driving skills and staying safe on the road. First, they maintain a website dedicated to providing a variety of information for older drivers. The site offers tools that help a person evaluate his or her current driving ability, understand natural changes in body and mind over time that affect driving, and sharpen driving skills to compensate for the effects of aging. This website is available nationwide to anyone, regardless of AAA membership.

AAA offers online and in-person driver education courses to both members and non-members. These courses are offered in an 8-hour version for first-time students and a 4-hour refresher version for those who have taken the course before. In addition to the course, AAA offers a program called RoadWise Review for Seniors. This CD-ROM tool allows seniors to measure their functional ability in eight areas that have been shown to be the strongest predictors of crash risk among older drivers:

- Leg Strength and General Mobility

- Head/Neck Flexibility
- High- and Low-Contrast Visual Acuity
- Working Memory
- Visualization of Missing Information
- Visual Search
- Useful Field of View

Finally, AAA offers a brain fitness software program that aims to sharpen the mind of the driver in several key ways that relate to safe driving. The software specifically trains users to better monitor multiple moving objects, expand their field of view, and increase visual processing speed.

Seniors for Safe Driving (SSD)
Seniors for Safe Driving is a for-profit company operating in western Pennsylvania. They hold driver education classes for senior citizens over the age of 55, working with individuals, companies, and municipalities. They have been in business since 1994, and are currently operating with approximately 20 paid instructors providing classes in more than 200 different locations. They train between 10,000 and 12,000 seniors per year. They offer a full 8-hour course and a 4-hour refresher course. An on-line course option is also available.

SSD is certified to conduct training throughout Pennsylvania, but serves primarily the western portion of the state. They have begun expanding eastward, and are currently offering classes as far east as Centre County.

American Association of Retired Persons (AARP)
The American Association of Retired Persons (AARP) offers a driver education course aimed at older drivers, although there is no age limit or membership requirement for taking the course. In 2011, 27,000 Pennsylvanians took the course.

AARP's program includes both an 8-hour course for first–time participants and a 4-hour refresher course. Both courses use the same workbook, but vary in the depth of coverage. AARP also offers an online course option.

4. Interviews and Issues

In compiling the information for this report, the study team conducted numerous interviews and reviewed considerable literature on driver education. This section documents those interviews and reports on the issues that were raised as part of this research.

4.1 Interviews

Table 4 provides highlights of interviews conducted by the study team.

Table 4: Driver Education Interviews

Interviewee	Key Points
Betty Serian Former Deputy Secretary PennDOT	• Chaired the 1999 Driver Education Task Force. • The research conducted for the task force showed no correlation between driver education and crash reduction.
Lou Pesci, Ph.D. Professor Indiana University of Pennsylvania	• Teaches the only remaining university driver education program in Pennsylvania. • Wrote his 2009 Ph.D. dissertation on driver education in Pennsylvania. • The effectiveness of driver education cannot be judged on crash statistics alone. • Concerned about the limited number of qualified driver education instructors.
Galen Hoover Hoover's Driving School and PA Association of Professional Driving Schools	• The association provides seminars and information to private driving schools. • Driver testing sites have inconsistent requirements. • Log books should be required for the 65-hour practice requirement.
Bob Edwards Bob Edwards Private Driving School	• Stronger enforcement of traffic laws could reduce accidents. • Classroom driver education should be offered in all schools.
John Decker Driver Education Teacher Harrisburg School District	• There should be a greater emphasis on defensive driving. • Some students take driver education as freshmen, which is too early.

Interviewee	Key Points
Ted Leonard Executive Director Pennsylvania AAA Federation	• AAA has a national focus on teen driving. • AAA provides mature driver courses. • AAA Foundation for Traffic Safety conducts national studies. • Driver education curriculum should include more safe driving habits.
Roland Vonderheide Pennsylvania State Coordinator AARP Driver Safety	• AARP offers a mature driver course. • An insurance discount of 10 percent would provide greater incentive to take mature driving courses.
Leo R. Parisi Owner Seniors for Safe Driving	• Organization provides mature driver courses, mostly in western Pennsylvania. • Driver education should require greater commitment from parents, including taking classes with teen.
Carol Alonge Regional Coordinator North Central Highway Safety Network	• The organization assists with programs and training in highway safety. • Schools should provide seat belt and cell phone enforcement on campus. • Parents should be part of the driver education process.
Wayne Harper Director Center For Traffic Safety	• The organization provides technical support and safety education regarding traffic safety. • The decline in driver education in high school is troubling. • Driver education is important for all students and should be financially supported by the state.
Rich Kirkpatrick **Nereida Pereira** PennDOT Safety Administration	• Oversees the PennDOT licensing process, end-of-course skills testing, and mature driver courses. • Safety Administration manages driver licensing within existing resources, however the Transportation Funding Advisory Commission (2011) recommended instating optional third party non-CDL license testing. This change would require legislation.
Gary Modi **Tom Glass** PennDOT Highway Administration	• Responsible for Pennsylvania safety statistics and safety grant programs. • Teens are able to learn driver skills and rules of the road, but they have issues with danger/risk perception. • Social norming is important to understand what motivates teens to be safe drivers.

Interviewee	Key Points
Harry Sherman School Safety Education Advisor PA Department of Education	• Department of Education regulates the following: • Public school driver education programs • Private driving schools • Driving instructors

4.2 Issues

The interviews and research collected many opinions on potential improvements to driver education in Pennsylvania. The work also uncovered many issues that guided the study. The following sections highlight comments and issues raised in interviews and literature research in the areas of driver education and curriculum, GDL, instructor certification, teen drivers, and mature drivers.

4.2.1 Issues Related to Driver Education and Curriculum

Comments Based on Interviews and Research

- The curriculum taught in high schools should include more behind-the-wheel time.
- School curricula should focus more on driving safely.
- The trend of schools dropping driver education is a problem. All schools should provide it as a service to students.
- The state reimbursement of $35 per student is too low.
- Police should have a role in delivering the driver education curriculum.
- Department of Education Content and Performance Expectations are not requirements and do not carry enough weight.
- Thirty hours of classroom and 6 hours of behind-the-wheel training are not adequate to teach new drivers how to be safe drivers.
- The driver education curriculum does not integrate any of the most recent research on how to teach risk perception or maintain safety in today's era of cell phones and other digital distractions.
- There has been no definitive advice on how to integrate driver education and GDL for maximum effectiveness.

Issues for Research

- Is the goal of driver education to produce drivers with fewer crashes and convictions? If so, is this a reasonable goal?
- Can current driver education programs meet a goal of fewer crashes and convictions? If not, what changes in driver education programs are needed to achieve this goal?
- How can we sustain driver education and pay for it?
- How can we maintain good driver education teachers?

4.2.2 Issues Related to GDL

Comments Based on Interviews and Research

- Log books should be mandated for the 65 hours of required practice time.
- Parents should attend some driver education classes with their teenagers to foster a partnership for safe driving.
- Allowing those who take driver education to get licensed at age 17½ increases risk because it increases exposure to road hazards.
- Driver testing centers are inconsistent in testing standards.

Issues for Research

- Is additional parental involvement required? (parent/teen joint training sessions)
- Does the completion of a driver education class confer enough safety benefits to warrant allowing full licensure at age 17½?

4.2.3 Issues Related to Instructor Certification

Comments Based on Interviews and Research

- Instructor certification is not uniform between public school instructors and private instructors.
- No periodic recertification is required.

Issues for Research

- Should public school instructors and private driving instructors have the same certification requirements?
- Would periodic recertification of instructors confer additional benefits to driver education students?

4.2.4 Issues Related to Teen Drivers

Comments Based on Interviews and Research

- Teens have a problem perceiving danger and/or risk.
- Greater enforcement of seat belts and texting laws is needed for young drivers.
- Schools should police their campus for seat belt and cell phone/texting violations.

Issue for Research

- What are the most promising methods for increasing teens' perception of danger and risk?

4.2.5 Issues Related to Mature Drivers

Comments Based on Interviews and Research

- Mature drivers may not be aware of more recent laws.
- The potential to take away someone's driver's license is an emotional issue for an individual and their family.

Issues for Research

- Are there ways to encourage more drivers to take mature driving courses?
- Are there ways to keep all drivers more aware of the latest driving-related laws?
- Should the mandatory insurance discount be raised to encourage more mature drivers to take driving courses?

5. National Driver Education Research

This section discusses research at the national level that has evaluated the effectiveness of driver education in reducing crashes and increasing safety for new drivers.

5.1 Brief History of Early Driver Education Research

One of the original goals of driver education was to reduce crashes by young drivers. Studies of the impact of driver education were first undertaken in the 1940s. By 1964, at least 30 studies had been completed. These study findings indicated that students who completed driver education courses had up to 50 percent fewer crashes and violations than those who did not take such courses. This finding was viewed as proving the benefit of driver education; strong support for driver education continued through the mid-1960s.

Beginning in the mid-1960s, studies of driver education took on a more rigorous scientific approach. In 1969, McGuire and Kersh conducted a second review of previous studies and noted that the 30 early studies reviewed in 1964 all included fatal errors in the design of the experiments that invalidated their positive findings. A common error in these early studies was that they did not control for the differences between students who received driver education and those who did not. People who volunteer to take driver education will likely have personality and motivational differences from those who do not choose to take driver education. It is impossible to determine whether the safety differences between the two groups are due to those personality differences or if they are the result of driver education. The McGuire and Kersh study was the first of several studies that went on to find little to no positive effect on crashes by driver education courses.

In an effort to adequately rate the effectiveness of driver education in producing safer drivers, the National Highway Traffic Safety Administration (NHTSA) conducted a large, long-term study in DeKalb County, Georgia. This research, known as the DeKalb study, took place in the late 1970s and early 1980s and involved more than 16,000 students, organized into three groups. The groups received varying types of driver training; crashes and driving violations over time were tracked by group.

This study was meant to settle the question of driver education's effectiveness in producing safer drivers. Instead, the study results raised even more questions. Further discussion about this study and subsequent ones is presented in the following section.

5.2 Evaluation Studies of Driver Education

Driver education programs must be evaluated against a stated goal. If there is no goal, there is nothing to evaluate. The Fifth National Conference on Driver Education, held in 1973, noted that the purpose of driver education was "to develop safer and more efficient highway users who understand the essential components of the highway transportation system in a manner that will enhance the effectiveness of such components." More recently, in a 1994 report to the U.S.

Congress, NHTSA described driver education as "a training program of organized learning and practice designed to provide the basic knowledge, attitudes, and skills needed to drive safely, and to provide the advanced knowledge and skills needed for safe driving performance under special circumstances." These examples at the federal level, coupled with the fact that driver education is generally discussed as a method to reduce crashes, provide clear indication that safety is a principal goal.

If increased safety is a goal of driver education, then one measure of success is the reduction in crashes by trained drivers. As noted above, many of the earliest evaluations of driver education showed positive results in this arena, only to be later disqualified as flawed. Recent studies have used more acceptable research methods to evaluate driver education programs. Studies have generally used one of three basic research designs. These designs and an explanation of each are briefly discussed below.

Experimental Studies – Students are randomly assigned to a group, with each group having different training conditions. Crash rates are then compared between the groups.

- **Pro**: Can more easily control for confounding factors.
- **Con**: Large numbers of participants are needed to gain statistically significant results.

Quasi-Experimental Studies – Students self-select into groups of different training conditions. Crash rates are then compared between the groups.

- **Pro**: Simpler to set up.
- **Con**: May not be able to control for all confounding factors.

Ecological Studies – Comparisons of before and after crash rates are made in a jurisdiction in which a change in driver education requirements is implemented.

- **Pro**: Simplest type of study and shortest study duration.
- **Cons**: Changes may reflect other changing influences in the community. Study relies on jurisdictions making the change that researchers want to test.

Within the past decade several large-scale analyses of previous driver education studies have been conducted. The most recent one is titled *Large Scale Evaluation of Driver Education: Review of the Literature on Driver Education Evaluation, 2010 Update*. This evaluation was conducted by Lawrence Lonero and Dan Mayhew for the AAA Foundation for Traffic Safety, and is comprehensive in scope. It evaluates both individual studies of driver education programs as well as earlier evaluations of previous studies. Other evaluations of driver education were researched for this report, however the synthesis of evaluations presented here draws heavily on the Lonero and Mayhew document.

The largest and most influential driver education study is the DeKalb study, introduced above. This study used the "experimental" methodology described above and was conducted in the late 1970s and early 1980s. It was meant to be the authoritative final word on the safety effects of driver education. More than 16,000 students were classified based on their gender, grade point average, and socioeconomic status, which are indicators of crash likelihood. Similar students

were then randomly assigned to one of three groups. The sample size was large enough to statistically detect a 15 percent or greater difference in crash rates among groups (differences less than 15 percent would require a larger sample size to reliably detect).

The first group received an intensive 70-hour driver education program that had been specifically developed for this study by a national group of experts. It was considered the best driver education course available. It included classroom training, use of a driving simulator, driving on a closed course, and on-road driving in normal traffic.

The second group received a 20-hour driver education program that was designed to give the students adequate knowledge and skills to pass a driving test. This program included classroom training, simulator use, and closed course instruction, but only one hour of on-road instruction.

The last group was the control and received no formal driver education. The resulting data was analyzed extensively by several sets of researchers, each approaching the data from a slightly different angle. The various analyses produced a range of results showing driver education to have positive, negative, and no influence on safety. Despite the rigorous attempts by the study designers and the data analysts, the value of driver education continued to be unclear and controversial.

The Lonero and Mayhew 2010 report goes on to review a large number of experimental, quasi-experimental, and ecological studies, as well as reviews of previous studies written by other researchers. Although a few of the studies appear to show positive results from driver education, the majority show no statistically significant difference between new drivers who received driver education and those who did not. A few even indicated that driver education students were involved in more crashes than others.

Because few studies have shown a positive correlation between driver education and reduced crashes, many researchers have used the results of the various studies to theorize why driver education has not proven to reduce crashes.

5.3 Why Driver Education Has Not Reduced Crashes

There are a number of reasons put forth in the research literature for why driver education has not been successful in increasing safety for young drivers. The most prominent reasons are discussed in the following sections.

5.3.1 The Early Licensure Effect

Driver education enables new drivers to get their full driver's license earlier than they otherwise would. The sooner a teen gets his or her driver's license, the more overall time they will spend driving on their own. This provides more opportunities to crash.

There are several reasons why teens who take driver education get licensed earlier, and the specific reason will vary for each individual.

First, some states allow a new driver to obtain a junior license or full unrestricted license earlier if they complete a driver education course. These states thus provide an incentive for new drivers to take driver education. Another reason for early licensure is the parent's assumption that their teen has been well trained by a driver education course and is therefore safe and ready to begin driving independently at an earlier age than parents might have otherwise allowed. Additionally, the teens themselves may be emboldened by a driver education course and elect to take their driving test earlier than they otherwise would.

5.3.2 Overconfidence

Some studies have found that driver education actually increased crashes. The cause for this is theorized to be related to overconfidence of the driver. Driver education has provided a false sense of increased driving skill that leads to risky driving behaviors. This is especially true for students who have taken a driving course that teaches advanced skills such as skid control.

5.3.3 Inadequate Time to Teach Relevant Skills

Most driver education courses still follow the decades-old pattern of 30 hours of classroom time and 6 hours of behind-the-wheel time. Students generally have no prior experience with operating a vehicle, therefore most of the time must be spent teaching the basic mechanics of driving and the associated rules of the road. This leaves very little time for more than a cursory discussion of hazard perception and risk management skills.

5.3.4 Other Motivations and Influences

Teenagers are likely to be focused mainly on learning enough to pass their driving test; safety is typically low on their list of motivations. In addition, once licensed, young drivers' actions are governed by a complex set of motivations, attitudes, peer influences, decision-making skills, and risk awareness. It is very likely that these factors outweigh most learned safe driving behaviors from a driver education course. This is the same underlying reason why other health-related education programs have difficulty influencing teen behavior.

5.3.5 Failure of Single-Technique Approaches

As noted above, driver behavior is influenced by a number of very strong factors. As such, changing that behavior is difficult, and it is unlikely that one single intervention, such as driver education, could change behavior on its own. Combinations of influences and behavior modifications can and do work. This has been proven in areas such as seat belt usage as well as other areas of health promotion, where multiple platforms have been used over many years to change attitudes and actions. In addition, as discussed previously, driver education has largely not taught the skills that are most relevant to crash reduction.

5.3.6 Majority of Learning Takes Place After Licensing

Learning to drive well involves a long learning curve. Basic vehicle maneuvering must be learned before more advanced safety skills can be absorbed and implemented. As such, most higher-skill and safety learning happens after licensure, as new drivers gain additional practice

on the road. The ideal time for safety training is during the time when this type of learning is taking place. Driver education, however, is generally taken when drivers are novices, before they can fully grasp advanced safety skills.

5.3.7 Unsystematic Research Has Not Improved Driver Education

While a significant amount of research has been done on driver education, it has been relatively unsystematic. New studies have often failed to build on previous research. The positive findings that some studies have produced have rarely been followed up by later research. In addition, what research has been done has rarely substantially affected the driver education that is delivered to millions of teenagers every year. Driver education needs to be based more on principles and techniques that have been proven to change behavior.

5.3.8 Crashes as a Measure of Success

Finally, it is appropriate to mention that gauging the success of driver education based on the reduction of crashes may be an inappropriate measure of success. Crashes are relatively rare events that are caused by a variety of complex factors. Many of these factors are out of the control of the driver. The majority of crashes are minor, involving only property damage, meaning that crashes resulting in injuries and fatalities are even rarer. The causes of these crashes are even more difficult to discern as there are usually multiple causing factors. As such, it is difficult to be confident that driver education itself caused any of the observed changes in traffic injuries and death.

5.4 Issues with the Existing Evaluations of Driver Education

As noted previously, driver education has been offered as a countermeasure to crashes and the associated injuries and fatalities. Accordingly, studies of driver education programs have largely evaluated the programs on crash reduction. In the previous section, we began to discuss why crash reduction may not be the best way to evaluate the effects of driver education. With crashes being rare occurrences, it is possible that driver education is having either a positive or negative effect on overall driver safety that is not captured in the crash data. Drivers may be safer or may drive more defensively based on their education, but the change may be small enough that it does not compensate for all the other factors leading to a crash. The crash rate, therefore, remains unchanged.

It is impossible to design and implement the perfect study of driver education. The DeKalb study received millions of dollars in federal funding in an attempt to create and implement the best possible study of driver education, but even this effort resulted in data with shortcomings severe enough to warrant skepticism of any conclusions drawn. The most scientifically sound studies are of the experimental design where subjects are randomly assigned to various categories of driver education treatments. However, this type of study has extreme logistical challenges because of the sample size needed to generate reliable results. The DeKalb study, with more than 5,000 participants per group (15,000 total), was designed to detect a 15 percent reduction in crash rates. However, it is more realistic that a driver education program would only result in a 5 to 10 percent reduction in crash rates.

Since larger sample sizes are needed to accurately detect smaller reductions in crash rates, the required sample sizes to detect 5 to 10 percent reductions are quite large. For example, to accurately detect a 10 percent crash reduction would require a sample size of 6,200 participants per group, or 12,400 total for a two-group study. Detecting a five percent reduction would require 25,000 participants per group (50,000 total). The logistics of performing a study of this magnitude quickly spiral into the realm of impossibility.

Accurately creating comparison groups can also be a challenge. There are many variables such as socioeconomic status, age, and location to control for. In addition, these factors can change over the course of a study. Study groups can also change over time to become less homogeneous as participants in the various groups drop out of the study at different rates. Any study that utilizes school students also faces the problem of group "contamination," as students in different groups interact socially with each other and discuss their varying driver training.

Most evaluations of driver education have focused on crashes while ignoring other possible measurable outcomes, known as intermediate outcomes. Intermediate outcomes are things such as driving test pass rate, knowledge about safe driving skills, performance of skills while driving, self-awareness of skill limitations, and attitudes about safe driving. Outcomes such as these are more likely to be able to be influenced by a well-designed driver education curriculum, and the amount of influence is more likely to be measurable. Students have more control over these factors than they do over the possibility that they will be involved in a crash.

5.5 Improvements to Driver Education

Research has yielded several types of improvements to driver education that are likely to increase the effectiveness of driver education and possibly reduce crashes, injuries, and fatalities in new teen drivers. These improvements fall into categories of what is taught, how it is taught, and who does the teaching.

5.5.1 What is Taught

Several research reports have delved into crash reports to try to identify the causes of crashes involving young drivers. The results of the studies fairly consistently identify the main causes of crashes for young drivers to be

- failures in visual scanning,
- errors in attention, and
- failures to adjust speed relative to conditions.

Researchers have attempted to design educational curricula and teaching methods to address these crash causations. To address the issue of improper visual scanning, several training programs have been created in the U.S. as well as in England and Australia. Within the U.S., significant research has been done at the University of Massachusetts, Amherst. That research has focused on the development of several versions of the Risk Awareness and Perception Training (RAPT) program. This program attempts to train drivers to better scan for potential

hazards, even when those hazards don't materialize, using a training program presented on a standard desktop computer. These studies have proven that novice drivers can be trained to better scan for hazards. More importantly, the researchers have shown that drivers are able to take the specific hazardous situations they were trained on using computer visualizations and generalize them to other driving situations that are somewhat different. More recently, the researchers have taken students trained with the RAPT program and evaluated their eye movements during actual on-the-road driving. The RAPT-trained students showed better eye scanning for hazards than the untrained control group.

Researchers have also made efforts to develop a computer-based training program to correct for errors in attention. Evidence from field research and driving simulators has shown that younger drivers are more likely than older drivers to make long glances away from the road to conduct secondary tasks, such as adjusting the radio. Researchers therefore developed a computer-based training program that taught students to accurately perform a secondary task while limiting glances away from the roadway to less than two seconds. Subsequent testing showed the trained students taking more short glances away from the road rather than fewer long glances. These results indicate the ability to train young drivers to maintain better attention to the roadway.

Speed adjustment has been a more difficult causation to address. Speeding is caused by a variety of factors and is not generally a skill-related issue. Research has been done to attempt to explain the demographics and personalities of speeders to enable researchers to create possible countermeasures. This research, however, is preliminary at best. At this point, existing speed countermeasures such as physical changes to the street (traffic calming) and additional enforcement and increased penalties are the only viable options.

While the results of the research into visual scanning and attention maintenance are very promising, it has not been proven that this or similar training would lower crash rates. Additional studies would be required to prove this in a statistically valid fashion. In addition, participants in these studies have been aware that they are part of a study. This knowledge may motivate them to attempt to perform better or pay more attention. It is unknown how students who have undergone these training programs would perform when on the road by themselves or with other teenagers in the car, or how long the effects of the training will last.

5.5.2 How it is Taught

There is a vast body of research into the best methods by which to educate students. Very little of this has been used to improve driver education courses throughout the U.S. The U.S. Department of Education in 2007 published a guide entitled *Organizing Instruction and Study to Improve Student Learning* that consolidates the best general practices from education research. The key recommendations of this guide include the following:

- **Space Learning Over Time** – Students retain information better when it is presented in smaller segments and through a series of shorter lessons rather than in one long session.
- **Blend Worked Example Solutions and Problem-Solving Exercises** – Moving back and forth between instructor-led example problems and students working on problems by themselves has proven to be most effective.

- **Combine Graphics With Verbal Descriptions** – This allows students to listen and view information at the same time.
- **Connect and Integrate Abstract and Concrete Representations of Concepts** – Abstract concepts such as risk anticipation and attention maintenance must be made real for students to understand and learn them.
- **Use Quizzing to Promote Learning –** Quizzes can be used to both introduce a new subject and to review key concepts, helping to cement the ideas in their memories.
- **Help Students Allocate Study Time Effectively** – Helping students understand what they know and what they don't know helps them to more efficiently use their study time.
- **Help Students Build Explanations by Asking and Answering Deep Questions** – Deep questions often start with why, how, and what if, and help students to describe causal relationships between facts and concepts.

There is a question as to whether standard driver education, consisting of 30 classroom hours and 6 behind-the-wheel hours, has enough time to integrate all of these best practices. Likely, it does not, requiring the courses to be expanded to accommodate them or necessitating that some of this teaching be undertaken by parents as they supervise new drivers during the learner's permit stage of driving.

In addition to these best practices from educational research literature, there are years of research and practice in other areas of injury prevention education directed at teens. These include areas such as tobacco prevention, drug and alcohol prevention, sex education, and obesity prevention. Many of the most effective of these programs begin at a much earlier age than driver education, often in elementary school. They are also integrated into other courses. These efforts often adopt the social influences model that deals not only with knowledge about a topic, but also the social pressures that a student will face and how to resist them. The lessons from this area of education suggest that driver education needs to be a longer-term endeavor that teaches skills over a multi-year period and deals with the social pressures that lead to increased crashes that occur when multiple teens are in a vehicle together.

Another way to achieve better outcomes by modifying how driver education is taught is to adopt a multi-phased approach. Before teens obtain their license, they are most interested in learning the knowledge and skills necessary to obtain their license. They have much less motivation to learn safe driving techniques. A way to address this fact is to focus pre-license learning on the skills and knowledge needed to pass the licensing exam. A second phase of driver education could begin after the teen has some driving experience and can begin to apply some of the attention maintenance and visual scanning training explored above.

5.5.3 Who Teaches Driver Education

The common concept of driver education is that there is one teacher for the class. However, parents and other adult mentors have always been an informal part of driver education, especially for those learners who do not take a formal driver education class. The implementation of

Graduated Driver Licensing requirements that stipulate a specific number of hours that a teen must train in the vehicle with an adult in the passenger seat has made the role of parents more formal. Parents are expected to certify that their child has met the required hours of practice driving. Unfortunately, this expanded role for parents is often not accompanied by any training for the parents in how to best utilize the practice driving time or how to create a cooperative learning environment. There are two main methods that have been used to address this gap. They are the creation of a user-friendly parents' guide and the requirement that parents and teens attend a joint educational session that discusses these issues. Both of these methods aim to:

- Educate parents about the GDL laws in the state and how they can help enforce the restrictions at each stage of the licensing process.
- Discuss the most effective ways to teach their teen to drive.
- Establish the learning process as a partnership, with each party having responsibilities in the process.
- Encourage the creation of a parent/teen driving contract that sets out the GDL laws and any additional family rules that apply, and the punishment for breaking the laws or rules.

Positive peer pressure can also be effective in promoting safe driving skills and practices. Peer-to-peer programs have involved several forms:

- Competitively selecting teens for a committee designs and implements safe driver messages and events.
- Creating competition between individuals or groups of teens to design a safe driving campaign, with the winner awarded a grant to fund the project.
- Using teen focus groups to help develop state safety programs.
- Conducting a surprise seat belt survey at a school and then charging student groups with designing campaigns to increase seat belt usage.

5.6 Driver Education Standards

In the past several years, there has been a push to develop driver education standards to serve as a template or model of a good driver education program. This effort has been led by NHTSA with significant input from other groups, organizations, and associations with an interest in driver education and driver safety.

5.6.1 Administrative Standards

Driver education administrative standards have been pioneered and are known as the Novice Teen Driver Education and Training Administrative Standards (NTDETAS). Administrative Standards and Content Standards have been developed; Delivery Standards and Online Delivery Standards are slated for development and future release.

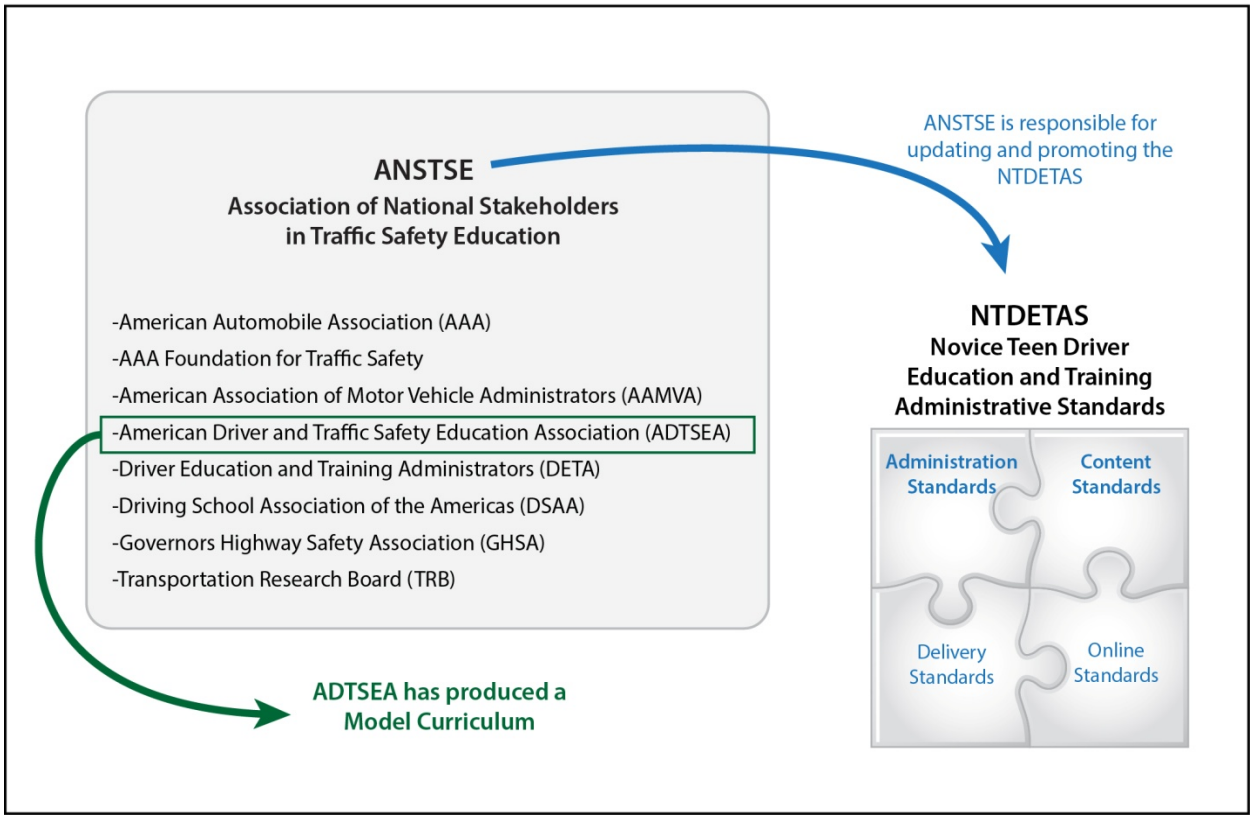
An alliance of driver education and driver safety groups has formed in order to promote adoption of the existing standards, create the Delivery Standards and Online Delivery Standards, and generally advocate for the use of the standards. This group is called the Association of National Stakeholders in Traffic Safety Education (ANSTSE), and its members include the following:

- American Automobile Association (AAA)
- AAA Foundation for Traffic Safety

- American Association of Motor Vehicle Administrators (AAMVA)
- American Driver and Traffic Safety Education Association (ADTSEA)
- Driver Education and Training Administrators (DETA)
- Driving School Association of the Americas (DSAA)
- Governors Highway Safety Association (GHSA)
- Transportation Research Board (TRB)

This group has recently developed a strategic plan to help it pursue its goals and to define future priorities. A graphic depiction of this group and the standards follows.

Figure 5: ANSTSE Members and Products



As noted above, the NTDETAS will consist of four distinct parts, which are described in greater detail below:

- Administrative Standards
- Content Standards
- Delivery Standards
- Online Delivery Standards

Administrative Standards – The administrative standards discuss how a driver education program should be established and administered. It contains five sections as follows.

- **Program Administration**
  Covers issues such as choosing a state agency to oversee driver education, having monitoring and evaluation procedures for driver education programs, and creating a teacher certification process.
- **Education and Training**
  Discusses creating an approved curriculum, requiring post-course evaluations by students, and setting the minimum number of classroom and behind-the-wheel hours.
- **Instructor Qualifications**
  Covers the qualifications required for driver education teachers and continuing education requirements.
- **Parental Involvement**
  Requires states to specify parental involvement in driver education, such as parent seminars and post-course debriefings.
- **Coordination with the Driver Licensing Process**
  Deals with creating a communication system between the state driver education agency and the driver licensing agency and instituting driver education as an integral part of the state GDL program.

Content Standards – These standards describe the desired outcomes of the driver education course. They include outcomes for both the classroom and on-the-road portions of driver education. Two different, but similar, content standards have been developed—one by the American Driver and Traffic Safety Education Association (ADTSEA) and another by the Driving School Association of the Americas (DSAA). Both are recognized as an accepted standard within this package of standards.

Delivery Standards – These standards are currently under development and include items such as class size, length of each class session, number of hours an instructor can teach each day, sequencing of classroom and behind-the-wheel training, teacher/student ratio, type of classroom, and driver education car requirements. These standards are expected to be released in 2014.

Online Delivery Standards – These standards will be developed in the future and will relate to the methods used to present driver education in a web-based setting. ANSTSE expects to begin development of these standards in 2013.

5.6.2 Model Curriculum

In addition to the administrative standards advocated by the ANSTSE, the ADTSEA has developed a model curriculum. This model curriculum is a package consisting of multi-part lesson plans, activities and worksheets, still photo illustrations, and video clips. It uses the AAA textbook *How to Drive*, but includes references to two other textbooks as alternatives.

The most recent version of this curriculum was released in June 2012. Its development included adding enhanced content on distracted driving, ensuring that both the ADTSEA and DSAA

curriculum content standards are addressed, and complying with the newly-published NTDETAS. It includes 45 hours of classroom instruction and 8 hours of behind-the-wheel instruction (more than the standard 30 and 6). The lesson plans for the model curriculum are available online, however, the complete package that includes the activities and audio-visuals must be purchased from ADTSEA.

NHTSA released a report in 2009 that studied the feasibility of evaluating the ADTSEA model curriculum for safety benefits. The report concluded that designing a proper research study would be challenging, requiring a jurisdiction willing to implement the curriculum in its entirety, obtaining adequate funding for what would be an expensive undertaking, and using large sample sizes for statistically significant results. It also noted that most previous evaluations of driver education found limited safety benefits, therefore study sponsors would need to accept that an analysis of the model curriculum may yield similar (disappointing) results.

5.7 Graduated Driver Licensing

Graduated driver licensing as practiced in various states may or may not include formal driver education. However, GDL by itself is a type of driver education. It restricts new drivers from the most dangerous driving situations when they are the least skilled at handling those situations. New drivers develop their skills as they spend additional time behind the wheel, and as they do, the restrictions are gradually eliminated.

Each state has implemented GDL in a slightly different way, and several reports have been written to document the variations that exist nationwide. Based on accident statistics, two organizations have made recommendations of the optimal GDL restrictions for safety. These organizations are the Advocates for Highway and Auto Safety (AHAS) and the Insurance Institute for Highway Safety (IIHS). The following table shows their recommendations and Pennsylvania’s current regulations.

Table 5: Pennsylvania GDL Restrictions Compared to IIHS and AHAS Recommendations

GDL Restriction	Insurance Institute for Highway Safety	Advocates for Highway and Auto Safety	Pennsylvania Regulations
Permit Age The age at which a teen can first get a driver's permit.	16 years old	16 years old	16 years old
Practice Hours The number of supervised practice hours required before taking the license exam.	65 hours	30-50 hours	65 hours
License Age The age at which a teen can take the junior license exam.	17 years old	6 months after receiving permit (16½ years old)	16½ years old
Night Driving Restrictions The hours during which drivers with a junior license cannot be on the road.	Restriction begins at 10 p.m.	10 p.m. to 5 a.m.	11 p.m. to 5 a.m.
Teen Passengers The number of teen passengers that junior license drivers may carry.	No teenage passengers	No more than one non-family passenger under age 21	First 6 months – Maximum of one non-family passenger under age 18 After 6 months – Maximum of three non-family passengers under age 18
Cell Phone Restriction	No recommendation	Handheld and hands-free cellular devices prohibited	No texting
Unrestricted License Age The age at which a driver may graduate to a license without any GDL restrictions.	No recommendation	18 years old	18 years old Can be reduced to 17½ by taking driver education

Other research has produced additional recommendations for strengthening GDL and incorporating driver education more formally into the process, with different driver education topics taught at different stages of licensing. Before teens earn their permit and during the permit stage, they benefit most from driver education that covers the topics related to rules of the road; meanings of signs, signals, and markings; and basic driving techniques. Drivers with a junior license and some solo driving experience have a need for more safety-oriented training such as hazard perception and decision-making skills.

Many states currently allow new drivers who take driver education to be licensed earlier or graduate to an unrestricted license earlier than those who have not taken a course. Most researchers now advise against this practice, based on the evidence that standard driver education does not make for statistically safer drivers. In addition to driver education conferring no safety benefits, early licensing allows new drivers to drive more (without an adult and at a younger age), increasing their risk exposure and contributing to the increased likelihood of crashes, injuries, or death.

Research done on ways to train new drivers to increase risk perception and maintain attention has led to an additional approach to potentially strengthen GDL. It is possible that these training programs could be reconfigured to test for a driver's risk perception and attention maintenance and could be used as a requirement for obtaining an unrestricted license.

One final addition to GDL laws is the use of a decal that identifies drivers with a junior license. Enforcement of GDL restrictions can be difficult for law enforcement officers, because identifying junior drivers requires a traffic stop and visual inspection of the license. An identifying decal would let police know that a particular vehicle and driver are subject to the relevant GDL restrictions. This regulation has been implemented in several European and Asian countries as well as in Australia and Canada. In addition, New Jersey implemented a decal law in 2010 that research has shown to be effective in increasing GDL citations issued by police and reducing crashes for junior drivers.

6. Survey of Other State Practices

This section includes research on practices in other states. These practices are listed by category and represent examples of approaches that could potentially improve elements of driver education or related processes.

6.1 Driver Education Programs

6.1.1 Curriculum Content and Minimum Standards

Minimum Time for Special Topics in Driver Education Curriculum, Iowa
Within Iowa's required 30 hours of in-class driver education, special topics include: 4 hours of substance abuse education, a minimum of 20 minutes on railroad crossing safety, and information on organ donation. Three of the six required hours of behind-the-wheel instruction must occur in the vehicle; simulators may be used for the remaining three hours.[1]

Enhancing Driver Education with Teen Crash and Conviction Data, Vermont
NHTSA's Technical Assessment of Vermont's Driver Education Program recommended distribution of teen crash and conviction data to the driver education and traffic safety community to help enhance and improve programs.[2]

6.1.2 End-of-Course Testing

In-Class and Behind-the-Wheel End-of-Course Testing, Maryland
Both in-class and behind-the-wheel driver education courses culminate with an end-of-course test.[3]

[1] *Driver Education Practices in Selected States*, National Highway Traffic Safety Administration, July 2011.
[2] *State of Vermont Technical Assessment of the Driver Education Program*, National Highway Traffic Safety Administration, 2011.
[3] *State of Maryland Technical Assessment of the Driver Education Program*, National Highway Traffic Safety Administration, 2010.

6.1.3 Hazard Recognition and Risk Perception

Driver Education Risk Prevention Curriculum CD, Oregon
This resource includes classroom and in-car lesson plans, homework assignments, entrance and exit exams, and more. It brings together materials from the Western Oregon University – Oregon DOT (WOU-ODOT) Trainer of Trainers Curriculum, National Driver Training Credentialing Program of the American Driver and Traffic Safety Education Association (ADTSEA), and the National Institute for Driver Behavior (NIDB) Driver Risk Prevention Curriculum. **Washington**, **Vermont**, **New Hampshire**, **and North Dakota** have modified the Risk Prevention Curriculum to their states.[4]

Risk Prevention Student Curriculum, Washington
A four-page list of core elements for in-classroom concepts and in-car performance sets emphasizes line-of-sight and path-of-travel concepts, low-risk turn-around options, the high-risk four-second danger zone, the deadly D's (drinking, drugs and driving, drowsy driving, dangerous emotions, distractions, drag racing), and organ donation.
(http://www.dol.wa.gov/business/drivertraining/docs/WRPCStudentCoreElements.pdf)

Rule the Road, Indiana
Annually, state highway safety officials in Indiana sponsor a full-day skills event for nearly- or newly-licensed teen drivers to learn and practice driving skills with professionals. The event aims to inform attitudes and behaviors with a Fatal Vision goggles course that simulates impairment, Quick Click seat belt challenge, distracted driving simulator, and skid device (drift lift). The $20,000 budget is supplemented with donations of time and materials from law enforcement and driving schools.[5]

6.1.4 Other Motivations

2008 Driver Excellence Scholarship Challenge, Oregon
In 2008, the Oregon DOT Transportation Safety Division gave Oregon teens the opportunity to demonstrate their driving skills, competing for scholarships up to $2,000. The challenge was funded through a grant by the Ford Motor Company's Driving Skills for Life program.[6]

6.1.5 Qualifications of Driver Education Program Instructors

Phased Licensure of Driver Education Instructors, Maryland
Maryland's two phases of driver education instructor licenses are Apprentice Instructor and Instructor. An apprentice instructor has passed a 50-question written knowledge test, has

[4] *Oregon Driver Education Program Background*, Oregon Department of Transportation, October 2008 and October 2010.
[5] *Curbing Teen Driver Crashes: An In-Depth Look at State Initiatives*, Governors Highway Safety Association, 2011-2012.
[6] *Oregon Driver Education Program Background*, Oregon Department of Transportation, October 2010.

satisfactorily performed a 10-minute mock in-class presentation, has been audited for the candidate's personal driving skills, and has satisfactorily performed a 10-minute mock behind-the-wheel exercise. These tests and exercises are administered in the order listed and instructors must receive a score of at least 80 percent on each test in order to receive the Apprentice Instructor Permit, which is valid for six months and is not renewable. Prior to permit expiration, the candidate must complete two courses—Advanced Classroom Instruction in Maryland and Advanced Behind the Wheel Instruction in Maryland—taught by a certified instructor trainer at an approved facility. Each course is approximately 36 hours. In order to receive full licensure, the candidate's live teaching is evaluated by an examiner from the Department of Motor Vehicles (DMV).[7] NHTSA's Technical Assessment of Maryland's Driver Education Program recommended stronger advanced instructor training (120 hours and specified technical and teaching/evaluation topics).[8]

6.1.6 Quality Assurance of Driver Education Programs

Quality Assurance Specialist, DOT Traffic Safety Division, Oregon
As part of Oregon's ongoing efforts to improve driver education, the state legislature in 2007 established a quality assurance specialist responsible for compliance auditing of driver education within the Traffic Safety Division.

NHTSA's Technical Assessment Recommendations, Various States
NHTSA's technical assessments of state driver education programs use the Novice Teen Driver Education and Training Administrative Standards as a framework for exploring state regulations and practices. At least five assessments have been completed and published. Common program shortcomings and recommended opportunities for improvement include:

- Implement stronger driving school oversight (reviews/audits of curricula, operating procedures, materials, equipment, vehicles, and instructors).[9]
- Conduct an annual audit of courses and instructors.[10]
- Require ongoing professional development and a certification renewal process for instructors and quality assurance (auditing) of courses per curriculum standards.[11]

[7] *State of Maryland Technical Assessment of the Driver Education Program,* National Highway Traffic Safety Administration, 2010.

[8] *State of Maryland Technical Assessment of the Driver Education Program,* National Highway Traffic Safety Administration, 2010.

9State of Maryland Technical Assessment of the Driver Education Program, National Highway Traffic Safety Administration, 2010.

10State of Oregon Technical Assessment of the Driver Education Program, National Highway Traffic Safety Administration, 2010; http://www.ghsa.org, accessed October 24, 2012.

11State of Vermont Technical Assessment of the Driver Education Program, National Highway Traffic Safety Administration, 2011.

6.1.7 Driver Education Program Funding

In 2010 the State of North Carolina undertook a study that evaluated potential improvements in funding and delivery of driver education. That study identified the various funding scenarios for driver education nationwide. It found that:

- 8 states (16 percent) fully fund driver education
- 10 states (20 percent) partly fund driver education
- 32 states (64 percent) do not fund driver education

The study found that of the states that do provide funding for driver education, four states fund their program through the state's general fund. Other states funded driver education in a variety of ways, including funding sources that were dedicated to driver education, such as a fee on driver licenses or license plates. North Carolina used highway funds with no dedicated funding source.

North Carolina was one of the states that fully funded driver education. In the three years prior to the issuance of the study report, North Carolina had spent an average of $33.5 million per year to fund the courses. The cost per student ranged from $265 to $354 based on whether the coursework was provided by public school staff, contracted providers, or a combination of the two. No comprehensive data exists on driver education costs nationwide. However, a brief search of online data found that the cost of driver education per student likely falls in the range between $150 and $500.

6.2 GDL and Law Enforcement

6.2.1 Age Requirements of GDL

Highest Minimum Age Requirement for Permit Application, Various States
Highest minimum age is 16 in eight states: Delaware, Kentucky, Massachusetts, New Jersey, New York, Oregon, Pennsylvania, and Rhode Island, plus Washington, D.C., and Guam.

Highest Minimum Age Requirement for Full Licensure, Various States
Vermont requires young drivers to be age 18 and to have a clean junior license driving record for the previous six months to be eligible for full licensure.[12]

The minimum age for a junior license in New Jersey is 17 years. Since the minimum duration of a junior license is one year, the minimum age for full licensure is 18 years.

Six other states require a driver to be at least age 18 to be eligible for a full (unrestricted) license: Arkansas, Florida, Georgia, Missouri, Virginia, and Washington.

[12] *State of Vermont Technical Assessment of the Driver Education Program,* National Highway Traffic Safety Administration, 2011.

6.2.2 GDL/Driver Education Performance Measurement

Oregon Driver Education Program
Oregon has been systematically implementing improvements to its driver education program since 2000. These have included new standards for curriculum, instructors, and instructor preparation training, and full implementation of the GDL by ODOT. In 2008, ODOT measured the effectiveness of these improvements by reviewing data on fatal and injury crashes of 16-year-olds from 1998 to 2007, and found a 48 percent reduction of fatal and injury crashes.[13]

6.2.3 Enforcement of GDL

GDL Checkpoints and GDL Decals, NJ Division of Highway Traffic Safety, New Jersey
NJ Division of Highway Traffic Safety funded two GDL Checkpoint projects to provide law enforcement officers with an opportunity "to interact with teen drivers and educate them about GDL laws and safe driving" without a focus on penalties. The GDL checkpoints were conducted near high schools and other locations frequented by young drivers. Observed GDL violations were cited but not ticketed.

Identifying teens driving under GDL restrictions is a challenge. New Jersey was the first state to require a GDL identifier on any vehicle operated by a person under 21 driving with a permit or provisional license. Licensing officials developed a Velcro-backed red reflectorized decal that attaches to the license plate; decals on both front and back license plates are required. The requirement took effect in 2010. Decals cost the Motor Vehicle Commission $4 per pair. There is a $100 fine for failure to display the decals where required.[14]

Identifiers are voluntary in **Delaware** and reflective magnets or stickers are free, sponsored by the DMV, and available at all DMV facilities. The DMV spends $3.25 per identifier.[15]

Alaska, Iowa, Kentucky, Michigan, Minnesota, and **North Carolina** have introduced legislation to require permit/intermediate driver identifiers.

Leveraging School Parking Privileges, New Jersey
The New Jersey Attorney General and the Department of Education Commissioner prepared model language for the Uniform State Memorandum of Agreement between Education and Law Enforcement to address sharing student traffic offense information: "The Chief of Police or Station Commander agrees to notify the chief school administrator or his designee of any GDL law or traffic violation committed within the school district by a student enrolled in the school

[13] *Oregon Driver Education Program Background,* Oregon Department of Transportation, October 2008 and October 2010.

[14] *Protecting Teen Drivers: A Guidebook for State Highway Safety Offices,* Governors Highway Safety Association, 2010; *Graduated Driver Licensing Decal Law: Effect on Young Probationary Drivers,* http://www.ajpmonline.org/webfiles/images/journals/amepre/AMEPRE_3621%5B3%5D-stamped.pdf; http://www.ghsa.org, accessed October 24, 2012.

[15] http://www.ghsa.org, accessed October 24, 2012.

district." Several schools have adopted this information-sharing model and have used its information as a basis for rescinding student parking privileges in the interest of student safety. Other schools have tied the privilege of student parking to mandatory parental attendance at teen driver orientation programs.[16]

6.3 Parental Involvement

6.3.1 Parental Involvement

Parent Involvement Resource Guide: A Guide for Implementing a Parent Involvement Program, Oregon
Prepared by the Oregon Traffic Safety Education Association in 2002 in cooperation with the ODOT Transportation Safety Division Driver Education Program, this 36-page resource guide for driver education programs provides approaches and materials to provide and promote parental involvement from pre-driver education to course completion. It includes sample letters, evaluation forms, and a parent/teen vehicle use and operation agreement. It is adapted with permission from the Washington Driver and Traffic Safety Association, Olympia, Washington. (http://www.oregon.gov/ODOT/TS/docs/DE/Oregon_DE_Parent_Inv_Res_Guide.pdf)

WhyDrivewithEd.com, Oregon
Why Drive With Ed is an initiative for parents of teen drivers. It emphasizes what driver education is and how it has changed, especially within the last 15 years. The effort includes a web-based slideshow, presenting stereotypes and incorrect assumptions about how novice drivers should learn to drive, and an ODOT-approved Why Drive With Ed.com seal, used to identify driver education providers that meet all the criteria to teach driver education courses in Oregon.[17]

6.3.2 Parent Orientation Meetings

Four states require parent orientation meetings: **Connecticut, Massachusetts, Oregon,** and **Virginia**. Such meetings are voluntary in **Georgia** and **Vermont.**[18]

In Connecticut, the mandatory 2-hour parent training requires teen attendance and must be attended concurrent with the teen's 8-hour safe driving course. The training curriculum was developed by the DMV and is taught by licensed driving school instructors. It addresses the GDL program; driving risk and brain development; parents' roles, responsibilities, and liabilities; and tips for instruction and driving supervision. The program is credited with reductions in at-fault crashes involving 16- and 17-year-old drivers and teen driving-related fatalities and injuries.

[16] *Protecting Teen Drivers: A Guidebook for State Highway Safety Offices,* Governors Highway Safety Association, 2010.
[17] http://www.oregon.gov, accessed October 24, 2012
[18] http://www.ghsa.org, accessed October 24, 2012.

Massachusetts also requires a mandatory 2-hour parent meeting; teen attendance is not required and no specific scheduling is required. The curriculum was developed by the Registry of Motor Vehicles and is taught by licensed driving school instructors. This content addresses the state-mandated driver education program, junior operator's law, skills to be learned, parent coaching, and the GDL law.

Select counties in Virginia (VA Planning District 8, 2004, expanded 2009) require a 90-minute parent/teen session. The session was developed by Partners for Safe Teen Driving (PSTD) and addresses the GDL law and licensing process, coaching, driving techniques, and risk and behavior. A sample driving contract is distributed at the session.

In Georgia, a 2-hour parent/teen course is free and voluntary, sponsored by Parents Reducing Injuries and Driver Error (PRIDE). The course can be required by court decision if the teen has committed a traffic offense. The course is taught by trained volunteer instructors. A 9-hour training is followed by an exam and a 2-hour observation; instructors can be recertified by teaching four classes or attending a 3-hour training. During the course, parents and teens participate in group and split activities. Instructors send an e-mail to follow up on parental use of the course material. Select insurance companies offer a discounted rate for those who complete the course.

Parent sessions are also voluntary in Vermont. Sessions include information packets, e-mail/voice communication, and concurrent parent-supervised practice driving.

NHTSA's assessment of Maryland's driver education program recommended a required orientation session for parents of novice teen drivers; it also recommended a required end-of-course briefing between the driving instructor and the parent of novice teen drivers.[19] Similar recommendations were made to Maryland's driver education program.[20]

Checkpoints Program, Michigan
Michigan provides video and print materials through its Checkpoints Program to encourage parents to limit teen exposure to high-risk driving conditions and to increase privileges gradually with experience and demonstrated safety. The materials include a parent/teen driving contract.[21]

6.3.3 Parent Guides

The Oregon Parent Guide to Teen Driving
This document describes the parents' role, guidance for parental supervision of teen drivers, and setting family rules and guidelines for driving. It outlines knowledge needed before starting the car, during basic and complex driving, and for emergencies. It explains Oregon's graduated

[19] *State of Vermont Technical Assessment of the Driver Education Program,* National Highway Traffic Safety Administration, 2011.
[20] *State of Maryland Technical Assessment of the Driver Education Program,* National Highway Traffic Safety Administration, 2010.
[21] http://www.ghsa.org, accessed October 24, 2012.

licensing program and consequences of driving violations and other violations that impact licensing. It was published in 2012 by the ODOT Transportation Safety Division and DMV/DMS and has also been modified and adopted by Washington's Department of Licensing. (http://www.odot.state.or.us/forms/dmv/7190.pdf)

The Parent's Supervised Driving Program, Safe Roads Alliance

The Parent's Supervised Driving Program is a multi-faceted program for state licensing agencies to improve how parents and guardians supervise teen driving. The program enables the licensing agency to bring the parent into the discussion of driver education and graduated licensing with a professionally-developed program and materials. It includes a printed guide also available in pdf and as an e-reader for Kindle, Nook, and iPad; a social media component; and a mobile application for smart phones (still in development). The guide outlines sequential lessons, each with a learning goal, guidance on practice location and conditions, lesson points and pointers, and signature lines for parent and teen. It was developed in consultation with NHTSA, Students Against Destructive Decisions (SADD), the Centers for Disease Control and Prevention, the American Association of Motor Vehicle Administrators, educational consultants, and experts in parent-teen relationships. It was designed and produced by Safe Roads Alliance and Travelers Marketing and is provided at no cost to state licensing agencies.

The program is tailored to the GDL program, driving laws, and relevant driving conditions of each state. A limited six-month supply is delivered for initial launch and feedback, followed by a second print run of the revised document. It is updated annually by state to reflect changes in state laws, standards, etc., and updated nationally as best practices in parental supervision are determined. A mobile application to track time and conditions of supervised driving and to suggest additional practice times and conditions is in development—a 2013 launch is expected. The program is in use in **Massachusetts, Rhode Island,** and **Vermont**. Agreements are also in place in **Maine, Wisconsin, Colorado,** and **North Carolina.** The program is under consideration in New York, Michigan, California, Florida, New Jersey, Georgia, Delaware, Arizona, Nebraska, Oklahoma, Washington, New Hampshire, and Tennessee. There are no performance metrics to date.[22]

Partners for Safe Teen Driving, Virginia

Materials produced include:

- Training (Awareness) Kit – Parent Guide: what you need to know before your teen drives; Parent Packet: brochure of ideas and tips, coaching, resources regarding insurance, a driving contract, tips in case of an accident, etc.
- 45-hour Parent/Teen Driving Guide (revised August 2012) of sequential skill-building lessons
- Parent/Teen Agreement
- Distracted, Drunk & Drugged Driving (information and weblinks)
- Teen Driving Myths
- Safe Driving Tips For Parents

[22]http://saferoadsalliance.org, accessed on October 17, 2012

40-Hour Parent/Teen Driving Guide (Parent Supervised On the Road Program), Georgia
This guide follows an instructional-based format rather than being a general advisory document for parents.

Parent-Teen Driving Guide, Illinois
This parent guide provides a lesson/skill-based instruction guide. It includes a quiz on GDL law, driving readiness checklist, outline of application process, parent-teen driving contract, affidavit/consent for a minor to drive, and driving log.

Parent Certification of Practice/Supervised Driving, Vermont
Vermont requires a supervisor-certified, state-provided log sheet of supervised driving; each entry must be initialed by the supervisor. NHTSA's assessment of Vermont's driver education program recommends notarization of the log sheet, emphasizing the importance of truthfulness, and educating parents on the consequences of falsifying log sheets.[23]

6.3.4 Parent Notification of Driving Record Incidents

Online Parental Access to Teen Driving Record, Illinois
In Illinois, when a driver under age 18 is cited for a moving violation, a letter from the Secretary of the DOT is sent to the teen's parents and filed in the teen's driving record.[24]

Teen Electronic Event Notification Service (TEENS), New York
TEENS sends an e-mail or letter to the parent when certain incidents are reported on a teen's driving record. These events include traffic violation convictions, driver's license suspensions, and certain crashes. Parental enrollment in TEENS is free and voluntary. Parents may enroll in the program at a DMV issuing office when their child first gets a permit, or via a single-page enrollment form available online or at a DMV issuing office. When a young driver turns 18, enrollment in TEENS is automatically deactivated, but the data is not deleted.[25]

[23] *State of Vermont Technical Assessment of the Driver Education Program,* National Highway Traffic Safety Administration, 2011.
[24] http://www.ghsa.org, accessed October 24, 2012.
[25] *Protecting Teen Drivers: A Guidebook for State Highway Safety Offices,* Governors Highway Safety Association, 2010; http://www.ghsa.org, accessed October 24, 2012.

6.3.5 Parental Involvement in Award of License

Award of License in Court, Virginia
After all licensing requirements have been met, Virginia requires the parent and the teen to appear at a (provisional) licensing ceremony before a judge. The ceremony can be held outside the courtroom to accommodate large groups of parents and teens. The license is handed to the parent to emphasize the gravity of the privilege and the role of the parent in the teen's driving privilege.[26]

6.4 Public Information and Media

Thursday Night Lights, Nevada
This initiative, sponsored by the Nevada DOT Office of Traffic Safety, developed award-winning public service announcements. The spots were created and produced by local teens involved in PACE (Prevent All Crashes Everyday) and aired during televised high school football games. Traffic safety-related interviews with law enforcement and other safety professionals were conducted during halftime, and other announcements about traffic safety and teen driving were made throughout the game. Information booths were placed on both the home and visitors' sides of the field to provide information and conduct surveys on teen attitudes about safe driving.[27]

Friday Night Live (FNL) is a similar traffic safety initiative for teens and the community in **California**.[28]

Be Sensible, Minnesota
The Minnesota Office of Traffic Safety (OTS) partnered with AT&T's Be Sensible teen driver program to distribute materials about Minnesota's law banning texting while driving. The OTS campaign was supported by co-branded AT&T television spots that feature actual texts sent or received by victims of fatal or serious injury crashes. The program was initially provided at no charge to thousands of teachers. Ninety-five percent of educators who have used the Be Sensible program plan to use it again.[29]

Teens at the Wheel, Illinois
In 2006, the Chicago Tribune featured a year-long series of more than 60 articles and editorials on teen driving. The first article discussed the Tribune editor's apprehension about his teen approaching the driving age. Positive feedback led to more articles contributed by a variety of sources.

[26] *Protecting Teen Drivers: A Guidebook for State Highway Safety Offices*, Governors Highway Safety Association, 2010.
[27] *Protecting Teen Drivers: A Guidebook for State Highway Safety Offices*, Governors Highway Safety Association, 2010.
[28] http://www.ghsa.org, accessed October 24, 2012.
[29] *Protecting Teen Drivers: A Guidebook for State Highway Safety Offices*, Governors Highway Safety Association, 2010.

New Jersey Teen Driver Study Commission
The New Jersey Teen Driver Study Commission engaged the media in publicizing its research. The commission provided ongoing press updates throughout its year-long effort. The final report was presented to the governor at a press briefing where all major media were present. The outreach led to three years of media coverage on the topic of driver education and safety.

6.5 Peer-to-Peer Safety Messaging

Teens in the Driver Seat, Texas
Teens in the Driver Seat is a school-based program developed by the Texas Transportation Institute to create and deliver safety messages peer-to-peer through four-step student-run safety campaigns. The program prescribes a general format that can be tailored by the students to focus on safety during a teen's first driving years and the top five risks most common to teen drivers: driving at night, distractions, speeding, low seat belt use, and alcohol. Each program surveys teen driver attitudes before and after the program to assess its impacts, e.g., risk awareness, cell phone use, and seat belt use. The program has reached high school, middle school, and college students since 2003 and is semi-competitive with volunteer awards. The annual program cost is $500,000 and is sponsored by Texas DOT and State Farm® with local sponsors. Teens in the Driver Seat has been sponsored by the **Georgia** DOT since 2007 and was sponsored by the Johnston County Teen Coalition in 2011 in **North Carolina.** SafeTREC received a grant to start Teens in the Driver Seat in **California.**[30]

Operation Teen Safe Driving, Illinois
Operation Teen Safe Driving is a competitive $2,000 grant program for student-run, school-based traffic safety programs, started in 2007. Fifteen schools in each of Illinois' seven geographic regions are awarded $2,000 to develop and measure the effectiveness of peer-led activities that have a positive impact on teen drivers. Programs are evaluated and one school in each of seven regions receives a cash award for a post-prom event. The top five schools in each region are invited to a Driving Skills for Life Ride and Drive event sponsored by the Ford Motor Company Fund. The program is funded by the Illinois DOT, Allstate Foundation, and Ford Motor Company Fund.[31] The program also receives significant support from the Illinois State Police, local law enforcement agencies, local Ford dealers, area Allstate agents, and numerous community leaders and volunteers. In its first three years, Operation Teen Safe Driving reached close to a quarter of a million high school students. During the same time period, Illinois experienced a significant reduction in the total number of fatalities of 16- to 20-year-olds. Fatalities among teens were reduced 49 percent, from 192 deaths in 2007 to 98 in 2009.[32]

[30] *Protecting Teen Drivers: A Guidebook for State Highway Safety Offices,* Governors Highway Safety Association, 2010; http://www.ghsa.org, accessed October 24, 2012.
[31] http://www.ghsa.org, accessed October 24, 2012.
[32] *Protecting Teen Drivers: A Guidebook for State Highway Safety Offices,* Governors Highway Safety Association, 2010.

Strive for a Safer Drive (S4SD), Michigan
Similarly, the Strive for a Safer Drive program invited 300 high schools in Michigan's 11 counties with the highest teen traffic fatalities to compete for 50 $2,000 grants for student-run programs. Students from the top campaigns are eligible for a free Driving Skills for Life clinic.[33]

Don't Drive Stupid, Utah
Utah's program was launched in 2006 with educational messaging targeted to teens. In 2009, the program was expanded to a peer-to-peer program. The program provides a toolkit for student campaigns. Outstanding campaigns receive $1,000; at least half of the money must be used for driver education. Poster and video/public service announcement contests were added. Winning posters became a calendar and winning videos were premiered at a movie theatre.[34]

Seat Belts are for Everyone (SAFE), Kansas
This pledge program launched in 2008 encourages consistent seat belt use by young drivers by awarding seat belt users with $25 gift cards. The program imposes a $60 penalty for pledge violation. A distracted driving component is being piloted.[35]

Battle of the Belt, Missouri
Missouri's six-week seat belt initiative conducted in 2006 was a survey-campaign-survey competition for student-run organizations. The program offered $500 awards based on change rates in seat belt usage, and a public service announcement competition with cash awards.[36]

6.6 Mature and Senior Drivers

6.6.1 Senior Outreach Programs

Super Seniors Program, Illinois
Super Seniors is a mobile driver license renewal program that visits senior centers, libraries, nursing homes, and other locations frequented by seniors. It uses a mobile computer system to issue a physical driver's license to seniors on site. It includes the "Rules of the Road" program that discusses the most common driving laws, and an on-site vision test.

Rules of the Road Program, Illinois
This program, which is also part of the Super Seniors program, may be presented by itself to groups that would like to update their knowledge of driving laws and/or prepare for the state's written test.

[33]http://www.ghsa.org, accessed October 24, 2012.
[34]http://www.ghsa.org, accessed October 24, 2012.
[35]http://www.ghsa.org, accessed October 24, 2012.
[36]http://www.ghsa.org, accessed October 24, 2012.

Choices not Chances Program, Iowa
This program includes a video and accompanying print materials presented by Iowa DOT staff members throughout the state. The state has partnered with other organizations that serve seniors to ensure that as many people as possible receive the information.

Shifting Gears Program, Massachusetts
This hour-long safe driving for seniors program is presented throughout the state, often at senior centers, although other organizations can also request the program. The program is an interactive workshop with a formal presentation and ample question and answer time. The state has produced various materials, such as brochures on safe driving and senior health, that are also available to participants.

How Safe Is Your Driving Brochure, Nebraska
This brochure is mailed with all driver license renewal notices. The brochure includes information about aging's effect on driving ability and a self assessment quiz.

Health in the Driver's Seat Program, Quebec
This program and its associated booklet are distributed through public presentations at community social organizations.

Motor Vehicle Commission Speakers Bureau, New Jersey
The speakers bureau is available to give presentations to groups on driving issues related to seniors.

Senior Ombudsman Program, California
Four ombudsmen are located in various parts of the state to represent public safety with a special interest in addressing the concerns of seniors. These ombudsmen can assist with individual cases and can make group presentations regarding senior driving issues.

6.6.2 Senior Driving Websites

A number of states have sections of their website dedicated to issues related to mature drivers. Links to sample sites and lists of the type of information available on each site follow.

California Senior Driver
http://www.dmv.ca.gov/about/senior/senior_top.htm

- Driving guides
- License renewal
- Mature driver improvement programs
- Health and driving guides
- Self assessment
- Senior Ombudsman Program
- Alternative transportation
- Outside resources

Delaware Senior Drivers
http://www.dmv.de.gov/services/driver_services/senior/index.shtml

- Driving guides
- Health and driving guides
- Self assessments
- Car fit programs
- Brain games
- Outside resources

Florida GrandDriver Program
http://www.flhsmv.gov/FloridaGrandDriver

- Driving guides
- Carfit programs
- Self evaluation
- Driver refresher courses
- License renewal
- Links to other resources

Florida Safe and Mobile Seniors
http://www.safeandmobileseniors.org/

- Driving guides
- Carfit programs
- Health and driving guides
- License renewal
- Roadway design and markings information
- Vehicle choice
- Driving laws
- Alternative transportation
- Outside resources

New York Resources for the Older Driver
http://www.dmv.ny.gov/olderdriver/od_contacts.htm

- Self assessment
- Driving guides
- Health and driving guides
- License renewal
- Carfit program
- Outside resources

Oregon Drivers 50+
http://www.oregon.gov/odot/dmv/50plus/pages/index.aspx

- Driving guides
- Health and driving guides
- Self assessment
- Alternative transportation
- License renewal
- Roadway and vehicle information
- Outside resources

Washington, D.C., Senior Driver Information
http://dmv.dc.gov/page/senior-driver-information-0

- License renewal
- Defensive driving courses
- Outside resources

7. Findings

The TAC Driver Education study team has researched the current state of driver education in Pennsylvania, reviewed national research and studies done on the effectiveness of driver education, and compiled individual state driver education practices that appear to have positive potential. Using this body of information, the study team has distilled several key findings regarding driver education, graduated driver licensing, and continuing education for drivers. These findings represent the most relevant points of information from the interviews and research conducted by the study team.

7.1 Novice Teen Driver Education

Research to date has not been able to conclusively prove that driver education results in safer drivers.
Although many studies have been conducted over the years, research to date has not been able to establish an undisputed link between driver education and a reduction in crashes. Studies have produced varying results and positive results have not always been followed up with additional studies to validate the findings. There are many reasons why driver education, by itself, has not produced a reduction in crashes. Some of these reasons are:

- Crashes are complex events with multiple and intertwining causes.
- Driver behavior, especially in teens, is influenced by many factors.
- The amount of time spent in driver education is not adequate to have a significant impact on driving habits.
- The majority of learning regarding safety and risk avoidance takes place after a new driver masters the basics of operating a vehicle. At this stage a new driver has typically completed driver education and is already licensed.

Crash reduction for new drivers cannot be accomplished with a single solution or countermeasure. Driver education, however, can be an important piece of a multi-part strategy.

Skills to overcome common causes of accidents can be taught.
The three most common causes of crashes for young drivers are failures in visual scanning, errors in attention, and failure to adjust speed relative to conditions. While general driver education has not shown a reduction in crashes, researchers have created educational methods and tools that can be used to train drivers to avoid these causes of crashes. These tools are not in widespread use and haven't been evaluated to see if crashes have actually been reduced. Researchers have, however, been able to test participants' skills pre- and post-training and have been able to demonstrate significant improvement in attention maintenance and visual scanning that persists over time. Widespread adoption of these methods into driver education may help driver education show a crash reduction.

The number of high schools offering driver education is declining.
After peaking in the late 1970s and early 1980s, the number of high schools offering driver education has been in a long decline. The cause of the decline is related to evidence that driver education has no effect on crash rates, ongoing school budget pressure, and the push to eliminate programs that aren't part of the core curriculum that students are tested on (and are used to measure a school's performance). In Pennsylvania, the recent drop in schools offering driver education has been significant, with 372 school districts offering driver education in 2004-05 and only 261 offering it in 2012-13—a decline of 30 percent. This reduction has been countered somewhat by an increase in private driver education.

Parents want driver education in high schools.
Despite the lack of scientific evidence that driver education produces safer drivers, parents continue to want their children to take a driver education class. When elimination of driver education is proposed, parents often speak out in favor keeping the program.

The actual cost of driver education is in the range of $350 to $600 per student.
Driver education costs are significant and are especially problematic for school districts facing financial challenges. In Pennsylvania, the state offers to reimburse school districts $35 per student, but only if the student is charged no more than $50 for the driver education course. These dollar amounts were mandated by the Pennsylvania State Legislature in 1952 and have not changed since that time. The combined $85 in revenue per student does not come close to covering the costs of driver education. As a result, many schools are choosing to forgo the state reimbursement so they have the option to charge more than $50 per student for the program. Participation in the reimbursement program has been dropping precipitously. While the total number of schools offering driver education declined by 30 percent from 2004-05 to 2012-13, the number of schools seeking reimbursement fell much more dramatically—49 percent. As a result, schools are not using the entire amount allotted by the Commonwealth of Pennsylvania for driver education reimbursement.

Pennsylvania's driver education content standards are less specific than national standards.
Content standards describe the desired outcomes of driver education and are used to measure each school's driver education curriculum. The national Novice Teen Driver Education and Training Administrative Standards (NTDETAS) recognize two content standards, which each specify many of the same items. Each of these content standards specifies the outcomes and expectations in much greater detail than the Pennsylvania Content and Performance Expectations for Driver Education. These national standards provide a more precise instrument to measure the adequacy of each school's curriculum.

Driver education program administration in Pennsylvania is split between the Department of Education and the Department of Transportation.
Both the Department of Education and the Department of Transportation have administrative duties in the process of educating drivers. The Department of Education is largely responsible for driver education for new drivers, with these functions funded by the Pennsylvania Motor License Fund. PennDOT is responsible for testing and licensing drivers, and for the Point System—a series of examinations, hearings, and sanctions that serve as a driver education tool—as well as for educational programs for mature drivers and for managing road safety grants and various road safety outreach efforts.

Some states are providing a renewed focus on driver education.
In some states, the implementation of GDL programs as well as online and social media, which have publicized teen driver fatalities at record pace, have provided a springboard for a renewed interest in improving driver education. A total of seven states have participated in NHTSA's Driver Education Program Technical Assessment that involves a team of experts to analyze and make recommendations to improve the driver education program. These states are trying to address crash reduction for new drivers in a holistic fashion that confronts the problem on a number of different fronts, including driver education. Oregon, which appears to be the national leader in enhanced driver education, has provided additional funding for classes in high school and has created goals, an action plan, and performance measures for driver education.

7.2 Graduated Driver Licensing (GDL)

Research has proven that GDL programs have reduced crashes for young drivers.
Unlike driver education, GDL programs have produced statistically significant reductions in crashes and fatalities. Pennsylvania's five-year average fatality rate for 16- and 17-year-olds has declined approximately 40 percent over the years since the introduction of GDL. GDL is effective because it regulates the most hazardous driving situations for teen drivers, namely the age at which a teen starts driving, driving during overnight hours, and driving with teen passengers.

Parents are considered to be the principal enforcers of GDL regulations.
While GDL enables law enforcement to cite violators, the principal enforcement of these laws is accomplished by parents rather than police officers. Unfortunately, a survey conducted in late 2012 by Allstate Insurance indicated that many parents do not know all of the restrictions in Pennsylvania's GDL laws. The survey also showed that many teens themselves cannot accurately identify GDL regulations. This lack of understanding reduces compliance with GDL laws and limits parents' ability to enforce the appropriate restrictions.

Earlier licensing due to driver education reduces safety.
Pennsylvania's GDL program typically issues a full, unrestricted license to teen drivers at age 18. If certain conditions are met, the unrestricted license can be obtained early—at age 17½. Obtaining a license early requires maintaining a crash- and conviction-free record for 12 months and completing an approved driver education course. Allowing new drivers to obtain an unrestricted license six months early by taking a driver education course actually reduces safety and is linked to a greater probability of crashing. This is presumably because standard driver education has not been shown to confer any safety benefits to new drivers, and early licensure allows new drivers to drive without the GDL restrictions—such as passenger limits and curfews—which have been proven to reduce crashes.

7.3 Continuous Learning/Mature Drivers

The number of older drivers is increasing and will continue to increase.
The 2010 U.S. Census identified almost two million Pennsylvanians age 65 and older. U.S. Census Bureau projections show that from 2000 to 2030 the population age 65 and older will increase by almost one million people, an increase of more than 50 percent. Many of these older residents will continue to maintain their license and drive. While older drivers often experience deterioration in eyesight, reflexes, and physical strength and mobility, they often modify their driving behaviors to accommodate these factors. This helps to keep their crash rate in check. However, for seniors who continue to drive, crash rates begin to climb around age 75 as the aging process takes a greater toll on driving abilities.

The Pennsylvania medical testing program is a national best practice.
PennDOT conducts a random retesting program for existing licensed drivers. Each month, 1,900 drivers over the age of 45 are chosen for retesting six months prior to the date of their driver's license renewal. Each selected driver is required to undergo vision and physical examinations. In addition to this random testing, Pennsylvania law requires that health care personnel report to PennDOT any patient 15 years of age or older who has been diagnosed as having a condition that could impair his or her ability to safely operate a motor vehicle. These two regulations have been recognized in research literature as a national model for ensuring that drivers are medically fit for driving.

Pennsylvania offers mature driving courses, but there are few proactive driver education programs aimed at drivers between 18 and 55 years old.
Most driver education is focused on teaching teens how to operate a vehicle. Teens are given an incentive to take driver education through discounts offered by insurance companies and the ability to earn an unrestricted license at age 17½ instead of 18. Driving courses for those age 55 and older are also offered and come with the incentive of a five percent state-mandated insurance discount. Those between the ages of 18 and 55 have no specific proactive educational program designed to keep them up-to-date on law changes and the evolving nature of best driving practices.

Pennsylvania's point system for drivers functions as a driver education tool with multiple driving violations.
When a driver is convicted of violations and accumulates six points on his or her driving record, the driver is sent a driver study manual and must go to a PennDOT Driver Licensing Center prepared to take and pass a special point examination. The manual and exam force the driver to review safe driving practices. If the driver again has convictions and accumulates an additional six points, he or she must attend a PennDOT hearing, where the hearing examiner reviews the driver's record and counsels the driver on safe driving practices. A 15-day license suspension is one possible outcome after the hearing. If a driver amasses six points for a third time, he or she must again attend a PennDOT hearing for a further driving record review and additional counseling. A 30-day license suspension is one possible outcome of this second round of hearings. In addition, drivers convicted of speeding in excess of 31 miles per hour over the limit must attend a PennDOT hearing for a driving record review and counseling. One possible outcome is a 15-day license suspension.

8. Recommendations

Based on the research completed, and its understanding of the issues, the task force recommends a number of improvements to the driver education process in Pennsylvania. These recommendations follow in both text and a summary table.

8.1 Recommendation Descriptions

Teen Driver Education Programs

Consider eliminating the cap of $50 that school districts may charge students for driver education in order to receive the $35 per student reimbursement from the state.
The driver education reimbursement established by the Pennsylvania State Legislature in 1952 was intended to reimburse schools for a significant portion of their costs associated with driver education. In the intervening 60 years, inflation has increased the actual costs of a driver education program, which are in the hundreds of dollars per student. Accordingly, the $50 maximum charge for students is obsolete and an impediment to schools seeking reimbursement. By eliminating the $50 cap, any school that offers an approved driver education program would be eligible for the $35 per student reimbursement. This amount would not fully fund a driver education program, but it may stabilize funding in a school and could make the difference in that school keeping or eliminating the program. This recommendation, which would require a legislative change, would have an impact on the Motor License Fund (MLF), since funding for school reimbursement comes from the MLF.

The Department of Education should update the content and the level of detail in Pennsylvania's "Content and Performance Expectations for Driver Education" to align with the model curriculum standards.
The NTDETAS recognizes two curriculum standards for ensuring that the content of a driver education course teaches all relevant topics. One of the standards was created by the ADTSEA and the other was created by DSAA. Both standards require the same general material, but present it in a slightly different fashion. In both cases, the level of detail presented is greater than that of Pennsylvania's "Content and Performance Expectations for Driver Education." By adopting one of these standards, or some combination of the two, Pennsylvania will have a more precise instrument with which to judge the driver education courses taught in Pennsylvania high schools.

The Department of Education should review the curriculum of each school against the state standard at regular intervals on an ongoing basis.
Once the driver education curriculum standards are updated, they should be used to proactively evaluate each driver education program at specified intervals. Currently, schools submit curricula for review only when they begin using a new curriculum or when they modify their existing one. A proactive approach would involve reviewing each school's curriculum at regular intervals, such as every three to five years. This would create additional burdens on the Department of

Education's driver education program administrators, therefore, efficiency in this process is vital. Every effort must be made to conduct these reviews without time-intensive processes.

The Department of Education should establish administrative expectations and performance metrics for driver education programs.
The NTDETAS contains model administrative standards for driver education. These standards are developed around the following focus areas:

- Program Administration
- Education Standards
- Instructor Qualifications
- Parent/Guardian Involvement
- Coordination with Driver Licensing

Administrative standards or expectations for Driver Education in Pennsylvania should be crafted based on the model. The standards would set forth the ideals of how a driver education program should be run to ensure the quality of the program.

The Department of Education should conduct an on-site audit of each school's driver education administration, courses, instructors, facilities, and equipment on a regular and ongoing basis.
Using the administrative standards adopted as part of the previous recommendation, school site visits should be conducted on a regular basis, such as every three to five years. These site visits could happen concurrently with the curriculum review recommended previously. Several states currently conduct on-site audits, and Oregon notably has recently implemented an on-site audit program. Processes exist in other states for conducting these audits efficiently and should be modeled when developing Pennsylvania's audit program.

The Department of Education should develop updated driver education instructor training and certification standards that are uniform for public and private school instructors.
Driver education instructor certification is not currently uniform among public and private schools. Driver education is best taught by well-qualified instructors, and the quality of instructor should be uniform across schools. More importantly, instructors are not required to attend any continuing education or to become recertified. Ongoing education for instructors would help make sure that they all employ the most up-to-date methods and teach the current best practices to students.

The Department of Education should require a parent orientation meeting as part of approved driver education courses.
Parents are the primary enforcers of GDL restrictions. However, as revealed by a recent survey, many parents do not know fully understand Pennsylvania's GDL laws and its restrictions. Parent orientation would provide an overview of the GDL laws, better enabling parents to supervise their teen and be the first line of support when it comes to encouraging compliance with teen driving laws and adopting safe driving practices. The orientation meeting can also be used to help set a tone for the learning process and provide information on the most important driving skills to practice with their teen drivers.

The Department of Education should require driver education programs to complete a debriefing with the parents or to provide a debriefing report from the instructor.
A debriefing meeting or report would close the loop between instructor and parent, ensuring that the parents know the teen's strengths and weaknesses and can continue instruction where the driver education instructor left off. In particular, such communication can alert parents to particular skills or habits that should be practiced prior to taking the licensing exam.

Support national efforts to create a full complement of model driver education administrative standards and to update curriculum standards.
To the extent possible, PennDOT and the Pennsylvania Department of Education should support the efforts of the Association of National Stakeholders in Traffic Safety Education (ANSTSE), which is the organization actively involved in creating and maintaining the NTDETAS standards. This group appears to have momentum in modernizing driver education standards and promoting educational techniques that could help in reducing crashes and fatalities in teen drivers.

Graduated Driver Licensing

PennDOT should develop a new Parent's Supervised Driving Guide as a key resource to parents during the GDL process.
The introduction of such a resource could supplement or replace the current PennDOT tutor's guide. The guide should assist in bringing parents into the driver education and GDL process with professional materials and program direction. It should also aid in parent understanding of the entire GDL process and benefits. This new guide can be modeled after successful efforts in a number of states, and can be offered through several media options. The guide can be developed and distributed through a public-private partnership.

Require driver education and GDL restrictions for all new drivers, regardless of age.
Current GDL restrictions apply only to those Pennsylvania residents under age 18. Some teens have chosen to delay licensure until after they turn 18 in order to avoid the GDL restrictions. Similarly, adults who have never had a driver's license can obtain a permit and then a license without ever having to take a driver education course or being subject to GDL restrictions. Some areas of the world, especially Europe, recognize that all new drivers have a need for quality training regardless of age. This would require a legislative change to the GDL requirements.

PennDOT should require submission of a completed logbook at the time of the driver's exam.
Pennsylvania's current GDL law requires that a teen driver complete at least 65 hours of supervised practical driving experience, including 10 hours of nighttime driving and 5 hours of inclement weather driving. A parent or guardian must certify (Form DL-180C) that the young driver has fulfilled this requirement. However, there is no requirement to keep a log of the 65 hours. It is suggested that a logbook be required to record the driving experience and that such logbook be submitted at the time of the driver's exam.

Continual Learning/Mature Drivers

PennDOT should publicize changes in driving laws and safe driving tips using television monitors in Driver Licensing Centers.
Television monitors are currently in use in 20 Driver Licensing Centers by the Pennsylvania Organ Donation Program to publicize organ donation. The monitors run a DVD loop of information regarding organ donation. The PA Organ Donation Program has offered to allow PennDOT to include driver information on the DVD loop. Partnering with the PA Organ Donation Program could provide benefits to both organizations, sharing resources to allow the rapid adoption of this program throughout the state. This option could also involve a public-private partnership with a business entity to fund additional television monitors.

PennDOT should fully embrace social media and other recent technology to communicate and promote law changes and safe driving practices.
PennDOT is currently engaged in the use of social media and technology to some extent. PennDOT should continue to explore the best practices of social media use for government agencies and adapt those practices for use in continuing driver education and safety.

PennDOT should enhance its information for older drivers.
PennDOT's current Older Driver Information Center webpage contains information relevant to older drivers. However, some other states have created older driver webpages that have an expanded range of information presented in a very visual format. The state of Florida, most notably, has more than one website dedicated to older drivers. Both websites are located outside of the Department of Transportation and the Department of Highway Safety and Motor Vehicles websites. This allows them more freedom in web design and presentation. Additional methods to convey information should also be explored, including brochures, for this population segment that may be the least computer-oriented. These initiatives could provide opportunities for partnerships with other organizations serving seniors or interested private parties in order to reduce costs and expand the message.

Other

Track ongoing driver education research.
Additional driver education research continues today. The Department of Education and PennDOT should identify relevant active research projects. The results of the studies should be evaluated for their potential to inform future enhancements of driver education programs. Known research studies currently underway include the following:

AAA Foundation for Traffic Safety

Large Scale Evaluation of Beginner Driver Education Programs
This project, the most comprehensive study of driver education undertaken since the mid-1980s, will determine whether driver education is producing the desired safety outcomes and will examine which program aspects are effective and which are not effective.

Survey of 18- to 21-Year-Olds about Graduated Driver Licensing Issues
This project will involve a national survey of 18- to 21-year-olds about their experiences with GDL. Key topics of interest include ascertaining whether significant numbers of teens are delaying licensure to avoid GDL restrictions, attitudes toward GDL restrictions, and support for GDL restrictions.

Developing an Evidence-based Approach for Improving Parental Supervision of Novice Drivers
Parental involvement classes are still new and relatively uncommon. This project will provide research into the content and course delivery methods that will make these sessions as effective as possible.

State Motor Vehicle License Renewal Policies and Fatal Crash Rates of Older Drivers
This project will analyze state-by-state crash data to estimate the effectiveness of state motor vehicle license renewal policies and laws on the crash involvement rates of older drivers.

The Children's Hospital of Philadelphia Research Institute

Young Driver Research Initiative (YDRI)
The Young Driver Research Initiative (YDRI) is a unique academic-industry alliance between The Children's Hospital of Philadelphia Research Institute and State Farm Insurance Companies. Recent research has dedicated specific efforts toward understanding how to optimize the learning-to-drive experience of young drivers.

Evaluation of an Online Training Program Designed to Prevent Young Driver Crashes
The research team is using a high-fidelity driving simulator to learn what improves and impairs safe driving performance and behavior under a wide variety of driving conditions. A series of studies is underway to develop and validate new simulator methods and then to put them to use in the evaluation of online training programs.

Increasing Tacit Knowledge of Driving Hazards, Risk Assessment, and Crash Mitigating Factors
This project will design a web-based training program to improve driver safety by helping drivers understand hazards, more accurately assess their risk associated with hazards, and take the appropriate actions in response to the presence of hazards.

8.2 Recommendations Matrix

In the matrix below, recommendations are grouped by the likely timeframe in which they could be implemented. These timeframes offer a guide for the order in which recommendations should be pursued, with the near-term recommendations being a high priority with less complexity. It is suggested that medium-term and long-term recommendations should also be given consideration, but their greater complexity and need for stakeholder/partner input will make their actual implementation further in the future.

In general, the timeframes should be interpreted as follows:

- Near-term – less than one year
- Medium-term – one to five years
- Long-term – greater than five years

No.	Recommendation	Timeframe
1	PennDOT should develop a new Parent's Supervised Driving Guide as a key resource to parents during the GDL process.	Near-term
2	PennDOT should publicize changes in driving laws and safe driving tips using television monitors in Driver Licensing Centers.	Near-term
3	PennDOT should fully embrace social media and other recent technology to communicate and promote law changes and safe driving practices.	Near-term
4	Consider eliminating the cap of $50 that school districts may charge students for driver education in order to receive the $35 per student reimbursement from the state.	Medium-term
5	The Department of Education should update the content and the level of detail in Pennsylvania's "Content and Performance Expectations for Driver Education" to align with the model curriculum standards.	Medium-term
6	The Department of Education should establish administrative expectations and performance metrics for driver education programs.	Medium-term
7	The Department of Education should require a parent orientation meeting as part of approved driver education courses.	Medium-term
8	The Department of Education should require driver education programs to complete a debriefing with the parents or to provide a debriefing report from the instructor.	Medium-term
9	PennDOT should enhance its information for older drivers.	Medium-term

10	The Department of Education should review the curriculum of each school against the state standard at regular intervals on an ongoing basis.	Long-term
11	The Department of Education should conduct an on-site audit of each school's driver education administration, courses, instructors, facilities, and equipment on a regular and ongoing basis.	Long-term
12	The Department of Education should develop updated driver education instructor training and certification standards that are uniform for public and private school instructors.	Long-term
13	Require driver education and GDL restrictions for all new drivers, regardless of age.	Long-term
14	PennDOT should require submission of a completed logbook at the time of the driver's exam.	Long-term
15	Support national efforts to create a full complement of model driver education administrative standards and to update curriculum standards.	Ongoing
16	Track ongoing Driver Education research	Ongoing

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