

**The Detrimental Impact of the
Eastern Time Zone
in Indiana -
its Students, their Education,
their Communities**

Central Time Coalition

www.hoosiersforcentraltime.com

Introduction

Citizens all over Indiana are discouraged by reports we read in newspapers and hear on the television. Indiana's students are under-achieving academically. Teachers are falsely being blamed. Indianapolis is experiencing a crime wave of senseless shootings by young people. Hoosiers are increasingly obese and less physically fit. Is there a single culprit? No. Is there a common factor that is contributing to all of these? Yes.

The following report evaluates that "common factor" – the sunlight schedule of the Eastern Time Zone designation in Indiana - and examines how it is compromising students' education and their safety. This report documents the enormous waste in millions of tax dollars annually caused by school delays and how these could be cut in half and possibly eliminated altogether.

While the longitudinal boundaries of the earth's twenty-four time zones are based on the position of the sun, actual time zone boundaries are determined by governmental decree. Indiana's original time zone designation was the Central Time Zone, however, in the mid-1960's, eighty Indiana counties were re-designated from the Central Time Zone to the Eastern Time Zone so that civil clocks would read the same as those in television studios and financial centers on the East Coast. Today, digitization and e-technology provide instant delivery of television and business transactions, rendering any advantage of still being on Eastern Time questionable.

Senate Bill 127 was passed in 2005 with the goal of resolving Indiana's "time controversy". It had two steps, the first of which required all counties to observe daylight saving time. The second step urged Governor Daniels to petition USDOT to hold hearings to determine the correct time zone for each of Indiana's 92 counties. USDOT replied that this wasn't their job – the Indiana legislature or governor should determine the location of the time zone boundary and then bring a request it to them. This was never done.

While the Central Time Coalition supports the observance of daylight saving time (DST), we strongly urge the legislature and governor to complete the provisions approved in SB127 by appointing a special legislative study committee to conduct a thorough evaluation to determine which time zone designation will provide the citizens of each of Indiana's 92 counties with the greatest amount of "peace, safety and well-being".

Hoosiers have waited ten years for the issues to be heard, during which time we've watched Indiana consistently fall behind the rest of the USA in too many areas, the most disconcerting being those that involve our children - their education, safety, and well-being. They deserve better.

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The mission of the Central Time Coalition is to promote the allocation of available sunlight and darkness in a manner that provides the greatest peace, safety and well-being for the citizens of Indiana.

School Start Times for Adolescents

Policy Statement Summary
American Academy of Pediatrics
Released August 25, 2014

“Recognizing that insufficient sleep in adolescents is an important public health issue that significantly affects the health and safety, as well as academic success, the American Academy of Pediatrics strongly supports efforts of school districts to optimize sleep in students and urges high schools and middle schools to aim for start times no earlier than 8:30 a.m. to allow students the opportunity to achieve optimal levels of sleep (8.5–9.5 hours) and to improve physical and mental health, safety, academic performance, and quality of life.”

“Although the AAP acknowledges that numerous factors may impair the amount and/or quality of sleep in adolescents - among them, biological changes in sleep associated with puberty, lifestyle choices, and academic demands - it considers school start times before 8:30 a.m. (earlier school start times) to be a key modifiable contributor to insufficient sleep, together with circadian rhythm disruption.” “

“It also recognizes that a substantial body of research has demonstrated that delaying the start of the school day is an effective countermeasure to chronic sleep loss and has a wide range of potential benefits to the physical and mental health, safety, and academic achievement of students - including reduced obesity risk, rates of depression, and drowsy driving crashes as well as improved academic performance and quality of life.”

Note: Indiana’s original, longitudinally correct, time zone is the Central Time Zone. AAP’s school start time recommendations are based on the effects of the natural sunlight schedule within time zones. Because Indiana’s Eastern Time Zone civil clocks are one-hour ahead of their correct Central Time sunlight schedule, for Indiana’s Eastern Time Zone school districts to meet AAP’s recommendation schools would need to start no earlier than 9:30 a.m.

A school start time of 9:30 a.m. is impractical for many reasons, after-school activities being only one of those reasons. Therefore, as long as Eastern Time is observed in Indiana, schools will never be able to start at a time that is ideal for students’ learning. However, by restoring Indiana to its Central Time Zone’s natural sunlight schedule, all students and teachers would benefit by having one more hour of sunlight in the morning, no matter their age. The majority of travel to and from school would be in daylight, and students would be awake and alert when school begins.

Morning Darkness Undermines Education

Morning darkness is a barrier to classroom learning

“Middle school and high schools should not start before 8:30 a.m.” American Academy of Pediatrics 2014

- Since the 8:30 a.m. start time recommendation is based on the natural sunlight schedule within a time zone, start times for Indiana’s Eastern Time school districts should be 9:30 a.m.
- Circadian rhythms are based on the 24 hour sunlight schedule that tells us when to sleep, when to wake, and dictates student’s readiness to learn.
- During puberty, students’ biological clocks shift 1½ hours later and teens can’t fall asleep much before 11 p.m. Since they need 8 1/2-9 1/2 hours of sleep, most teens are chronically fatigued.
- Because of multi-tier bus routes, high schools tend to have the earliest start time in most school districts.
- Example of earliest school start times in Marion County school districts in 2013-2014

Franklin Twp. Middle School	7:10 a.m.
Pike Twp. High School	7:15 a.m.
IPS Middle & High Schools	7:20 a.m.
Warren Twp. High School	7:20 a.m.
Decatur Twp. High School	7:20 a.m.
North Central High School	7:25 a.m.
Perry Twp. High School	7:25 a.m.
Wayne Twp. High School	7:30 a.m.
Lawrence Twp. Elementary	8:00 a.m.
EASTERN TIME SUNRISE as late as	8:15 a.m.
- On Eastern Time, sunrise is as late as 8:15 a.m., and many students will have been up for almost 3 hours and have completed their first period of school before sunrise.
- On Central Time Indiana’s latest sunrise would be 7:15 a.m. providing the benefit to students of being mentally awake and ready to learn when classes begin.
- Indiana students will never be able to achieve at their academic potential until Indiana’s sunlight schedule is more compatible with their biological needs.

Morning darkness promotes chronic absenteeism in Indiana

“In Indiana, attendance is a key factor in promoting academic achievement for students of all ages and demographic backgrounds.” Attendance and Chronic Absenteeism in Indiana 2012

- 55,000 Indiana students are chronically absent from school each year, the majority due to truancy.
- School buses all over Indiana begin picking up students around 6 a.m. It is painful for students and parents to get up early enough to meet the demands of this morning schedule. Too often parents are not available or don’t care enough to get students out the door on time.
- Morning darkness, exacerbated by early start times, promotes truancy which causes students to fall behind, become discouraged, and eventually drop out.
- **Morning darkness is a barrier to regular school attendance.**

Morning darkness contributes to crime

- Students who drop out are undereducated, un-employable, and handicapped for life.

Morning Darkness is Unsafe for Students

Dark streets are unsafe whatever the time of day

- Morning darkness is not only unsafe, it is frightening. For many students, the school experience starts out as a big negative because of having to face darkness every morning.
- Most Indianapolis high school students travel to school in darkness three-fourths of the school year.
- Elementary students travel to school in darkness one-third to one-half of the school year.
- On Central Time the latest sunrise would be 7:15 a.m., providing daylight for almost all travel to and from school.

Darkness reduces visibility

In the last five years:

- Six Eastern Time students have been killed by moving vehicles before sunrise.
- Nineteen students have been seriously injured when struck before sunrise.
- According to the Indiana State School Bus Drivers Association, on dark and/or foggy mornings it is very difficult for drivers to distinguish between a small child and a bag of trash!

Predators prey in darkness

Since 2007, Indiana news media has reported:

- Seven girls raped before sunrise – 3 of whom were 12 years old.
- Eighteen abductions were attempted before sunrise.
- Ten students have been assaulted and robbed before sunrise.
- Numerous other incidents go unreported, according to police officials.

Indiana teen drivers have the highest crash death rates in the US

- Indiana's late sunsets and dark mornings mean that most teens are sleep-deprived.
- Lack of sleep, combined with driving to school in the dark, is deadly for Indiana teens.

Eastern Time in Indiana violates students' right to safety

- Indiana Constitution, Article 1, Bill of Rights, Section 1 states: *WE DECLARE, that all people are created equal; that they are endowed by their creator with certain inalienable rights; that among these are life, liberty, and the pursuit of happiness; that all power is inherent in the People; and that *all free governments are, and of right ought to be, founded on their authority, and instituted for their peace, safety, and well-being.**
- Eastern Time forces 850,000 students to be pedestrians in the dark for the majority of their school year. Indiana is failing in its promise to keep our children safe. Worst of all, **our students have no choice.**

International Walk to School Day on October 8, 2014 was unsafe in Indiana!

- Sunrise in Indianapolis on International Walk to School Day occurred at 7:48 a.m.
- It was unsafe for Indiana's students to participate because of morning darkness.
- On Central Time, Indianapolis sunrise would have been at 6:48 a.m. and it would have been safe for Indiana's students to have participated in this annual event.

School Delays Waste Money and Education

Morning darkness cause school delays

- The hour before sunrise is the coldest time of the day. Sunrise prompts temperatures to rise causing fog to dissipate and ice to melt.
- School districts in Indiana's Eastern Time Zone have excessive numbers of two-hour school delays.

School delays waste millions of education dollars each year

- A conservative cost of teachers' salaries is \$7 per student per hour.
- On delay days, teachers are paid while classrooms are empty and students are waiting at home for travel to become safe. This equates to wasted education dollars.
- In 2013-2014 alone, \$101,000,000 budgeted by Eastern Time school districts for classroom education was wasted by school delays.

Quality and quantity of learning is severely compromised on delay days.

- Most teachers consider "delay days" lost educationally: schedules are rearranged, class periods are shortened, and students have difficulty focusing.
- More students are absent on delay days than on full-length days.
- Whether absent or just not focused, according to many teachers, students require a repeat of class content following a delay day.
- Unlike two-hour delay days, school cancellations are considered cost-neutral both financially and educationally because cancellations are rescheduled.

On Central Time school delays could be restricted to 1-hour delays

- This would cut the amount of money wasted and lost classroom time in half.
- Several Indiana schools districts are calling for 3-hour delays and extending the day by one hour so that they can reduce the amount of lost classroom instruction to 2 hours.
- On Central Time it could be possible to restrict delays to only one hour and extend the school day by one hour, thus eliminating all lost classroom time. Students would still be delivered home before dark.

School delays have a significant financial cost to businesses and employees.

- Children at home on a school delay-day need supervision causing parents to cancel appointments or business meetings and deadlines to be missed or delayed. This costs someone.
- Often working parents have to miss work – either partly or all day – without pay.

Indiana's Students are Victims of Indiana's Sunlight Schedule

Teen Driving Deaths - Indiana Ranks No. 1 Why is this?

- A study released in 2008 gives clues to the cause of Indiana's high teen driving death rates.
- In school year 1998-1999, the Fayette County School District (which includes Lexington, KY) changed the start time of their high schools from 7:30 a.m. to 8:30 a.m.
- A study conducted in 2008, by researchers at the University of Kentucky, is entitled "*Adolescent Sleep, School Start Times, and Teen Motor Vehicle Crashes*" in which student crash rates in the 1998-1999 school year were compared with those in the 1999-2000 school year. The study showed a 16.5% drop in teen crash rates. In the same time period crash rates for all of Kentucky rose by +7.5%.
- An additional factor that adds to the significance of these statistics is the fact that by moving the start time of school to 8:30 a.m., teens were now driving to school in the morning peak traffic time, whereas, previously their drive to school had occurred prior to the morning peak traffic time.
- How does this relate to Indiana's teen crash rates? Sunrise in Fayette Co., KY occurs 5 minutes prior to sunrise in Indianapolis. As far as sunlight is concerned, changing the start time from 7:30 a.m. to 8:30 a.m. in Fayette Co., KY was the equivalent of changing from Eastern Time Zone to Central Time Zone. Not only did this mean that teens were more rested because they were getting one more hour of sleep in the morning, it also meant that they were now driving to school in daylight every day instead of the dark.

Youth Suicide - 2nd Leading Cause of Death for Indiana Youths

- Suicide is the second-leading cause of death for Indiana youths between ages 15 and 24.
- According to the Indiana Youth Institute, in a national survey Indiana has the highest rate of students who have contemplated suicide (19%).
- Indiana has the nation's second-highest rate of high school students who have attempted suicide (11%).
- We suggest the following contributing factors.
 - ✓ Indiana's Eastern Time teens are chronically sleep-deprived.
 - ✓ Teens are under constant pressure to perform academically in a sunlight schedule that prompts their biological clocks to fight against their school performance.
 - ✓ Research shows that there is a higher incident of winter depression on the western edge of a time zone than on the eastern edge. All of Indiana is substantially west of the geographical western edge of the Eastern Time Zone.
 - ✓ Students who have to get out of bed 1-3 hours before sunrise and then travel in the dark to school are trapped in a painful schedule that they can't get out of. Unlike adults, students have no control over the demands this schedule puts on them.

Eastern Time's Effect on the Well-Being of Hoosiers

Eastern Time has not benefitted Hoosier wage earners.

- Indiana's median family income dropped from \$78,599 in 2000 to \$57,148 in 2011. This was the second largest decrease in the nation.
- In 2000, Indiana had the 12th lowest poverty rate in the nation, but by 2011 the poverty rate had risen to the 34th highest in the nation.
- One in six Hoosiers are living at the "poverty level". One in three Hoosiers are living at the "low income level".
- The education level of Indiana's workforce now ranks 42nd in the US.

The time zone boundary divides 18 Indiana counties (800,000 Hoosiers) from adjacent Indiana counties

- This causes untold hardships in the daily lives of those individuals and families.
- It complicates participation and attendance of interschool activities.
- The time difference complicates interaction for businesses and workdays for their employees.

Indiana is the 8th most obese state in the US and Hoosiers are among the least physically fit.

- Morning darkness makes walking, jogging, and cycling unsafe.
- While exercising in the morning is energizing, exercising at the end of the workday is often impractical due to personal and family responsibilities, as well as fatigue.

Millions of Hoosiers are inconvenienced because nationally televised events, prime-time programming and local news are broadcast one hour later than they would be on Central Time.

- Hoosier sport fans frequently cannot afford to stay up to watch the outcomes of sporting events and news.

Traditional family summertime activities dependent on darkness are either diminished or eliminated by Eastern Time's late sunsets.

- Campgrounds don't quiet down until it gets dark. Enjoyment of campfires cannot occur until the sun goes down. Waiting until dark at 9:30-10:00 p.m. is impractical for children.
- Indiana's children are growing up without watching stars and catching lightning bugs.
- Summer bedtimes are especially difficult because it is still daylight so late.
- After a full day of activities, the July 4th fireworks celebration at 10:00 p.m. is not family-friendly. An hour earlier would be much better.

Eastern Time's late sunrise schedule causes inconveniences for specific occupation groups.

- Commercial construction workers (90,000 Hoosiers) prefer a 7 a.m. to 3:30 p.m. workday because it allows them to avoid peak travel times and have personal/family time at the end of the day.
- The workday for farmers, lawn and landscape businesses, and golf courses is delayed until sunlight creates favorable conditions.
- While Indiana's 45,000 Amish embrace a simple lifestyle that is dependent for light from the sun, their lives are complicated by their need to also interact within the parameters of their community's civil time.

Eastern Time is Detrimental to Indiana's Economic Health

Eastern Time in Indiana does NOT benefit business.

- Indiana is part of the world economy made possible through the internet.
- Digitization and instantaneous transfer of information through e-technology have rendered the Eastern Time Zone designation in Indiana insignificant in conducting business with the East Coast.

However, Indiana's 3-hour time difference with the West Coast is a MAJOR inconvenience

- California is the 9th largest economy in the world.
- While businesses can easily work around a one-hour time difference, a three-hour time difference causes major inconveniences with direct communications, such as conference calls, online and phone communications.
- A three-hour time difference seriously complicates business travel and produces significant jet lag.

The majority of Indiana's commodities are exported and imported among time zones west of Indiana

- The 2007 Commodity Flow Survey showed that 51% of Indiana's imports and 49% of its exports are shipped between Indiana and the three U.S. time zones west of Indiana. This was a 4% increase from 2002.
- In December 2014, the 2012 Commodity Flow Survey will be released with expectations of increased business interaction westward, reflecting the southwestern movements of population and businesses that have occurred since the 2008 recession.

Eastern Time makes same-day, nationwide delivery of products inconvenient from Indiana

- Increasing demands for same-day, nationwide delivery of specialized products is forcing some Indiana manufacturers to relocate facilities from Indiana to logistic hubs located in the Central Time Zone.
- Example: In 2013, Zimmer Orthopedics, Warsaw's largest employer, moved its distribution center from Warsaw to Memphis, TN (Central Time Zone). Their stated reason for the move was the "inability to provide same-day delivery nationwide from Indiana's Eastern Time Zone." While FedEx's second largest hub is located in Indianapolis, Zimmer couldn't get the delivery services they need nationwide because Indianapolis is in the Eastern Time Zone.
- Indiana's life science products make up one-third of all Indiana exports and contribute more than \$50 billion in annual value to Indiana's economy. Timely delivery of medical products is often critical.

Indiana businesses can't take advantage of their natural Central Time location.

- In recent years many corporations have moved their headquarters from the Eastern and Pacific Time Zones to the Central Time Zone to be more centrally located within their customer base - Boeing from Seattle to Chicago, Comerica from Detroit to Dallas, American Air Lines from New York to Dallas, etc.
- Indiana is not taking advantage of its geographically correct Central Time Zone location within the United State to attract corporations to locate here.

Questions about Restoring Indiana to the Central Time Zone

Who supports restoring Indiana to the Central Time Zone?

- To date 26,000 citizens have signed petitions in support of restoring Indiana to its original Central Time Zone.
- 47 Indiana school boards have signed resolutions supporting Central Time for Indiana.
- More than 125 businesses have signed resolutions supporting Central Time.
- The Indiana State School Bus Drivers Association.
- The Indiana Farm Bureau.

What groups of Hoosiers would benefit from Indiana being restored to the Central Time Zone?

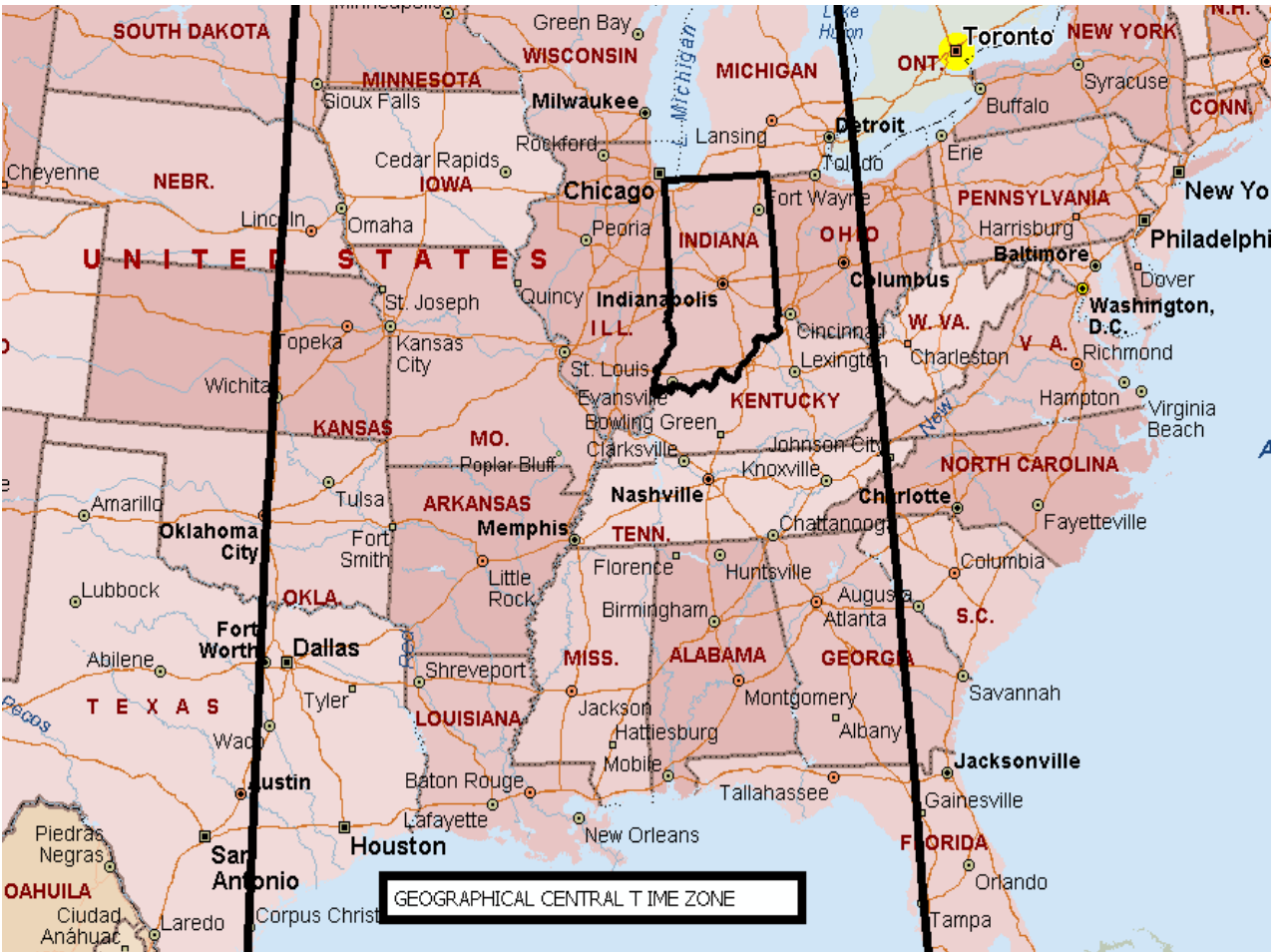
- Indiana's 850,000 Eastern Time Zone school children – their families, their education and safety.
- Indiana's Eastern Time Zone teachers who have to get up in the night to begin teaching.
- Indiana's Eastern Time Zone school districts could improve their educational effectiveness by being able to utilize the lost classroom time, as well as, the millions of dollars that are currently being wasted by school delays.
- All Eastern Time Zone teen drivers whose lives would be safer with one more hour of morning sunlight.
- 130,000,000 Hoosiers living in Indiana's Central Time counties who want all of Indiana united on the same time – Central Time.
- 80,000 Hoosiers living in the eighteen Indiana counties split by the Time Zone boundary which complicates their daily activities –school, work, business, health care, community, social.
- Indiana's 90,000 commercial construction workmen who prefer a 7a.m. – 3:30 p.m. workday but whose schedule is compromised by the need of sunlight for safety.
- Indiana's 45,000 Amish whose daily lives are complicated by the sunlight schedule of the Eastern Time Zone.
- Thousands of people whose work requires sunlight – farmers, lawn and landscape businesses, golf courses.
- Indiana's families.

What will it cost to restore Indiana to the Central Time Zone?

- Basically, nothing! It is a simple matter of not advancing the clock ahead one time.
- There would be a very minimal one-time cost to businesses to update webpages, brochures, etc.

What about daylight saving time?

- The Central Time Coalition supports the observance of Daylight Saving Time because we agree that it is important to Indiana's economic health to keep our clocks in sync year-round with the rest of the US.
- Hoosiers have historically favored the sunlight distribution of "Chicago Time" (aka *Central Daylight Time*) for spring/summer/fall because it is Hoosier-friendly.
- Indiana has a Time Zone problem, **NOT** a Daylight Saving Time problem.



Morning Darkness



- 8:20 a.m. sunrise in Nov. on Eastern
- 6:00 a.m. - school buses begin picking up students all over Ind.
- Unsafe for 850,000 students
- Unsafe for morning commuters, walkers, and joggers
- Central's morning sunlight helps burn off fog and clear winter roads



APR 11 2005 10:50

Reprinted
April 5, 2005

APR 11 2005 10:50

ENGROSSED SENATE BILL No. 127

DIGEST OF SB 127 (Updated April 4, 2005 4:44 pm - DI 75)

Citations Affected: IC 1-1; IC 8-15; IC 8-23; noncode.

Synopsis: Requires Indiana to observe daylight saving time throughout the state. Urges Governor Daniels to petition the United States Department of Transportation to initiate proceedings to hold hearings on the issue of the time zone or time zones in which Indiana's ninety-two counties should be located. Provides that the state supports the effort of any county to change the time zone in which the county is located under procedures established by federal law. Provides that the county executive of a county may exempt itself from observing daylight saving time. Requires the Indiana department of transportation to erect and maintain where appropriate signage indicating a change in the time zone line in each direction on a tollway and on the state highway system.

Effective: Upon passage; January 1, 2006.

Riegsecker, Zakas
(HOUSE SPONSORS — TORR, WOLKINS)

January 4, 2005, read first time and referred to Committee on Commerce and Transportation.
February 10, 2005, amended, reported favorably — Do Pass.
February 22, 2005, read second time, amended, ordered engrossed.
February 23, 2005, engrossed.
February 28, 2005, read third time, passed. Yeas 38, nays 10.
HOUSE ACTION
March 14, 2005, read first time and referred to Committee on Public Policy and Veterans Affairs.
March 31, 2005, amended, reported — Do Pass.
April 4, 2005, read second time, amended, ordered engrossed.

ES 127—LS 6412/DI 96+



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